# PCS Axis<sup>®</sup> Version 1.9

User and Administrator Guide



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# What's New in PCS Axis?

The following information identifies software enhancements and fixes available in version 1.9 of the PCS Axis software.

#### **Data Modification Utility**

The Data Modification Utility is a new feature that allows you to permanently move facilities and facility records, including subfacility, inspection, and maintenance records, from one facility to another facility. Use this feature when splitting or combining pipeline segments.

#### **Import and Export Routes**

Existing routes in PCS Axis can now be exported to or imported from Excel or Comma Separated Values (CSV) files. Using the new import and export capabilities, routes can be exported to a file, modified in third party tools, and then re-imported into PCS Axis, replacing the original exported route.

#### Security

Updates to user roles and their permissions in PCS Axis were made to enhance the security options available in PCS Axis. The enhancements have been made to Role Customization, allowing for a more granular configuration of a role's accessibility. These roles can be customized to the desired access levels and access to menu items and grid levels can be granted or restricted based on specific user roles.

#### **New Fields**

A new *Repair Technician* field is now available for customized layout or sort themes in the *Maintenance* grid in *Edit CPDM Data*. This field can be found under the *Test Point Maintenance* group.

#### **Mini-grids Dialogs**

*Add Record* dialogs similar to those found in the *Facility Edit* data grid were introduced to the following mini-grids:

- Test Point Detail Information
- Rectifier Anode Information
- Rectifier Negative Information

#### **Based on Icons**

Icons now appear throughout PCS Axis to indicate which Based On mode is the currently active theme mode.

#### Shortcuts

New keyboard shortcuts are now available in the following locations:

- Using Data Entry Grids: The following keyboard shortcuts are available when adding a facility information, inspection, and maintenance record and when adding or deleting a record in a Continuous Survey:
  - Press **F4** to add a history record with an effective date for currently selected grid record
  - Press **F8** add record in grid
- *Working with Pipeline Records* (Edit ROW Detail): The following keyboard shortcuts are available when adding a pipeline information record or adding a pipeline maintenance record
  - Press F4 or F8 to add a history record with an effective date
- *Working with a Continuous Survey Folder*: The following keyboard shortcuts are available when adding a continuous survey folder:
  - Press F4 or F8 to add a record in survey folder maintenance
- Using Any Date Field: The following keyboard shortcuts are available in any date field:
  - Press **T** to fill in the current date and time
  - Press + or to move the day forward or backward by one day
- Using Any Numeric Field: The following keyboard shortcuts are available in any numeric field:
  - Press + or to reverse the polarity and negate the current positive or negative value.

#### **Test Point Details Changes**

CPDM Test Point Inspection Detail mini-grid fields that contain on/off behaviors now inherit the attribute values of the linked Inspection grid field. The inherited attribute values are based on the selected value of the mini-grid PCS Field field.

In addition, the following Test Point Detail fields have updated precision requirements:

- TestPointDetailInspection.OnReading: Size: 10 Decimals: 5
- TestPointDetailInspection.OffReading: Size: 10 Decimals: 5
- TestPointDetailInspection.UncompensatedOnReading: Size: 10 Decimals: 5
- TestPointDetailInspection.UncompensatedOffReading: Size: 10 Decimals: 5
- TestPointDetailInspection.OnReadingDelta: Size: 10 Decimals: 5
- TestPointDetailInspection.OffReadingDelta: Size: 10 Decimals: 5

# About PCS Axis Help

Information in this section identifies features available in PCS Axis Help. Topics include those in the following list:

- Using PCS Axis Help
- Language Translation (page 7)
- User Discussion System (page 9)
- Commenting Guidelines (page 11)
- A comment with profanity will not be accepted or will be edited during moderation by PCS Technical Services before the comment is posted in PCS Axis Help. (page 11)

## Using PCS Axis Help

PCS Axis Help provides information for setting up and using the PCS Axis software. To view online help, click the 🕑 help button in any PCS Axis window to view a contextual help topic. Or click *Help > Help* in the main menu to open PCS Axis Help. You can also view PCS Axis Help using the following web address:

http://www.pcsaxishelp.aiworldwide.com/reverb/index.html

Viewing PCS Axis Help requires an internet browser software such as Internet Explorer<sup>®</sup>, Firefox<sup>®</sup>, Chrome<sup>®</sup>, or Safari<sup>®</sup>. Other notable features of online help include those in the following list:

- Table of contents navigation.
- Breadcrumb "you are here" navigation.

• Search with support for Boolean search operators AND and OR.

Setting search keywords in quotations marks returns exact search results. For example, typing "grid layout" (with quotation marks) returns search results for all occurrences of *grid layout*.

**IMPORTANT:** If you use Internet Explorer 9 (IE9) to view PCS Axis Help, the *Compatibility View* setting in IE9 may need to be set in order to view help topics without problems. To set *Compatibility View*, click the broken page icon in the address bar of the internet browser. Or, click **Tools** > **Compatibility View** to enable the setting.

- Integrated language translation using Google Translate.
- Integrated user discussion system using Disqus<sup>®</sup>.

Clicking the i PDF button in the main toolbar displays a PDF of the current help topic in a new window (Figure 1-1). Click the save button to download a copy of the PDF to your computer. Use Adobe<sup>®</sup> Reader<sup>®</sup> to view or print the PDF. If you need to install Adobe Reader on your computer, a free copy of the software is available for download on the Adobe website at <u>http://get.adobe.com/reader/</u>.



Figure 1-1. PCS Axis Help

## Language Translation

Clicking the ④ globe button in the toolbar of PCS Axis Help displays the *Google Translate* bar (Figure 1-2). To translate the current help topic in a different language:

• Click the down arrow in **View this page in** to open the language selection panel. Select a language and then click **Translate**.

**NOTE:** For more information about Google Translate, visit the web address <u>https://support.google.com/translate/</u>.

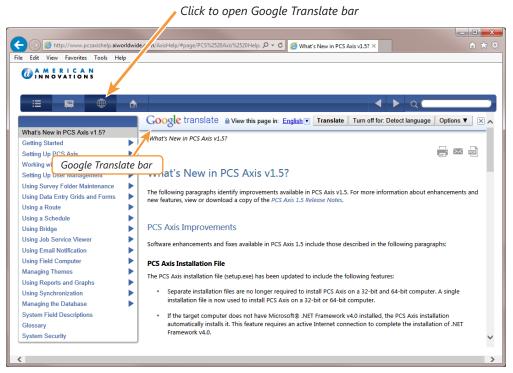


Figure 1-2. Google Translate

### Contributing an Alternative Translation

If you would like to contribute an alternative translation to Google for one or more words (Figure 1-3):

- Hover the mouse cursor over a translated word to change the cursor to a text select cursor 1. When a popup window opens click Contribute a better translation.
- **2** Click a translation to view a list of alternatives. Select or enter an alternative translation, then click **Use**.
- 3 Click **Contribute** to submit the alternative translation to Google.

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Edit View Favorites Tools	Help		🗙 🍖 Convert 🔻	🛃 S
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What's New in PCS Axis v1.4? Getting Started Setting Up PCS Axis		Configuración PCS Axis : Preparación para configurar , S Axis		a)
Preparing to Set Up PCS Axis				_
Understanding a Typical PCS Axis Workflow Understanding the System Hierarchy Setting the System Hierarchy Setting Up PCS Axis Working with Pipeline Series		Preparación para confi Despuégide la instalación de PCS Axis, consider the follow de negocio de su empresa. Anter installing you begin setting up PCS Axis, consider the follow you begin setting up PCS Axis for operation.	a l der der	
Working with a User Defined Module Norking with Pipeline Records		¿Cómo está organizado el Empre click to edit directly	native translations, or double-	
Jsing Survey Folder		empresa? términ Por eji Contribute Cancel		
Jsing Data Entry Grids	$\sim$	Mapa pueden usar términos como-derecho de vía (ROW).		

Contribute an alternative translation

Figure 1-3. Google Translate

## **User Discussion System**

PCS Axis Help provides an integrated discussion system. The discussion system is developed and hosted by <u>Disqus</u>, a company that specializes in online community development. Using the discussion system allows PCS Axis customers to submit comments, questions, and other types of feedback to PCS Technical Services via online help. PCS Technical Services moderates the discussion system providing answers to questions and replies to comments. See the section entitled *Commenting Guidelines* (page 11) for more information about posting comments in PCS Axis Help.

To add a comment in PCS Axis Help, follow these steps:

- 1 Display a help topic in PCS Axis Help that you want to provide a comment.
- 2 In the comment panel of the selected help topic, type a comment in the **Start the discussion** text box (Figure 1-4, page 10).

Continue with step 3 to post the comment as a *Guest* or step 4 (page 10) to post with your Disqus login credentials.

- **3** To post a comment as a *Guest*, follow these steps:
  - **a** Click the **Name** text box to display fields requiring data entry (Figure 1-4, page 10).
  - **b** Type your name in the **Name** text box and your email address in the **Email** field.
  - **c** Click the **I'd rather post as guest** check box. Then click **Submit** to submit your comment to PCS Technical Services.

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MAMERICAN INNOVATIONS					
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What's New in PCS Axis v1.6? Installation Guides User and Admin Guides Release Notes	Setting Up User Management	gement			
About PCS Avis Help Getting Started Setting Up PCS Avis Working with Pipeline Records Setting Up User Management Understanding User Management Understanding User Management Understanding and Edition User Addrea and Edition Users	This section explains how to work with P4 in this section include those in the follow Understanding User Management Using Computer Name User Auth Adding and Editing Users	ing list:	The information is intended for users with SysAdmin secu	urity permissions. Topics	
Using Survey Folder Maintenance	SHARE AND DISCUSS O Comments PCS Axis Help	,		GUIDELINES	
Using Email Notification Using Field Computer Managing Themes Using Reports and Graphs Using Synchronization Hubble Dealers	Sort by Newest + Start the discussio	n		Share 🖻 Favorite 🖈	Comment Panel
Managing the Database System Field Descriptions Glossary System Security	SIGN IN WITH	OR FICK A NAME ⑦ Name Email Password			
5		I'd rather post as guest		~	

Figure 1-4. Posting a Comment as a Guest

- **4** To post a comment using your Disqus login credentials:
  - **a** In the comment panel, click **Login** and select **Disqus** in the menu that opens.
  - **b** Provide login credentials for your Disqus account when the *Sign in to Disqus* dialog box opens (Figure 1-5).
  - **c** In the comment panel of the help topic, click **Submit** to submit your comment to PCS Technical Services.

🧉 Sign in to Disqus - Internet Explorer	<b>X</b>
https://disqus.com/next/login/?forum=p	csaxishelp
DISQUS	
EMAIL OR USERNAME	
PASSWORD	Forgot password?
Password	
Sign in Cancel	Need an account?

Figure 1-5. Disqus Login

## **Commenting Guidelines**

The discussion system in PCS Axis Help allows you to submit comments, questions, and other types of feedback about PCS Axis to PCS Technical Services. If you need help with using PCS Axis or have a suggestion for a new feature, you can submit a comment using the discussion system.

The discussion system requires that you use a valid email address when submitting a comment. This also allows PCS Technical Services the ability to follow-up with any questions, comments, or feedback you may have.

Before a comment is posted in PCS Axis Help, it is first submitted to PCS Technical Services for moderation purposes. If the comment is considered to be inappropriate or off-topic, it is not posted in PCS Axis Help.

When submitting a comment, follow these guidelines:

• Provide a valid email address.

The discussion system does not allow you to submit a comment anonymously. You can, however, submit a comment as a "guest" using a valid email address.

• Be respectful of others.

The discussion system is great way to share product knowledge with other PCS Axis users. Be respectful when replying to another user's comments or questions.

• Avoid using profanity.

A comment with profanity will not be accepted or will be edited during moderation by PCS Technical Services before the comment is posted in PCS Axis Help.

# **Getting Started**

Information in this manual explains how to set up and use American Innovations' Pipeline Compliance System  $Axis^{\ensuremath{\mathbb{R}}}$  software (PCS  $Axis^{\ensuremath{\mathbb{R}}}$ ). The information is intended for users of the software and the PCS Axis system administrator.

Topics in this chapter include those in the following list:

- Starting PCS Axis (page 14)
- Activating Bridge Import for Operation (page 15)
- Activating Telluric Compensation (page 17)
- System Overview (page 18)
- Modules and Related Options (page 19)
- System Requirements (page 21)
- Viewing Information About PCS Axis (page 24)
- Technical Support (page 25)

## Starting PCS Axis

Information in this section explains how to start the PCS Axis software. The Windows user name and password of the person currently logged in to the computer is used to start the software and log in to the database. If PCS Axis is set up with the security option *Requires Windows Password*, a password is required to log in to the database. See *Setting Options* (page 38) for more information.

Complete the following steps:

- Double-click the PCS Axis desktop shortcut and select PCS Axis to start the software.
- 2 If the *Login* window opens, type your Windows password in the **Password** field and then click the login button 🕑 to start the software (Figure 2-1).



Figure 2-1. Login

## Activating Bridge Import for Operation

If your company purchased the optional Bridge add-on for importing raw data from a third-party application, running a *Basic* Bridge import for the first time requires you to activate Bridge using the license file provided by American Innovations (AI). A Bridge license is required only for those operations that use the *Basic* Bridge function to import data.

Operations using the *Bullhorn* Bridge function to import data do not require a Bridge license. Likewise, using Bridge to export data from PCS Axis also does not require a Bridge license.

The Bridge license becomes part of the PCS Axis database during the activation process. This allows a single license to apply to all PCS Axis users in your company, including remote clients (subscribers) in a client/server network who use a subscription. If the Bridge license is activated after a subscription has been created or used, the subscription will need to run the *Synchronize Now* or *Resynchronize* command to have the Bridge license applied to the subscription. For more information about how to synchronize a subscription, see *Synchronizing a Subscription* (page 785).

**NOTE:** You can maintain all PCS Axis licenses for your organization in the same shared folder location. PCS Axis will request the file and location the first time each user opens the PCS Axis application. The Bridge activation key is assigned only once for the PCS Axis database; once it is assigned it functions for all users. If you are unable to locate your Bridge license file, contact PCS Technical services for assistance at pcstechservices@aiworldwide.com.

To activate Bridge import for operation, follow these steps:

- 1 Start PCS Axis if the software is not running.
- 2 Click **Tools** > **Job Service Viewer** to open the *Job Service Console* window (Figure 2-2, page 16)

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F	ile Modules Data Entry	Reports / Graphs To	ools Field Computer	Help 😯 PC	S Axis	Welco	me John Smith	😢   🔀 Log Out
	Job Service Console $  imes $							
	Job Type All	-						
L	Job Service Status							
	Status Running							
	Status Time 12/2/2013 2:							
	License Not Valid	Activate Brid	ge Import License					
	Queue					Reindex Database	Current Jobs	Job History
	Job Type	Direction	State	Last Update				•
								1
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Figure 2-2. Job Service Console

- **3** Click **Activate Bridge Import License**. When the *Activation Key* dialog box opens, navigate to the license file and select it (Figure 2-3).
- 4 Click **Open** to open the license file and return to the *Job Service Console* window.



Figure 2-3. Activation Key

5 Verify Running displays in the *Status* field and Valid displays in the *License* field (Figure 2-4). If these messages are not currently displayed, please contact PCS Technical Services for assistance at <u>pcstechservices@aiworldwide.com</u>.

	lules Data Entry	Reports / Graphs T	ools Field Computer	Help 🔅 PC	CS Axis	Welco	ome John Smith   😣   🔀	Log
	e Console ×							
Job Type	All vice Status	Ŧ						
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License	Valid							
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							🖽 Row Coun	l

Figure 2-4. Valid Bridge License

## **Activating Telluric Compensation**

If your company purchased the optional Telluric Compensation feature, it becomes operational after activating your PCS Axis license during the software installation process.

Customers with an existing PCS Axis license who want to use Telluric Compensation will need a new PCS Axis license and software upgrade. For more information about upgrading your PCS Axis license, contact *Technical Support* (page 25).

**Note:** You can maintain all PCS Axis licenses for your organization in the same shared folder location. PCS Axis will request the file and location the first time a user opens the PCS Axis application. If you are unable to locate the license file, contact PCS Technical Services for assistance at <u>pcstechservices@aiworldwide.com</u>.

## System Overview

PCS Axis is a database application used worldwide by distribution and transmission companies to manage pipeline compliance and integrity data. The application uses a SQL server database to store and manage data for one or more modules (Figure 2-5). All modules share a common interface that allows users to easily work with data regardless of which module they use. Modules are based on common industry practices and various Department of Transportation (DOT) regulations. These include DOT 192 titled *Transportation of Natural Gas and Other Gas by Pipeline: Minimum Federal Standards Safety* and DOT 195 titled *Transportation of Hazardous Liquids by Pipeline*.

The PCS Axis database is fully ODBC compliant allowing for integration with other databases, such as GIS (geographic information system) and ERP (enterprise resource planning) databases.



Figure 2-5. PCS Axis System Overview

## Modules and Related Options

PCS Axis modules are purchased either separately or as a package. Modules and related options, such as Bridge Import and Telluric Compensation, become operational after entering the software activation key provided by American Innovations (AI). A description of PCS Axis modules and their related options is provided in the next table (Table 2-1).

Modules/Related Options	Description
Cathodic Protection Data Manager (CPDM)	CPDM manages cathodic protection (CP) data for facility types such as test points, rectifiers, foreign bonds, galvanic anodes, and tanks. Distribution and transmission companies use this module to manage and track corrosion data as well as other types of corrosion-related data.
Indirect Survey Manager (ISM)	ISM manages and analyzes survey data for above ground continuous surveys (also referred to as indirect surveys). You can enter survey readings manually or use the Allegro Field PC or PCS Axis Bridge to transfer survey readings in ISM. The types of continuous surveys supported in ISM include: Close Interval Survey (CIS), AC Close Interval Survey (AC CIS), DC Voltage Gradient (DCVG), AC Voltage Gradient (ACVG), AC Current Attenuation (ACCA), Soil Resistivity, and Pearson.
Atmospheric Corrosion Manager (ACM)	ACM manages atmospheric corrosion data as required by US DOT 192 and 195 regulations.
Valve Manager (VM)	VM manages valve inspection and repair data. The module provides compliance scheduling, data management, and reporting of valve information.
Internal Corrosion Manager (ICM)	ICM tracks internal corrosion data in compliance with US DOT 192 and 195 regulations. ICM supports facility types such as inhibitor injectors, coupons, samples, and probes.
Leak Survey Manager (LSM)	LSM manages and provides compliance scheduling for leak surveys, classifies leaks and repair data, and supports follow-up activities.

Table 2-1. PCS Axis Modules and Related Options

Modules/Related Options	Description			
Custom Module Management (CMM)	CMM is an optional module available for purchase that becomes operational after activating your PCS Axis license. PCS Axis supports up to ten (10) user defined modules with each module supporting up to ten (10) user defined facility types. Features and functionality available in the various modules distributed with PCS Axis are also available in CMM. These include routes, schedules, reports/graphs, user defined fields (UDFs), themes, and so on.			
Bridge Import	An optional feature available for purchase that requires a Bridge activation key for use. This feature allows you to transfer data between PCS Axis and an external system, such Bullhorn <sup>®</sup> Asset Tracker (BAT <sup>™</sup> ) or a GIS or work management system.			
Telluric Compensation	An optional feature available for purchase that becomes operational after applying your PCS Axis license. This feature provides support for telluric current compensation of survey readings and management of stationary survey data used in telluric compensation. PCS Axis enhancements for telluric compensation include CPDM, ISM, Stationary Survey Maintenance, Field Computer, and Reports/Graphs.			

Table 2-1.	PCS Axis Modules	and Related	Options (continued)
			- p (

## System Requirements

The following information identifies system requirements for running PCS Axis in a client/ server network. If desired, the Job Service can run on a standalone system. Refer to Table 2-2 for the client computer requirements. Under client/server network conditions, a consistent network connection of 10 Mbps or greater is required. For larger environments with greater data demands, your actual requirements may vary. Contact PCS Technical Services for assistance in determining the best bandwidth and server specifications for your organization, see *Technical Support* (page 25).

See Table 2-2 for local client computer requirements and Table 2-3 (page 23) for server and database requirements.

Properties	Recommended
Processor	Intel Core i7
Processor Speed	2.3 GHz or faster
RAM	8 GB
Operating System	Windows 7 64-bit, Service Pack 1 (SP1)
Available Disk Space	720 MB (see note)
Resolution	1920x1080
Microsoft .NET Framework	Version 4.5 (see note)

#### **Table 2-2. Local Client Computer Requirements**

#### **NOTES:**

- *Microsoft .NET Framework*: If the target computer does not have Microsoft .NET Framework v4.5 installed, the PCS Axis installation automatically installs it for you. This feature requires an active Internet connection to complete the installation of .NET Framework v4.5.
- PCS Axis Installation: By default, only the PCS Axis application is selected for installation on the computer of local clients in a client/server network. See Table 2-3 (page 23) for information about the system requirements for installing the PCS Axis database and job service on the central database server.

- *Microsoft SQL Server Express 2008 R2 SP2, 64-bit*: For client systems that wish to use Synchronization, a 64-bit version of Microsoft SQL Server 2008 Express R2 SP2 (or Standard edition for databases exceeding 10 GB) must be installed on the subscriber's computer (the remote client). Once PCS Axis is installed, a subscription database must be created on the subscriber's computer prior to working off-line.
- *Disk Space with Synchronization:* If using a remote client to subscribe to and synchronize with a central database, sufficient disk space must be reserved for database use (11 GB when using Microsoft SQL Server 2008 Express).

Properties	Recommended
Processor	Intel Xeon
Processor Speed	2 Quad Core CPUs at 2.4 GHz or faster
RAM	32 GB (see note)
Operating System	Windows Server 2008 R2
Relational Database Software	SQL Server 2008 R2
Available Disk Space	100 GB (see note)
Resolution	1920x1080

 Table 2-3. Dedicated Central Database Server Requirements

#### **NOTES:**

- Larger databases may require more RAM for optimum performance.
- Hosting the PCS database on a shared SQL server may result in poor performance.
- Consult with your company's IT personnel or DBA to determine where database backups will be created.
- The PCS Axis database installs on the central database server. If selected in *Setup Wizard* during the installation, the PCS Axis application and job service can install on the central database server as well. For local client and subscriber computer requirements, see Table 2-2 (page 21).

## Viewing Information About PCS Axis

To view information for the current database connection, as well as the software version of PCS Axis, click **Help** > **About PCS Axis**. The *About* dialog box displays the current database connection in the *Connection* field. The *Version* field identifies the current database and software version (Figure 2-6).

To copy information to the Windows clipboard, click **Copy To Clipboard**. The information stores in the Windows clipboard until you paste the information elsewhere, such as in a Microsoft<sup>®</sup> Word or Windows<sup>®</sup> Notepad file, or an email message. Use this feature when contacting PCS Technical Services for support with PCS Axis.

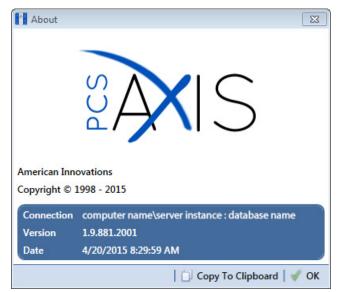


Figure 2-6. About PCS Axis

## **Technical Support**

If you need assistance with PCS Axis, have a feature request or bug to report, or have a comment or suggestion about this document, your feedback would be appreciated. If you have a training need for your organization or would like to know more about upcoming training classes, use the following information to contact PCS Technical Services:

Support Email:	pcstechservices@aiworldwide.com
Support Telephone:	1-800-229-3404, select 1, then press 2
American Innovations:	http://www.aiworldwide.com

## Notes

# Setting Up PCS Axis

PCS Axis modules share a common interface and many similar functions. Information in this chapter explains how to set up features common to all PCS Axis modules.

If you are unable to access a PCS Axis menu or perform a particular function, check with your system administrator to verify your PCS Axis user account is set up with an appropriate user role in *User Management* (page 187).

Topics in this section include those in the following list:

- Preparing to Set Up PCS Axis (page 30)
- Understanding a Typical PCS Axis Workflow (page 32)
- Understanding the System Hierarchy (page 33)
- Setting the System Hierarchy (page 34)
- Setting Up PCS Axis (page 36)
- Working with Custom Security Roles (page 57)
- Working with Pipeline Series (page 120)
- Working with a User Defined Module (page 127)

## Preparing to Set Up PCS Axis

After installing PCS Axis, consider the following questions before you begin setting up PCS Axis for operation. Answers to these questions determine how you set up PCS Axis to fit your company's business needs.

#### Question: How is your company's pipeline system organized?

Pipeline companies organize their distribution or transmission pipeline system using certain terms to describe how the system is organized. For example, terms such as Right-of-way (ROW), Pipeline Segment, Section, Section Map, District, County, Region, or State may be used.

Setting up PCS Axis for operation requires that you define a pipeline system hierarchy. PCS Axis supports up to five (5) hierarchy levels and can be organized and named in the same manner as your company's pipeline system.

#### Question: How does your company identify inspection points on a pipeline?

A location name and location format must be set up for inspection points on a pipeline before users begin entering survey data in PCS Axis. Once this information has been established, it is recommended that you do not change it in order to maintain data integrity.

When you first install PCS Axis, default settings for location name and location format are *Milepost* and *Station Number* respectively. However you can change both of these to match your company's method for identifying inspection points on a pipeline.

#### Question: What is your company's policy for scheduling surveys?

Default settings in PCS Axis for survey schedules and grace periods are based on current regulations. You can however edit these default settings to match your company's survey policies instead.

For example, the grace period for surveying long lines is three months. However your company's policy may be less than three months. When setting up PCS Axis survey schedules, enter your company's grace period to ensure surveys are scheduled correctly.

#### Question: Does your company want to use PCS Axis security features?

The User Management feature in PCS Axis controls system security using a role based method. Each PCS Axis user is assigned a user role. Users with *SysAdmin* security permissions have full control of the hierarchy and all system features. Users with *User* or *Read Only* security permissions have limited control.

For a list of user role permissions assigned to the *User* and *Read Only* user roles, see *System Security*.

#### Question: Will your company need unique data recorded in PCS Axis?

Although PCS Axis provides many fields for entering data, you can create what is called a *User-Defined Field* (UDF) when a PCS Axis field does not exist. Your company's data collection forms are a good place to gather data for a UDF you may want to create.

For example, if test points are identified by map numbers, create a UDF to be used for data entry of test point map numbers.

## *Question:* Will PCS Axis themes need to be customized to fit your company's business needs?

PCS Axis uses themes for many operations, such as themes for data entry grids, sorting methods, filtering data, and field computer prompts. The PCS Axis software installation includes several installed themes ready for use.

You can modify PCS Axis installed themes and also add new themes to include only those features that fit your business needs. For example, you might want to include specific data fields for entering and viewing a particular type of survey data.

*Question:* Do you want to set up picklists that allow users to choose from a list of acceptable choices when entering survey data?

When a data entry field is limited to certain data, consider creating a picklist that includes only those items for selection, such as repair codes, priority levels, or status conditions.

For example, you may want to create a picklist with items for selection that identify insulator status as good, missing, and shorted. Picklists are helpful in reducing data entry errors by allowing users to select an item from a list of approved choices instead of entering data manually.

## Understanding a Typical PCS Axis Workflow

A typical workflow for working in PCS Axis is shown in Figure 3-1. Some operations are required and only occur once when setting up PCS Axis, such as setting up system *Options* and *Edit ROW Detail* identified in the following figure. Others may occur more often as needed by PCS Axis users with appropriate security permissions, such as adding or moving pipeline segments in the hierarchy; adding survey folders; customizing themes and reports; or creating routes and schedules for facility survey inspections.

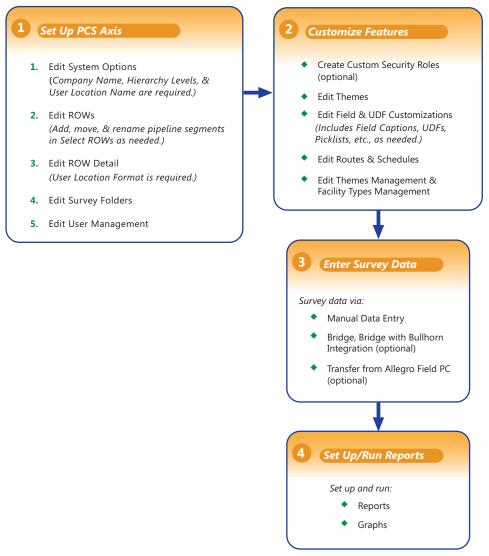


Figure 3-1. Typical PCS Axis Workflow

## Understanding the System Hierarchy

Before you begin entering data in PCS Axis, you first need to establish the system hierarchy and enter your company's name. The hierarchy determines how PCS Axis organizes data. The company name displays at the top of all reports and graphs.

You can create a hierarchy that reflects how your company categorizes its pipeline system. For example, you may want to create a hierarchy based on one or more of the following criteria: division, district, county, region, system, right-of-way (ROW), or section map.

PCS Axis supports a hierarchy structure with up to 5 levels. The top hierarchy level includes either your company's name or other type of descriptor. Figure 3-2 shows a hierarchy structure with 3 hierarchy levels. The names of hierarchy folders as well as ROW Code and ROW name support up to 100 characters.

**IMPORTANT:** It is recommended that you do not change the hierarchy structure after entering data in the database.

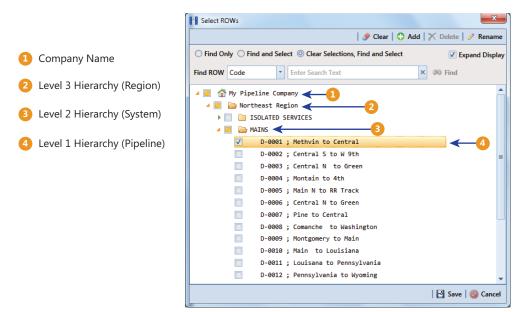


Figure 3-2. Example of Hierarchy Structure

## Setting the System Hierarchy

This procedure explains how to set up PCS Axis with the following required system settings: your company's name, the number of levels in the system hierarchy, and a name for inspection points on a pipeline. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

The required setting *User Location Format* in *Edit ROW Details* will not be completed during the initial system set up. After adding pipeline records in the system hierarchy, the User Location Format can be configured for each pipeline record to identify how inspection points are located on a pipeline. For more information, see *Understanding Default Location Formats* (page 146).

To create the system hierarchy, follow these steps:

- 1 Click Tools > Options > General to open the General options page (Figure 3-3).
- 2 Type the name of your company in the field **Company Name**.
- **3** Identify how your company refers to inspection points on a pipeline. For example, type *Milepost, Station Number, Reference Reading*, or other type of descriptor in the field **User Location Name**.

			18	Sa
•	General			
All	Disable Attached Document Preview		Public	1
Bullhorn	Include Unit Of Measure In All Captions		V Private	
Criteria	Activate Metric Mode		Public	
Editing Email Notification			Public	
Field Computer		My Pipeline Company		
General	Surveyed Status Behavior	Any	Private	
Hierarchy	Use Date Only		Public	
Reports	User Location Name	Milepost	Public	
Security	Disable Link Attachments		Public	
Synchronization	Diable Entertaiements		, and	

Figure 3-3. Company Name and User Location Name

- 4 Click the **Hierarchy** tab to open hierarchy options page (Figure 3-4).
- **5** Click the check box **Hide Parallel Lines** if you want to hide features in PCS Axis that allow you to create and display parallel lines in the hierarchy.

**Note:** When *Hide Parallel Lines* is enabled, parallel lines are hidden in *Select ROWs* and in the *Add New Node* dialog box. Distribution companies with no parallel lines typically use this setting. PCS Axis identifies parallel lines using the fields *Pipe*, *Pipeline Code*, and *Pipeline Name*. For a description of these fields refer to *System Field Descriptions* on page 811.

- **6** Identify how many levels to include in the hierarchy. Click the down arrow in the **Levels** field and select the number of hierarchy levels in the selection list.
- 7 Identify how pipelines are referred to in the system. For example, type *ROW* or *Segment* in the **Level 1** field.
- 8 Type a description for each additional level in the hierarchy using the fields labeled **Level 2** through **Level 5** as required.
- **9** (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 36).
- **10** Click **Save** and then continue with the next section *Setting Up PCS Axis* (page 36) to continue setting up PCS Axis for operation.

•				
All	General Hide Parallel Lines	7	Public	
Bullhorn			Public	
Criteria		3 Levels		
Editing Email Notification	Level1	ROW	Public	
Field Computer	Level2	System	Public	
General		Region	Public	
Hierarchy	Level3	Region		
Reports				
Security				
Synchronization				

Figure 3-4. Hierarchy Levels

## Setting Up PCS Axis

PCS Axis provides several property settings that allow you to customize the software according to your company's business needs. Other settings effect the functionality of certain PCS Axis features. Information in this section explains how to set each of these property settings. Topics include those in the following list:

- Understanding Public and Private Property Settings
- Setting Options (page 38)
- Working with Custom Security Roles (page 57)
- Setting Properties in Field and UDF Customizations (page 67)
- Using an Application Scheme (page 119)
- Choosing a Printer for PCS Axis (page 119)

## Understanding Public and Private Property Settings

Some property settings in Options, once configured, apply to all users, while others can be changed by an individual user for their login. Property settings that include a *Public* caption can only be changed by a SysAdmin, and the setting made by the SysAdmin applies globally to all users. For property settings accompanied by a *Private* check box, the SysAdmin can determine whether or not a general user can modify the property setting. See Figure 3-5.

When the *Private* check box is checked, the currently logged in user can change the associated property setting. Changes are "private" and only apply to the logged in user who makes a change to the setting. If a *Private* check box is unchecked, the associated property setting made by the SysAdmin applies globally to all users and only the SysAdmin can change this value.

File Modules Data Options ×	Entry Reports / Graphs Tools Field C	Computer Help 🔅 PCS Axis	Welcome .	lehn Smith   😁   🖬 Log Out	Enabled Private Check Box: currently logged in user can change the property setting. Changes are "private"
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Figure 3-5. Options Public and Private Property Settings

Only a SysAdmin can see *Private* check boxes. For all other users, a *Private* caption appears alongside the "private" and editable property settings. A *Public* caption is displayed for globally-applied settings.

## Setting Options

PCS Axis uses property settings in *Options* to perform many functions across all modules, such as arranging data, performing calculations, generating reports, and allowing useraccess to certain features. Required settings include *Hierarchy levels*, *Company Name*, *User Location Name*, and *Criteria*. If optional add-ons have been purchased, such as *Bridge* or *Bridge with Bullhorn integration*, setting properties for these features are also required.

Information in this section explains how to set properties in *Options*. Topics in this section include those in the following list:

- Setting Bullhorn Options (SysAdmins Only) (page 39)
- Setting Criteria Options (page 40)
- Setting Editing Options (page 41)
- Setting Email Notification Options (page 44)
- Setting Field Computer Options (page 47)
- Setting General Options (page 47)
- Setting Hierarchy Options (page 51)
- Setting Report Options (page 51)
- Setting Security Options (page 52)
- Setting Synchronization Options (SysAdmins Only) (page 54)
- Disabling Synchronization (SysAdmins Only) (page 56)

**Note:** A *Public* caption indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

(SysAdmin only) For options accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 36).

## Setting Bullhorn Options (SysAdmins Only)

If you plan to use Bridge to transfer data from your account on Bullhorn<sup>®</sup> Asset Tracker (BAT<sup>M</sup>), ensure the *Bullhorn* options are set first. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps to set *Bullhorn* property settings in *Options*:

1 Click Tools > Options > Bullhorn tab to open the Bullhorn options page (Figure 3-6).

**NOTE:** You can also display the *Bullhorn* options page by clicking the parrow above the navigation panel and then selecting *Bullhorn* in the selection list that opens.

- 2 Type http://www.bullhornsys.com/BATAPI/BATAPI.svc/extract in the field *Extract Endpoint Url.*
- **3** Type **http://www.bullhornsys.com/BATAPI/BATAPI.svc/mapping** in the field *Mapping Endpoint Url.*
- 4 Click **Bave** to save changes.

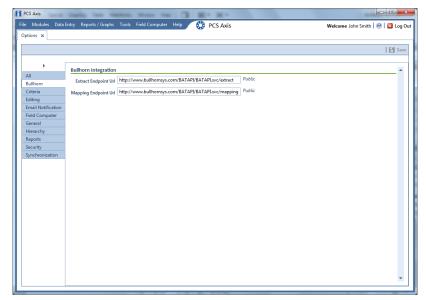


Figure 3-6. Bullhorn Options

### Setting Criteria Options

The *Criteria* options screen sets the following property settings: (if available) Telluric threshold, days between an inspection reading and pipe-to-soil reading, and casing criteria. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps to set the Criteria options:

- If the *Options* window is not open, click **Tools** > **Options** to open the window. Then click the **Criteria** tab to open the *Criteria* options page (Figure 3-7 (page 41)).
- **2** If your PCS Axis license includes the optional *Telluric Compensation* feature, the field labeled *Default Telluric Threshold* is present in the *Criteria* page.

The default threshold used to identify telluric effects in an SDL (stationary data logger) data set is 0.010 volts. If you want to change the default threshold, type a value in volts in the field **Default Telluric Threshold**.

PCS Axis calculates a baseline average for survey measurements in an SDL data set. If any survey measurement in the data set is above or below the baseline average by 0.010 volts, this indicates the data set exhibits telluric current effects.

**NOTE:** For information about how to upgrade a PCS Axis license to include *Telluric Compensation*, contact *Technical Support* (page 25).

**3** Identify the isolation criteria for casing inspections. Type a value in the field **Casing Criteria Minimum Difference Between P/S and C/S** to set the minimum difference allowed between pipe-to-soil (P/S) and casing pipe-to-soil (C/S) readings before the casing is considered shorted. The default setting is 100 mV.

**NOTE:** PCS Axis displays a warning message when the minimum difference does not meet the casing criteria for an inspection reading entered in the data entry grid. Similarly, an entry is added in the *Field Computer Log* when inspection readings transferred from the Allegro do not meet casing criteria.

4 Identify the number of days after an inspection reading is taken that a native pipeto-soil (P/S) reading is taken. Type the number of days in the field **Days To Look Forward From Inspection For Native P/S**.

**NOTE:** The number of days effects the system calculation for the fields *Effective Native P/S* and *Effective Native Date* in data entry grids. Native P/S is a potential reading taken prior to any current placed on the pipeline. It is also referred to as a depolarized or static potential reading.

- SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 36).
  - PS Avis
     Image: Control of State Computer
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     Wetcome John Smith
     Image: Control of CPDM

     Options X
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     All
     Image: Control of Control of Control of CPDM
     Image: Control of Con
- 6 Click 💾 Save to save changes.

Figure 3-7. Criteria Options

## Setting Editing Options

Making changes to the *Editing* properties alters the behavior when entering data in data entry grids. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps in the *Editing* page of *Options*:

- 1 If the *Options* window is not open, click **Tools** > **Options** to open the window.
- 2 Click the **Editing** tab to open the *Editing* options page (Figure 3-8).

Modules Dat	a Entry Reports / Graphs Tools Field Computer Help 🔗 PCS Axis	Welco	🛲 John Smith   🔨   🔀 Log C
			Bave
•	Data Entry Helpers		
All	Date Carry Forward Enabled Option 🔽	V Private	
Bullhorn	Technician Carry Forward Enabled Option	V Private	
Criteria		- Private	
Editing Email Notification	Technician Carry Forward Method Option LastTechnician		
Field Computer	Threstamp Readings Enabled Option	Private	
General	General Show Detail Inspection Entry Grid 🔽	V Private	
lierarchy	Miscellaneous	V Private	
leports	Show Grid Tooltips Option 🔽	V Private	
ecurity	- Warnings	· · · · · · · · · · · · · · · · · · ·	
ynchronization	Warn When Below Protection Criteria Enabled Option 🖌	Private	
	Require Remarks When Range Or Criteria Is Violated Option	Private	
	Warn Before Permanent History Record Changed Option	V Private	
	Warn When Outside Established Range Values Enabled Option	V Private	
	warn when outside Established kange values Enabled Option	Private	
			•

Figure 3-8. Editing Options

- **3** Review the information in Table 3-1 and check or uncheck an option's check box or select from the drop downs as needed.
- 4 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 36).
- **5** When you finish, click **Bave** to save changes.

Option	Description
Date Carry Forward Enabled Option	Use the last entered survey date as the survey date for the next record when working in an <i>Inspection</i> grid or form.
Technician Carry Forward Enabled Option	When entering inspection/maintenance data in either the <i>Inspection</i> or <i>Maintenance</i> grid, automatically enter a person's name in the <i>Technician</i> field (Inspection grid) or <i>Rengin Technician</i> (Maintenance grid) using one of the
Technician Carry Forward Method	<i>Repair Technician</i> (Maintenance grid) using one of the following methods:
Option	• <i>Last Technician</i> : Use the name of the last person entered in the <i>Technician</i> field.
	<ul> <li>Security: Use the name of the person currently logged into PCS Axis.</li> </ul>
Timestamp Readings Enabled Option	Add today's date as the inspection date when entering readings in the <i>Inspection</i> grid.
Show Detail Inspection Entry Grid	Display the CPDM <i>Test Point Inspection Detail</i> mini- grid. Enabling this option allows you to work with test points that have multiple potential readings, such as a test point with multiple readings for Structure P/S, Casing P/S, or On/Off Pair user defined fields (UDFs).
	<b>Note:</b> This system option is not present when using the optional PCS Axis <i>Telluric Compensation</i> feature. The mini-grid displays by default and cannot be disabled.
Show Grid Tooltips Option	Display a field description when the user hovers the mouse over a data entry field.
Warn When Below Protection Criteria Enabled Option	Display a warning message when a user enters an inspection reading that is below the protection criteria value specified in the <i>Test Point Protection Criteria</i> field of the facility <i>Information</i> grid.
Require Remarks When Range Or Criteria Is Violated Option	Display a message prompting the user to edit the inspection reading or enter a description in the <i>Inspection Remarks</i> field when the entered reading is out of range or does not meet the criteria limit specified in <i>Options</i> (Tools > Options > Criteria).
Warn Before Permanent History Record Changed Option	Display a warning message to the user before changes are made to a permanent history record. AI recommends this option be enabled if your company plans to maintain history records.
Warn When Outside Established Range Values Enabled Option	Display a warning message when a user enters an inspection reading that is out of range or under criteria.

#### Table 3-1. Editing Options

### Setting Email Notification Options

The *Email Notification* options determine how email reports should be sent. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps to set *Email Notification* property settings:

1 If the *Options* window is not open, click **Tools** > **Options** to open the window. Then click the **Email Notification** tab (Figure 3-9).

tions ×		ield Computer Help 🔅 PCS A		Welcome John Smith   🥶   🔀 Log
				🗄 Sa
•	General			
All Bullhorn	Email Smtp Host Name	smtp.company.com	Public	
Sullhorn Criteria	Email Smtp User Name		Public	
diting			Public	
mail Notification	Email Smtp Password	Password		
ield Computer	Email From	DoNotReply@company.com	Public	
Seneral	Email Enable Ssl		Public	
Hierarchy	Disable Email Service		Public	
Reports Recurity	Email Default Time		Public	
Synchronization			Public	
Jina	Email Log Retention In Days	180		
	Email Max Attachment Size In Mb	10	Public	

Figure 3-9. Email Notification Options

2 Type the host name of the SMTP email server your company uses to send email in the field **Email Smtp Host Name**.

**NOTE:** SMTP is an acronym for Simple Mail Transfer Protocol. It is a data transmission format used to send email.

- **3** Type a user name in the field **Email Smtp User Name** that is associated with the email address you plan to use for sending email notifications.
- **4** Type a password in the field **Email Smtp Password** that is associated with the user name and email address you plan to use for sending email notifications.
- **5** In the field **Email From**, type the email address you plan to use for sending email notifications.

**6** If the email server supports SSL protocol, click the check box **Email Enable Ssl** to place a check mark inside the check box.

When an email server supports SSL (secure socket layer) protocol, the email server transmits information in an encrypted form for security purposes. If needed, contact your IT System Administrator to determine if your company's email server supports SSL.

**Note:** When *Email Enable Ssl* is disabled (empty check box) and the email server supports SSL protocol, recipients will not receive PCS Axis email notifications. PCS Axis also adds an entry in the log of Job Service Viewer to identify email notification failures (*Tool > Job Service Viewer > Job History > Log*).

7 Use the check box **Disable Email Service** to stop or start sending email notifications to *all* email recipients.

To stop sending email notifications to *all* recipients, click the check box to place a check mark inside the check box. To begin sending email notifications again, clear the check mark by clicking the check box. For more information, refer to *Stopping Delivery of Email Notifications* (page 590).

8 Enter a default time to send email notifications in the field **Email Default Time**. Use 12-hour time format to indicate the hour, minute, and AM/PM setting (HH:MM AM/PM). The default time is used when an email report is not set up with a delivery time in the *Email Reports* tab of *Email Notification* (*Tools > Email Notification > Email Reports* tab).

**IMPORTANT:** When setting a default time to send email notifications, choose a time that does not impact other network services or computer resources.

**9** In the field **Email Log Retention In Days**, enter the number of days to store a copy of the email log in the database. Entries in the email log are purged from the log after the specified number of days.

**IMPORTANT:** Storing the email log in the database increases the size of the database. PCS Axis adds an entry in the log each time an email is sent. The log also includes email recipient information; email delivery mode and frequency; hierarchy assignments; and email report attachments in Adobe<sup>®</sup> PDF format.

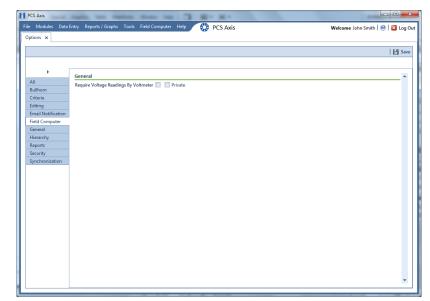
- 10 In the field Email Max Attachment Size In Mb, enter a value in megabytes (MB) that identifies the maximum size allowed by the email server for attachments in an email. Because some email servers are set up to process emails no larger than 10 MB in size, it may be necessary to contact your IT department for this information to ensure email recipients receive email notifications.
- **11** Click **Bave** to save changes.

## Setting Field Computer Options

The *Field Computer* options provides access to property settings related to the Allegro Field PC. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

If your company plans to use the Allegro Field PC with PCS Axis, complete the following steps to set up *Field Computer* options:

- If the Options window is not open, click Tools > Options to open the window. Then click the Field Computer tab (Figure 3-10).
- 2 To only use the Allegro digital voltmeter to record voltage readings, enable the option **Require Voltage Readings By Voltmeter**. Enabling this option prevents manual data entry of voltage readings on the Allegro.
- **3** (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 36).



4 Click 💾 Save to save changes.

Figure 3-10. Field Computer Options

### Setting General Options

The *General* options set general PCS Axis property settings, such as display settings and general behaviors. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

To set property settings in the *General* page of *Options*, follow these steps:

- 1 If the *Options* window is not open, click **Tools** > **Options** to open the window.
- 2 Click the **General** tab to open the *General* options page (Figure 3-11).

FI F	CS Axis				
File	Modules Data i	Entry Reports / Graphs Tools Field C	omputer Help 🔅 PCS Axis	Welcome John Smith	🕖 🛛 🔀 Log Out
0	ptions ×				
l r					🔡 Save
	•	General			-
	All	Disable Attached Document Preview		Public	
	Bullhorn Criteria	Include Unit Of Measure In All Captions	V	V Private	
	Editing	Company Name	My Pipeline Company	Public	
	Email Notification			Public	
	Field Computer	Metric Milepost Delimiter	i chou		
	General	Surveyed Status Behavior			
	Hierarchy Reports	Use Date Only		Public	
	Security	User Location Name	Milepost	Public	
	Synchronization	Disable Link Attachments		Public	

Figure 3-11. General Options

- **3** Review the information in Table 3-2 (page 49) and check the options' check boxes or select from the drop downs as needed.
- 4 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 36).
- 5 When you finish, click 💾 Save to save changes.

Option	Description
Disable Attached Document Preview	Applies to documents that have previously been attached to a record in a data grid. When the option is enabled, users are unable to preview an attached document in the <i>Preview Attached Documents</i> window. When the option is disabled, users can open an attached document for editing or viewing purposes if the file type of the attached document is associated with a default software program on their local computer. See <i>Viewing an Attached Document</i> (page 165) for related information.
Include Unit Of Measure In All Captions	Include the unit of measure in the description of column headings and field captions, such as <i>Structure P/S (Volts)</i> .
Company Name	Provide your company's name. It appears at the top level of the PCS Axis system hierarchy and in the header of all reports.
Metric Milepost Delimiter	Choose <i>Period</i> , <i>Comma</i> , or <i>Plus</i> in the selection list to identify the delimiter used in the formatting of metric mileposts, such as 1.234AB (Period), 1,234AB (Comma), or 1+234AB (Plus). Values before the metric delimiter indicate kilometers. Values after the metric delimiter indicate meters. For example, milepost number 1.234AB indicates 1 kilometer (km) and 234 meters (m).

#### Table 3-2. General Options

Option	Description
Survey Status Behavior	Selections for <i>Survey Status Behavior</i> effect the inspection field labeled <i>Surveyed</i> , which is a PCS Axis calculated field.
	The <i>Survey Status Behavior</i> option you select identifies which conditions must be met in order for PCS Axis to determine the facility survey status. When conditions are met, PCS Axis places a check mark in the <i>Surveyed</i> check box to indicate the facility has been inspected and a survey reading has been recorded.
	Review the following information and then choose an option in the <i>Survey Status Behavior</i> selection list:
	<i>Any</i> : The <i>Inspection</i> grid must include at least one inspection field with a survey reading before PCS Axis considers the facility has been surveyed.
	<i>All</i> : All fields related to the inspection field must be populated before PCS Axis considers the facility has been surveyed. Related fields include the <i>Activate</i> field for the inspection field in the <i>Information</i> grid; a survey reading in the inspection field of the <i>Inspection</i> grid; and <i>Yes</i> in the property setting for the field labeled <i>System-Inspection Surveyed</i> in <i>Field and UDF</i> <i>Customizations</i> .
Use Date Only	Only display the date instead of date and time for date fields such as <i>Inspection Date</i> in the <i>Inspection</i> grid and <i>Repair Found Date</i> in the <i>Maintenance</i> grid.
User Location Name	Identify the name your company uses to refer to inspection points on a pipeline. For example, type <i>Milepost, Station Number</i> , or other type of descriptor in the field <i>User Location Name</i> .

#### Table 3-2. General Options (continued)

Option	Description
Disable Link Attachments	Disable Link Attachments is a system option that applies when attaching a document to a record in a data grid (Tools > Options > General). When the option is enabled, a document can be embedded but not linked to a record. A copy of an embedded document stores in the PCS Axis database and can be accessed by all PCS Axis users. A linked document stores on the local computer of the user who linked the document and can only be accessed by that user.
	If your company prefers that users embed documents instead of linking to documents, enable the option by clicking the check box. A check mark inside the check box indicates the option is enabled. For more information, refer to <i>Attaching a Document to a Grid</i> <i>Record</i> (page 340).

Table 3-2.	General	Options	(continued)
	00110141		(

### Setting Hierarchy Options

Hierarchy options determine how PCS Axis organizes data in the system. For information about how to set up the PCS Axis system hierarchy, refer to the previous sections *Understanding the System Hierarchy* (page 33) and *Setting the System Hierarchy* (page 34).

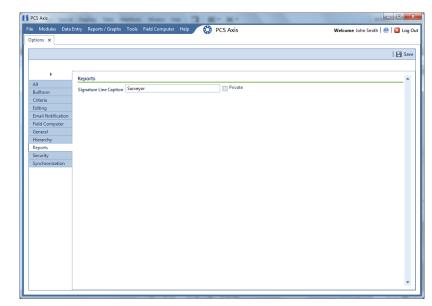
## Setting Report Options

The *Reports* options determine which signature line caption is used. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps in the *Reports* page of *Options* to set property settings:

- 1 If the *Options* window is not open, click **Tools** > **Options** to open the window.
- 2 Click the **Reports** tab to open the *Reports* option page (Figure 3-12, page 52).
- **3** If you want to change the default setting used as the caption below the signature line in a *Columnar* report (Surveyor), type a name in the field **Signature Line Caption**.

4 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 36).



5 Click **Save** to save changes.

Figure 3-12. Reports

## Setting Security Options

Security-related property settings can be configured in the *Security* page of *Options*. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps in the Security page of Options to set property settings:

- 1 If the *Options* window is not open, click **Tools** > **Options** to open the window.
- 2 Click the **Security** tab to open the *Security* options page (Figure 3-13).

PCS Axis		
e Modules Data I	Entry Reports / Graphs Tools Field Computer Help 🛛 🔅 PCS Axis	Welcome John Smith   🕹   🔀 Log
ptions ×		
		🗎 😫 Sa
+	Hierarchical Security	
All	Use Hierarchical Security Public Public	
Bullhorn	Security	
Criteria	Requires Windows Password D Public	
Editing	requires windows Password Public	
mail Notification		
ield Computer		
General		
Hierarchy		
Reports		
Security Synchronization		
synchronization		

Figure 3-13. Security Options

- **3** Review the information in Table 3-3 (page 54) and check or uncheck an option's check box or select from the drop downs as needed.
- 4 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 36).
- 5 When you finish, click 💾 Save to save changes.

Option	Description		
Use Hierarchical Security	Enable this option if you plan to set up hierarchy rights in <i>User Management</i> for users with <i>User</i> and <i>Read Only</i> security permissions.		
	Hierarchical security allows you to assign users access rights to certain hierarchy folders in the <i>Select ROWs</i> window. When a user does not have access rights to a hierarchy folder, PCS Axis does not display the folder in the <i>Select ROWs</i> window.		
Requires Windows Password	If you want users to enter their Windows password when logging in to PCS Axis, click the option <b>Requires</b> <b>Windows Password</b> . When this option is disabled, the system automatically logs in users with their Windows login credentials (user name and password combination).		

#### Table 3-3. Security Options

## Setting Synchronization Options (SysAdmins Only)

The following procedure explains how to set property settings for *Synchronization* in system *Options*. If you want to disable *Synchronization*, see *Disabling Synchronization* (*SysAdmins Only*) (page 56). A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps:

1 Click **Tools** > **Options** > **Synchronization** to open the synchronization property settings window (Figure 3-14).

			🛛 💾 Sa
•	General		
All	Default Subscription Database Name PcsAxisSubscrip	ion Public	
Bullhorn Criteria		Public	
Editing	Subscription Expiration Warning Threshold 10		
Email Notification	Synchronization User Group Name Domain Name	Jser Group Name Public	
ield Computer	Disable Synchronization	Public	
General			
lierarchy			
Reports			
Security			
Synchronization			

Figure 3-14. Synchronization

- 2 Review the following information and then set options as needed. When you finish, click **Save** to save changes.
  - **Default Subscription Database Name**: This property setting identifies the default name applied to *all* subscription databases when setting up subscribers in *Configure Subscription* (*Tools* > *Configure Subscription*). If you want to use a different default name, type a name in this field.

**NOTE:** You also have the option to use a different name than the default when setting up each subscription database. See *Configuring a Subscription* (page 783) for more information if needed.

• **Subscription Expiration Warning Threshold**: This property setting applies to all subscription databases that have not synchronized with the publication database within the publication retention period.

The warning threshold is the number of days before a subscription expires that a warning message displays indicating the subscriber must synchronize their subscription database. The default value is 10 days. To change the default setting, type a value in this field.

**IMPORTANT:** Publication retention period is also referred to as *subscription expiration period*. A subscription becomes expired (obsolete) when the subscriber does not synchronize their subscription database with the publication database within the publication retention period. An expired subscription *must* be re-initialized at the publisher (network server with publication database).

The publication retention period is set in the field *Subscription expiration* in the *General* page when using SQL Server Management Studio (SSMS). See *Confirming Share Folder Access* (page 778) for more information.

• **Synchronization User Group Name**: This property setting identifies your company's domain name and the name of the local domain user group set up for PCS Axis on the central database server. If needed, contact your company's IT System Administrator for this information. When entering the *Synchronization User Group Name*, format the information as shown in the following example:

Example: Domain Name\User Group Name

• **Disabling Synchronization**: See the section titled Disabling Synchronization.

### Disabling Synchronization (SysAdmins Only)

If your company does not plan to use *Synchronization*, you have the option to disable the feature. When disabled, the *Synchronization* menu command is not included in the *Tools* menu, which prevents creating the publication and subscription databases. You can however activate *Synchronization* at anytime if your company decides later to use the feature.

To disable Synchronization, follow these steps:

1 Click **Tools** > **Options** > **Synchronization** to open the synchronization property settings window (Figure 3-15).

2 Click the check box **Disable Synchronization** to place a check mark inside the check box. Then click **Save**.

The *Synchronization* menu command is no longer available in the *Tools* menu. If you decide later to activate *Synchronization*, clear the check mark by clicking the *Disable Synchronization* check box.

General			🖪 s
General			
Default Subscription Database Name	PcsAxisSubscription	Public	
		D-1-Fr	
Subscription Expiration Warning Threshold	10		
Synchronization User Group Name	Domain Name\User Group Name	Public	
Disable Synchronization	7	Public	
	_		
	Subscription Expiration Warning Threshold Synchronization User Group Name	Subscription Expiration Warning Threshold	Subscription Expiration Warning Threshold 10 Public Synchronization User Group Name Domain NameUser Group Name Public

Figure 3-15. Disable Synchronization

## Working with Custom Security Roles

Custom security roles are an optional feature in PCS Axis that is setup by the PCS administrator. The security feature allows you to grant or deny user access to PCS Axis menus and menu commands as well as data entry fields.

A custom security role is a named set of permissions based on your company's business requirements. You create a custom security role using a *Parent Role* as a template and then modify permissions in the custom security role as needed. Roles include permissions for menu-level items (*File, Modules, Data Entry, Report/Graphs, Tools, and Field Computer*) as well as field-level items (*Facility Surveys, Continuous Surveys, and ROW and Pipeline*).

A *Parent Role* is a PCS Axis installed security role with predefined permissions that cannot be modified. Parent roles include the *SysAdmin*, *User*, and *Read Only* security roles. After creating a custom security role based on a parent role, you can then assign it to a PCS Axis user who was set up in *User Management* (page 187).

Information in this section explains how to use *Security Role Management* to add and edit a custom security role. Topics include those in the following list:

Adding a Custom Security Role (page 59)

- Using Copy to Add a Custom Security Role (page 60)
- Editing a Custom Security Role (page 61)
- Deleting a Custom Security Role (page 64)
- Assigning a Custom Security Role to a User (page 65)

### Adding a Custom Security Role

Complete the following steps to add a custom security role:

1 Click **Tools** > **Security Role Management** to open the *Security Role Management* window (Figure 3-16).

Search					
Display Name	Access	Edit	Add	Delete	
> File > Modules	· ·				l.
> Data Entry					
> Reports / Graphs	×	8	8	8	
> Tools	4	1	1	×	
Field Computer	×	×	×	✓	

Figure 3-16. Security Role Management

**NOTE:** The 🔀 icon denotes fields that are unavailable for this role.

2 Click 🛟 Add to open the Add Security Role dialog box (Figure 3-17).

Add Security R	ole
	🛷 OK   🚳 Cancel
Parent Role Name Description	

Figure 3-17. Add Security Role

- **3** Select a *Parent Role* to use as a template to create the custom security role. Click the down arrow in the **Parent Role** field and select a PCS Axis installed security role in the selection list, such as *User* or *SysAdmin*.
- **4** Type a name for the custom security role in the **Name** field and a description in the **Description** field. Fields marked with a ⊗ icon are required.

- 5 Click OK to save changes and return to Security Role Management.
   Information about the custom security role display in the fields Parent Role, Role, and Description.
- 6 Repeat **step 2** through **step 5** as needed to add additional custom security roles. Then continue with the next section to edit permissions in a custom security role (page 61).

### Using Copy to Add a Custom Security Role

When you want to add a custom security role with permissions that are slightly different than those in an existing customer security role, use the *Copy* command to copy permissions from the existing custom security role.

To add a custom security role using the *Copy* command, follow these steps:

- If the Security Role Management window is not open, click Tools > Security Role Management (Figure 3-16, page 59).
- 2 Click **Copy** to open the *Copy Security Role* dialog box (Figure 3-18).

Copy Security	Role		×
		🛛 🛷 ок 🛛 🚳	Cancel
Parent Role	User		-
Role			-
Name	8		

#### Figure 3-18. Copy Security Role

- **3** Click the down arrow in the **Parent Role** field and select the parent role associated with the existing custom security role.
- 4 Click the down arrow in the **Role** field and select the existing custom security role with permissions you want to copy to the new custom security role.
- **5** Type a name for the new custom security role in the **Name** field. Fields marked with a  $\bigotimes$  icon are required.
- 6 Enter a description for the custom role, if desired, in the **Description** field.
- **7** Click **V OK** to save changes and return to the *Security Role Management* window.

8 Repeat step 2 through step 7 as needed to add additional custom security roles. Then continue with the next section to edit permissions in a custom security role (page 61).

### Editing a Custom Security Role

To edit permissions in a custom security role, follow these steps:

- If the Security Role Management window is not open, click Tools > Security Role Management.
- 2 Click the down arrow in the **Role** field and select a custom security role in the selection list. Then click *J* **Edit** to begin editing permissions (Figure 3-19).

**NOTE:** If the custom security role is not visible in the selection list, click the down arrow in the *Parent Role* field and select either *User* or *SysAdmin*, then select the custom security role in the *Role* field.

	ne NewUser enu Edit Fields Edit		Description	My Custom User		🛛 🛛 🖋 All 🛛 🐼 None 🛛 🔁 Save 🛛 🚳 Cancel 🛛 🖸 C
	and cont Theids cont					
	Search					
	Display Name	Access	Edit	Add	Delete	
Þ	> File					
	> Modules					
	> Data Entry	1				
	Reports / Graphs	<b>v</b>				
	> Tools	<u> </u>				
	Field Computer	1	V	1	2	

Figure 3-19. Edit Security Role - Menu Edit Tab

- 3 Click the *Menu Edit* tab (step 4) or the *Fields Edit* tab (step 7) to edit permissions.
- 4 Use the following methods to edit menu permissions for the custom security role:

**NOTE:** You can toggle permissions on and off for all items in the window. Click **All** to grant access to all items or **80 None** to deny access to all items.

**NOTE:** Use the Search box located above the *Display Name* column to quickly find a command name.

- **a** To grant access to an entire menu listed in the *Display Name* column, click the adjacent check box to place a check mark inside the check box **v**.
- **b** To deny access to an entire menu listed in the *Display Name* column, click the adjacent check box to remove the check mark inside the check box **[**].
- **c** To grant or deny access to sub-menu commands, click the arrow next to the main menu name to expand the list (Figure 3-20).

curity Role Management 🗙					
ame NewUser		Description My	Custom User		🗹 All   🔀 None   💾 Save   🚳 Cancel   🔀 C
Menu Edit Fields Edit					
Search					
Display Name	Access	Edit	Add	Delete	
<ul> <li>File</li> </ul>	Heccas	Cont	100	beitte	
Select ROWs		7	7	7	
Database Integrity Che					
v Modules					
Cathodic Protection Di	<b>v</b>				
Indirect Survey Manag					
Valve Manager (VM)	7				
Atmospheric Corrosion	1				
Internal Corrosion Mar	7				
Leak Survey Manager (	1				
NAT Park and Survey N	V				
Custom Module Mana					
> Data Entry	7				
Reports / Graphs	V				
> Tools				2	
> Field Computer	1	7	7	V	

Figure 3-20. Expanded Menu Commands

**NOTE:** The columns can be expanded by hovering over the dividing line until the cursor changes to  $\iff$  and then clicking and dragging the cursor.

- **d** To grant access to a sub-menu listed in the *Display Name* column, click the adjacent check box to place a check mark inside the check box **v**.
- e To deny access to a sub-menu listed in the *Display Name* column, click the adjacent check box to remove the check mark inside the check box .
- **f** Repeat **step 4** as needed for each menu and sub-menu command listed in the *Display Name* column.
- 5 Click 💾 Save to save changes.
- 6 Click the *Fields Edit* tab to edit permissions for fields (Figure 3-21).

e Modules Data Entry	Reports / Graphs	Tools Field Computer Hel	PCS Axis	Welcome John Smith
ecurity Role Management	×			
arent Role User	* Role	(D 1)	Pescription: Installed Role	🖉 Edit 📉 Delete 🚺 Add 🗍 🗘
		respose	· Description. Installed Kole	S curl M perce A van Dr.
Summary Fields Summ	lary			
Search				
Display Name	Edit			
Facility Surveys     Continuous Survey				
> Continuous Survey > ROW and Pipeline	rs -			
, non and ripeline				

Figure 3-21. Edit Security Role - Fields Edit Tab

7 Use the following methods to edit field permissions for the custom security role:

**NOTE:** You can toggle permissions on and off for all items in the window. Click **All** to grant access to all items or **Solution** None to deny access to all items.

**NOTE:** Use the Search box located above the *Display Name* column to quickly find a field name.

- **a** To grant access to an entire category listed in the *Display Name* column, click the adjacent check box to place a check mark inside the check box **v**.
- **b** To deny access to an entire category listed in the *Display Name* column, click the adjacent check box to remove the check mark inside the check box .
- **c** To grant or deny access to sub-category fields, click the arrow next to the main category name to expand the list (Figure 3-22).

Modules Data Entry Reports / Graphs Tools ity Role Management ×	Field Computer Help 🔅 PCS Axis	Welcome John Smith   🥹   🛂
e NewUser	Description My Custom User	🖋 All   😢 None   💾 Save   🍪 Cancel   🔀
nu Edit Fields Edit		
Search		
Display Name	Access	
Facility Surveys	Acces	
Common to All Facilities		
<ul> <li>Common to All Pacifices</li> <li>ROW and Pipeline</li> </ul>		
Creation Date		
FacilityKey		
Milepost		
Primary Link		
Relative Milepost		
> Permanent Information		
<ul> <li>Information</li> </ul>		
Account		
Alignment Sheet Number		
Effective Date		
Facility Active		
Facility Population Classification		
Installation Date		
Manufacturer		
Model		
Permanent Comments		
Schedule Settings		
Serial Number		
> Inspection		
Maintenance		
Sub Facility		
> CPDM > VM		

Figure 3-22. Expanded Fields

**NOTE:** The columns can be expanded by hovering over the dividing line until the cursor changes to  $\iff$  and then clicking and dragging the cursor.

- **d** To grant access to a sub-category field listed in the *Display Name* column, click the adjacent check box to place a check mark inside the check box **v**.
- e To deny access to a sub-category field listed in the *Display Name* column, click the adjacent check box to remove the check mark inside the check box .
- **f** Repeat **step 7** as needed for each category and sub-category field listed in the *Display Name* column.
- 8 Click 💾 Save to save changes.

To assign a custom security role to a user previously set up in *User Management*, see *Assigning a Custom Security Role to a User* (page 65).

#### Deleting a Custom Security Role

To delete a custom security role, follow these steps:

 If the Security Role Management window is not open, click Tools > Security Role Management (Figure 3-16, page 59).

- 2 Click the down arrow in the **Parent Role** field and select the parent role associated with the custom security role you want to delete.
- **3** Click the down arrow in the **Role** field and select the custom security role you want to delete.
- 4 Click ➤ Delete. When the Confirm Delete message displays, click ✓ Yes to delete the custom security role and set users tied to this role to the PCS Axis installed role or ☑ No to cancel the operation (Figure 3-23).

Confirm Delete	×	
Are your sure you want to delete My Custom Use	er_4 Security Role?	
	Yes 🛛 🔀 No	

Figure 3-23. Confirm Delete

### Assigning a Custom Security Role to a User

The following information explains how to assign a custom security role to a user set up in *User Management*. For more information about *User Management*, see *Setting Up User Management* (page 187).

Complete the following steps:

1 Click **Tools** > **User Management** to open the *User Management* window (Figure 3-24).

🗄 Save 🛛 🛞 Cancel 🛛									🛛 🗘 🗛
	<b></b>	Active	User Name	Role	Last Name	First Name	M.L	Email	Domain
Active omain User Name		Yes	Bob.White		White	Bob		bob.white@mypipeline.com	MYPIPELIN
AYPIPELI Y Craig.Brown		Yes	Craig.Brown		Brown	Craig		craig.brown@mypipeline.com	MYPIPELIN
mail		Yes	Joe.Black		Black	Joe		joe.black@mypipeline.com	MYPIPELIN
raig.brown@mypipeline.com		Yes	John.Smith		Smith	John		john.smith@mypipeline.com	MYPIPELIN
	ights								
	Hierarchy Rights								
Parent Role Role	Hierarchy Rights								
arent Role Role	Hierarchy Rights								
arent Role Role User My User_3 Cust [Pcs]User [Can Create Nev My User_1 Custo	m Securit								
User My User_3 Cust	m Securit m Securit	y Role							

Figure 3-24. User Management

**NOTE:** If the *Hierarchy Rights* panel is open, click the title bar to collapse it.

- 2 Select a user record in the grid.
- **3** Complete the following steps in the *Role* group box on the left side of the window (Figure 3-25):

🗘 Add   🗎	Save 🕲	Cancel			_		
Active				1			Activ
Domain		User Name				•	Yes
AMERINNOV	ATIONS	* john					Yes
Email							Tes .
john@aiworl	dwide.com						
First Name							
John							
Last Name			M.L				
Smith							
Display Name							
John Smith							
					Hierarchy Rights		
Role					Hierarc		
Parent Role		Role					
SysAdmin		<ul> <li>[Pcs]SysAdmi</li> </ul>	n *				
Can Create	New Facilitie	es On The Allegro					

Figure 3-25. Role List

- **a** Click the **Parent Role** field and select the parent role associated with the custom security role you want to assign to the user record.
- **b** Click the **Role** field and select the custom security role you want to assign to the user record.
- 4 Click **Save** to save changes

# Setting Properties in Field and UDF Customizations

Use *Field and UDF Customizations* to modify property settings for certain PCS Axis installed fields and add one or more user-defined fields (UDFs) when PCS Axis does not provide a field for data entry.

Information in this section explains how to use the most common features of *Field and UDF Customizations*. Topics include those in the following list:

- Navigating Field and UDF Customizations
- Editing a PCS Axis Installed Layout Theme (page 68)
- Adding a Layout Theme Addition (page 71)
- Renaming Field Captions on page 73
- Setting Up Range Checking for Inspection Fields on page 76
- Adding User Defined Fields on page 78

### Navigating Field and UDF Customizations

The selection tree in the *Properties* panel of *Field and UDF Customizations* includes three main categories labeled *Facility Surveys*, *Continuous Surveys*, and *ROW and Pipeline*. Each of these categories includes related items for selection. For example, items for selection in *Facility Surveys* are based on module and data grid. Items for selection in *Continuous Surveys* are based on data grid and the various continuous survey types.

Selecting an item in the selection tree displays a list of related fields and property settings in the adjacent grid. The grid layout includes columns, rows and cells similar to a spreadsheet. Grid columns at top of the grid identify the names of the various properties you can set up for a field. Each grid row contains property settings for a specific field, such as *Casing Status* shown in the following figure (Figure 3-26, page 68). When a property setting is shaded gray or includes the label *N/A* (not applicable), this indicates the setting cannot be modified.

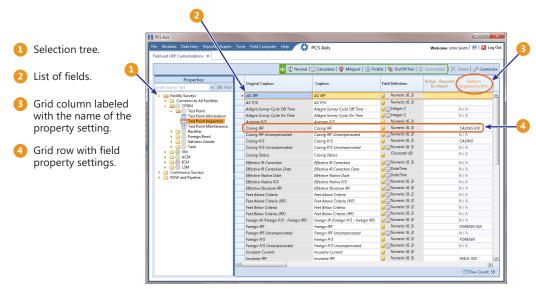


Figure 3-26. Field and UDF Customizations

# Editing a PCS Axis Installed Layout Theme

A layout theme is a named set of fields that are present in the grid when working in *Field and UDF Customizations*. Two types of layout themes are available for use. They include *installed* and *addition* layout themes. An installed layout theme is one that has been installed during the PCS Axis software installation, such as *[PCS] All Fields*. A layout theme addition is one that you create.

The procedure in this section explains how to complete the following tasks to edit a PCS Axis installed layout theme:

- add and remove fields in an installed layout theme
- revert an installed layout theme
- save changes as a new baseline installed layout theme

To edit a PCS Axis installed layout theme, follow these steps:

1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-27).

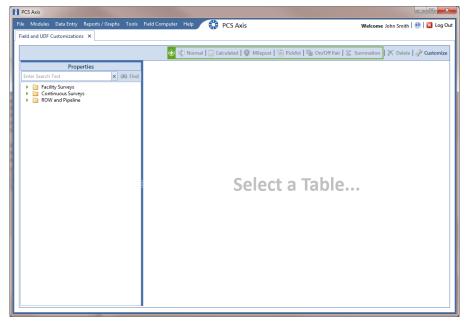


Figure 3-27. Field and UDF Customizations

- 2 Click *Customize* to open the *Column Selections* dialog box (Figure 3-28).
- 3 Click the down arrow in **Select Layout Theme** and select a theme in the selection list, such as **(PCS) All Fields**.

**NOTE:** By default all fields are included in the **()** *[PCS] All Fields* layout theme. If you want to clear all fields listed in the right pane and subsequently remove them from the layout theme, click **Toggle Select**. Clicking the button again moves all fields to the right pane and adds them in the layout theme.

- **4** To remove one or more fields in the layout theme, complete one of the following steps (Figure 3-28, page 70):
  - a Select a field in the right pane and then click the bottom arrow button ( to move the field to the left pane.
  - **b** Double-click a field in the right pane to move it to the left pane.

**NOTE:** The grid layout theme includes all fields listed in the right pane of the *Column Selections* dialog box.

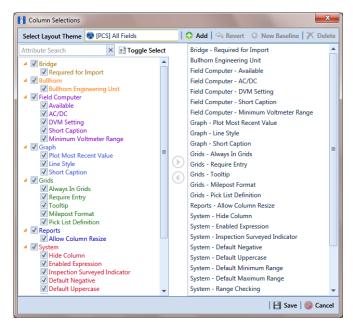


Figure 3-28. Column Selections

- 5 Click 💾 Save to save changes.
- 6 To revert an installed theme and restore settings prior to editing:
- 7 To save current changes as new baseline settings, click **Wew Baseline**.
   When future changes are made and then reverted, PCS Axis restores the theme with baseline settings.

# Adding a Layout Theme Addition

Information in this section describes how to add a new grid layout theme in *Field and Customizations*. Adding a layout theme allows you to choose which fields to include in the grid and then save the new layout as a theme for later use.

To add a grid layout theme, follow these steps:

1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29).

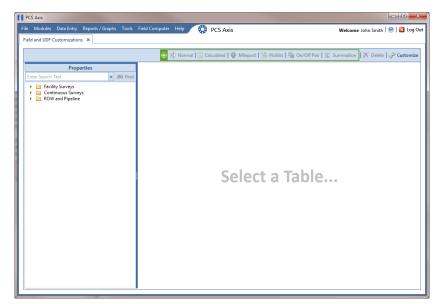


Figure 3-29. Field and UDF Customizations

2 Click *Customize* to open the *Column Selections* dialog box (Figure 3-30).

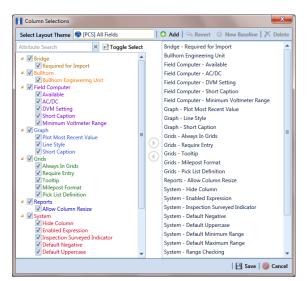


Figure 3-30. Column Selections

3 Click G Add to open the New Layout Theme dialog box (Figure 3-31).

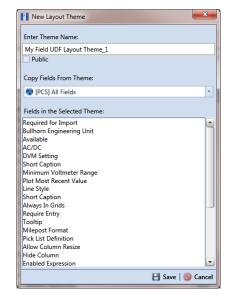


Figure 3-31. New Layout Theme

**4** Type a name for the layout theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it. Also, only public themes will be available for selection for layouts, sorts, or reports.

- 5 Select a layout theme with fields you want to copy to the new layout theme. Click the down arrow in Copy Fields From Theme and select a theme in the selection list.
- 6 Click 💾 Save to save changes and return to the Column Selections dialog box.
- 7 If you want to clear all fields listed in the right pane of the dialog box and subsequently remove them from the grid, click **Toggle Select**. Clicking the button again moves all fields to the right pane and adds them in the grid.
- 8 Choose which fields to include in the layout theme. Select a field in the left pane and then click the top arrow button () to move the field to the right pane. Repeat this step as needed (Figure 3-32, page 73).
- **9** If you want to remove a field in the layout theme, select a field in the right pane and then click the bottom arrow button ( to move the field to the left pane.

**NOTE:** The grid layout theme includes all fields listed in the right pane of the *Column Selections* dialog box.

**10** Click **Save** to save changes and return to the *Field and UDF Customizations* grid.

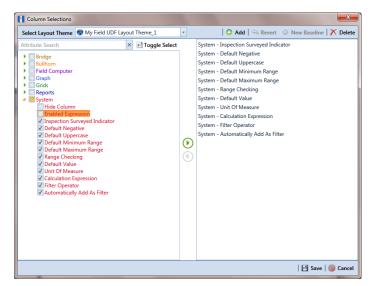


Figure 3-32. Column Selections

#### **Renaming Field Captions**

You can rename many of the original PCS Axis field captions with a caption that is more familiar to users in your company. The following procedure explains how to rename field captions. The information is intended for users with *SysAdmin* user permissions.

Complete the following steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - a Click *Customize* to open the *Column Selections* dialog box (Figure 3-32, page 73).
  - **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
  - **c** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

**3** Select an item in the *Properties* panel to display related fields and property settings in the grid.

For example, double-click **Facility Surveys** > **Common to All Facilities** > **ROW and Pipeline**. The grid displays related fields and property settings for *ROW and Pipeline* (Figure 3-33).

**NOTE:** Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

	🕀 🗿 No	rmal   🗔 Calculated   🧿 Mile	oost   🗃 Picklist   囁 On/Off F	air 💈 Summation 🛛 🗙	Delete
Properties	Original Caption	Caption	Field Definition	System - Inspection Surveyed Indicator	System - Default Negative
Enter Search Text 🗙 👀 Find	Bridge ID	Bridge ID	uniqueidentifier	N/A	N/A
<ul> <li>Facility Surveys</li> </ul>	Creation Date	Creation Date	DateTime	N/A	N/A
<ul> <li>Common to All Facilities</li> <li>ROW and Pipeline</li> </ul>	Milepost	Milepost	Character (15)	N/A	N/A
Permanent Information	Primary Link	Primary Link	Logical	N/A	N/A
Information	Relative Milepost	Relative Milepost	Character (15)	N/A	N/A
Inspection Inspection	ROW Code and Pipe	ROW Code and Pipe	uniqueidentifier	N/A	N/A
Maintenance Sub Facility	Series	Series	uniqueidentifier	N/A	N/A
	8				

Figure 3-33. Field and UDF Customizations

- **4** To rename an original field caption listed in the *Original Caption* grid column:
  - Type a name in the adjacent field listed in the *Caption* grid column.

For example, to rename *Milepost*, type a new description in the adjacent field, such as *Station*. Bold text indicates a user-modified field as shown in Figure 3-34, page 75.

e Modules Data Entry Reports / Graphs To	ols Field Computer Help	PCS Axis		Wele	come John Smith	📵   🔀 Log
ield and UDF Customizations ×						
	🕀 🗿 Normal	🔟 Calculated   👰 Milep	oost   🗃 Picklist   🏪 On/	/Off Pair   🖉 Summa	ition 🛛 🗙 Delete	🥜 Customi
Properties	Original Caption	Caption	Field Definition	Bridge - Required for Import	Bullhorn Engineering Unit	Field Comp Availat
Facility Surveys	Bridge ID	Bridge ID	🧧 uniqueidentifier		N/A	
Common to All Facilities	Creation Date	Creation Date	DateTime		N/A	
ROW and Pipeline Permanent Information	Primary Link	Primary Link	Logical		N/A	
Information	Relative Milepost	Relative Milepost	📔 🔚 Character (15)		N/A	
Inspection	ROW Code and Pipe	ROW Code and Pipe	uniqueidentifier		N/A	
Maintenance Sub Facility	Series	Series	🧉 uniqueidentifier		N/A	
CPDM	Milepost	Station	Character (15)		N/A	
Continuous Surveys     ROW and Pipeline						
Description     Descripti     Descripti     Description     Description     Description						
Continuous Surveys						
LSM     Continuous Surveys						
LSM     Continuous Surveys						
Description     Descripti     Descripti     Description     Description     Description						
LSM     Continuous Surveys						
LSM     Continuous Surveys	٩					k Row Count 7

Figure 3-34. Field and UDF Customizations

### Returning a Field Caption to its Original Name

To return a field caption to its original name, follow these steps:

- 1 If the *Field and UDF Customizations* window is not open, click **Tools** > **Field and UDF Customizations** (Figure 3-29, page 71).
- **2** Select an item in the Properties panel with the field caption you want to return to its original name.
- **3** Highlight the name in the *Caption* field and then press the **Delete** key on the computer keyboard.

**NOTE:** If the cursor is still in the *Caption* field after typing a a new name, you can also press **Ctrl+Z** to undo changes and display the original field caption.

#### Setting Up Range Checking for Inspection Fields

Range checking is the acceptable range of values allowed for data entry in an inspection field.

Setting up range checking allows PCS Axis to alert the user when an incorrect value has been entered in an inspection field. For example, if the acceptable range of values is in a range of -10 to 0 and the user enters a value that is outside this range, a warning message displays allowing the user to correct the invalid entry. Data entry errors are less likely to occur when inspection fields are set up with range checking.

Settings apply system-wide when range checking is set up for an inspection field in *Field and UDF Customizations*. You can also set up range checking at the facility level using the minimum/maximum fields available in the *Information* and *Inspections* data entry grid. Range checking at the facility level overrides range checking at the system level.

Complete the following steps to set up range checking for an inspection field:

- Click Tools > Field and UDF Customizations to open the Field and UDF Customizations window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - a Click *Customize* to open the *Column Selections* dialog box (Figure 3-32, page 73).
  - **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
  - **c** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- **3** Select an item in the *Properties* panel that includes the inspection field you want to set up for range checking.

For example, double-click **Facility Surveys** > **CPDM** > **Test Point** > **Test Point Inspection**. The grid displays related fields and property settings for the *Test Point Inspection* data entry grid (Figure 3-35, page 77).

**4** Select the inspection field you want to set up for range checking. For example, select *Casing P/S* as shown in the following figure (Figure 3-35, page 77).

Modules Data Entry Reports / Graphs	Tools Field Computer Help	😯 PCS Axis			Welcome John Smit	:h   🕑   🔀 Lo
	_					
	🕀 🕸 Nor	mal   证 Calculated   👰 Mile	post   🛅 Picklist   🐴	🛛 On/Off Pair 🛛 🖉 Su	immation 🛛 📉 Dele	te   🥜 Custon
Properties	Original Caption	Caption	Field Definition	System - Default Minimum Range	System - Default Maximum Range	System - Range Checking
Enter Search Text X 00 Find	AC IRF	AC IRF	Numeric (6, 3)	0.000	25.000	les .
<ul> <li>Eacility Surveys</li> </ul>	AC P/S	AC P/S	🧧 Numeric (6, 3)	0.000	25.000 \	/es
Common to All Facilities	Allegro Survey Cycle Off Time	Allegro Survey Cycle Off Ti	🔒 🔚 Integer ()	N/A	N/A /	Vo
A De Test Point	Allegro Survey Cycle On Time	Allegro Survey Cycle On Time	🔒 🛄 Integer ()	N/A	N/A /	Vo
Test Point Information	Average P/S	Average P/S	Numeric (6, 3)	-10.000	0.000 1	/es
Test Point Inspection	Casing IRF	Casing IRF	🧧 Numeric (6, 3)	-10.000	0.000 1	/es
Test Point Maintenance	Casing IRF Uncompensated	Casing IRF Uncompensated	🤒 📆 Numeric (6, 3)	N/A	N/A /	Vo
Foreign Bond	Casing P/S	Casing P/S	🥘 Numeric (6, 3)	-10.000	0.000	(es
Galvanic Anode	Casing P/S Uncompensated	Casing P/S Uncompensated	🧧 🔚 Numeric (6, 3)	N/A	N/A /	Vo
Tank	Casing Status	Casing Status	Character (6)	N/A	N/A	N/A
VM ACM	Effective IR Correction	Effective IR Correction	🤒 📆 Numeric (6, 3)	N/A	N/A /	Vo
ICM	Effective IR Correction Date	Effective IR Correction Date	DateTime	N/A	N/A	N/A
🕨 🧰 🔘 LSM	Effective Native Date	Effective Native Date	📔 🔚 DateTime	N/A	N/A	N/A
Continuous Surveys     ROW and Pipeline	Effective Native P/S	Effective Native P/S	🧧 📆 Numeric (6, 3)	N/A	N/A /	Vo
KOW and Pipeline	Effective Structure IRF	Effective Structure IRF	🧧 📊 Numeric (6, 3)	N/A	N/A /	Vo
	Feet Above Criteria	Feet Above Criteria	🧧 📊 Numeric (9, 2)	N/A	N/A /	Vo
	Feet Above Criteria (IRF)	Feet Above Criteria (IRF)	🔒 📊 Numeric (9, 2)	N/A	N/A /	Vo
	Feet Below Criteria	Feet Below Criteria	🔒 📊 Numeric (9, 2)	N/A	N/A /	Vo
	Feet Below Criteria (IRF)	Feet Below Criteria (IRF)	🔒 📊 Numeric (9, 2)	N/A	N/A /	No
	Foreign IR (Foreign P/S - For	Foreign IR (Foreign P/S - Fo	🧧 📊 Numeric (6, 3)	N/A	N/A /	Vo
	Foreign IRF	Foreign IRF	Numeric (6, 3)	-10.000	0.000 1	/es
	Foreign IRF Uncompensated	Foreign IRF Uncompensated	🔒 📺 Numeric (6, 3)	N/A	N/A /	Vo
	Foreign P/S	Foreign P/S	Numeric (6, 3)	-10.000	0.000 1	/es
	Foreign P/S Uncompensated	Foreign P/S Uncompensated	🧧 📆 Numeric (6, 3)	N/A	N/A /	Vo
	Insulator Current	Insulator Current	Numeric (6, 3)	-50.000	50.000 1	les
	Insulator IRF	Insulator IRE	Numeric (6. 3)	-10.000	0.000	les

Figure 3-35. Field and UDF Customizations

- **5** Locate the grid columns labeled *System–Default Minimum Range* and *System–Default Maximum Range*.
- 6 Type a minimum range value in the field labeled **System–Default Minimum Range** for the selected inspection field.
- **7** Type a maximum range in the field labeled **System–Default Maximum Range** field for the selected inspection field.
- 8 If you want to set up another inspection field with range checking, repeat step
  3 through step 7. When you finish, click the x close icon to close the *Field and* UDF Customizations window.

### Adding User Defined Fields

A user defined field (UDF) is a field you create when PCS Axis does not provide a field for data entry. The types of UDFs available for use include those in the following list:

- *Normal:* Set up a normal UDF when you want to add any of the following types of fields: character, numeric, date, logical, memo, or date/time field.
- *Calculated:* Set up a calculated UDF when you want PCS Axis to perform calculations based on expressions you set up for the UDF.
- *Milepost:* Set up a milepost UDF when you want to assign a different milepost format to one or more facility types on a pipeline.
- *Standard Picklist:* Set up a *Standard Picklist* UDF when you want to limit data entry to a list of valid choices in a selection list. (A *Standard Picklist* in PCS Axis is similar to a validation table in PCS 7.)
- *Dynamic Picklist*: Set up a *Dynamic Picklist* with a drop-down list of data items that change based on a data item selected in another picklist. This type of picklist uses a cascading parent/child relationship allowing you to set up more than five (5) levels of interdependent picklists.
- On/Off Pair: Set up a custom pair of on/off fields when PCS Axis does not provide a pair of installed on/off fields for recording inspection readings in a data grid or form. This UDF is available for both facility and continuous surveys.
- Summation: Set up a Summation UDF when you want PCS Axis to perform an aggregation for a selected Information, Inspection, or Maintenance field. This UDF type supports aggregation on a user-selected target field using any one of the following operators: Average, Count, Latest, Maximum, Minimum, and Sum. You can also include one or more user-defined filters in the set up of the UDF to further filter the results of aggregated data. Summation UDF is a Permanent Information field available for use in data grids, forms, reports, and as a filter in scheduling.

Topics in this section include those in the following list:

- Adding a Normal User Defined Field (page 79)
- Adding a Calculated User Defined Field (page 82)
- Adding a Milepost User Defined Field (page 84)
- Adding a Standard Picklist User Defined Field (page 86)
- Setting Up a Data Entry Field as a Standard Picklist (page 90)
- Adding a Dynamic Picklist User Defined Field (page 96)
- Editing a Picklist (Standard or Dynamic) (page 106)
- Adding an On/Off Pair User Defined Field (page 108)
- Working with a Summation User Defined Field (page 112)

# Adding a Normal User Defined Field

To add a *Normal* user defined field (UDF), follow these steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - a Click **Customize** to open the Column Selections dialog box (Figure 3-32, page 73).
  - **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
  - c Click Save to close the dialog box and return to the *Field and UDF Customizations* window.
- Select an item in the *Properties* panel that includes the data entry grid you want to add a UDF. For example, double-click Facility Surveys > CPDM > Test Point > Test Point Inspection to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid (Figure 3-36).

Modules Data Entry Reports / Graphs Tools	i Field	Computer Help 🔅 PCS	Axis		Welcome John	Smith   🕑   🔀
		🕀 👰 Normal   词 Calcul	ated   👰 Milepost   🛅 Picklist	🏪 On/Off Pair   ፳	Summation	Delete   🥜 Cust
Properties	1	Original Caption	Caption	Field Definition	Bridge - Required for Import	Bullhorn Engineering Un
Facility Surveys	•	AC IRF	AC IRF	🧧 Numeric (6, 3)		
Common to All Facilities		AC P/S	AC P/S	Numeric (6, 3)		
<ul> <li>CPDM</li> <li< td=""><td></td><td>Allegro Survey Cycle Off Time</td><td>Allegro Survey Cycle Off Time</td><td>🔒 🥅 Integer ()</td><td></td><td>N/A</td></li<></ul>		Allegro Survey Cycle Off Time	Allegro Survey Cycle Off Time	🔒 🥅 Integer ()		N/A
Test Point Information		Allegro Survey Cycle On Time	Allegro Survey Cycle On Time	Integer ()		N/A
Test Point Inspection		Average P/S	Average P/S	Numeric (6, 3)		
Test Point Maintenance		Casing IRF	Casing IRF	Numeric (6, 3)		CASING IOX
Gectifier     Gectifier     Foreign Bond		Casing IRF Uncompensated	Casing IRF Uncompensated	🔒 🔚 Numeric (6, 3)		N/A
Galvanic Anode		Casing P/S	Casing P/S	Numeric (6, 3)		CASING
🕨 🦲 🔵 Tank		Casing P/S Uncompensated	Casing P/S Uncompensated	Numeric (6, 3)		N/A
<ul> <li>Image: WM</li> <li>Image: ACM</li> </ul>		Casing Status	Casing Status	Gharacter (6)		N / A
ICM		Effective IR Correction	Effective IR Correction	🥃 🔚 Numeric (6, 3)		N/A
Continuous Surveys		Effective IR Correction Date	Effective IR Correction Date	😑 🔚 DateTime		N/A
ROW and Pipeline		Effective Native Date	Effective Native Date	😑 🛄 DateTime		N/A
_		Effective Native P/S	Effective Native P/S	🧧 📺 Numeric (6, 3)		N/A
		Effective Structure IRF	Effective Structure IRF	🥃 📆 Numeric (6, 3)		N/A
		Feet Above Criteria	Feet Above Criteria	🧧 🔟 Numeric (9, 2)		N/A
		Feet Above Criteria (IRF)	Feet Above Criteria (IRF)	🧧 📺 Numeric (9, 2)		N/A
		Feet Below Criteria	Feet Below Criteria	🧧 📆 Numeric (9, 2)		N/A
		Feet Below Criteria (IRF)	Feet Below Criteria (IRF)	🧧 📺 Numeric (9, 2)		N/A
		Foreign IR (Foreign P/S - Foreign I	Foreign IR (Foreign P/S - Forei	🧧 📺 Numeric (6, 3)		N/A
		Foreign IRF	Foreign IRF	🧧 Numeric (6, 3)		FOREIGN IOX
		Foreign IRF Uncompensated	Foreign IRF Uncompensated	🧧 🔟 Numeric (6, 3)		N/A
		Foreign P/S	Foreign P/S	Numeric (6, 3)		FOREIGN
		Foreign P/S Uncompensated	Foreign P/S Uncompensated	🥃 📆 Numeric (6, 3)		N/A
		Laurente Comment	11-4 C4	Alumenic (6.2)		

Figure 3-36. Field and UDF Customizations

- 4 Click Normal in the toolbar to open the *Add Normal Field* dialog box (Figure 3-37).
- **5** Type a unique name for the UDF in the **Caption** field.

Add Normal Field				x
Caption				
Data Type		Width	Decima	ls
Character	•	20 🗘	(	) ‡
Options Range Checking Minimum				
0				
Maximum				
0				
		🛛 🗄 Save	🚫 Car	ncel

Figure 3-37. Add Normal Field

- **6** Choose the type of field you want to add. Click the down arrow in the **Data Type** field and select one of the following options:
  - *Character*: Supports characters such as A, B, and C. This data type can be used for both character and numeric data. If you plan to use mixed data, such as a number and a character or dash, define the data type as a character. If you plan to create a picklist for the UDF, use the *Character* data type. For more information about picklists, see *Adding a Standard Picklist User Defined Field* (page 86).
  - *Numeric*: Supports values such as 1, 2, and 3 and numeric values using the following format: 999.999 and –99.999.
  - *Date*: Supports a date format using MM/DD/YYYY (month, day, year), such as 11/12/2012.
  - *Logical*: Supports a yes/no selection in the form of a check box to enable or disable an option in the data entry grid.
  - *Memo*: Supports more than 255 characters and carriage returns.
  - *DateTime*: Supports a date and time format using HH:MM:SS (hours, minutes, seconds) and MM/DD/YYYY (month, day, year). Such as 11:15:45, 12/ 11/2012.
  - *Integer*: Supports a positive or negative whole number, or zero. Such as -2, 4, 123, and 3,245.
- 7 If you selected the *Character* or *Numeric* data type earlier, set the length of the field by typing the number of characters required for the UDF in the **Width** field.

Clicking the up arrow in the *Width* field increases the value; clicking the down arrow decreases the value.

- **8** If you selected the *Numeric* data type earlier, set the number of decimal places required for the UDF by typing a value in the **Decimals** field.
- **9** If you selected the *Numeric* data type earlier and want to set up range checking for the UDF, click the **Range Checking** option and then type a minimum and maximum value in the respective fields.

**NOTE:** Range checking is the acceptable range of values allowed for data entry in a field. Setting up range checking allows PCS Axis to alert the user when an incorrect value has been entered.

**10** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

The UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data entry grid.

#### Adding a Calculated User Defined Field

The procedure in this section includes an example that describes how to define an expression for a user defined field (UDF) labeled *Shorted P/S*. In the example, if *Casing P/S* is below protection criteria (less than or more negative than -0.8495), PCS Axis enables *Shorted P/S* for data entry in the grid. The field is not enabled for data entry when *Casing P/S* meets protection criteria.

**NOTE:** An expression is a logical statement with specific conditions that must be met before PCS Axis enables the field for data entry. Logical statements are either "true" or "false" based on the conditions defined in the expression for the UDF.

To add a *Calculated* UDF, follow these steps:

- Click Tools > Field and UDF Customizations to open the Field and UDF Customizations window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - Click *Customize* to open the *Column Selections* dialog box (Figure 3-32, page 73).
  - **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
  - **c** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Select an item in the *Properties* panel that includes the data entry grid you want to add a UDF. For example, double-click Facility Surveys > CPDM > Test Point > Test Point Inspection to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid (Figure 3-38).

ld and UDF Customizations 🗙	; Field Computer Help 🛛 🔅 PCS				Smith   🔨   🔀 L
	🕕 🌗 Normal   🗐 Calcula	ated   👰 Milepost   🛅 Picklist	🏪 On/Off Pair   🖉	Summation	Delete   🥜 Custo
Properties nter Search Text × 👀 Fin	d Original Caption	Caption	Field Definition	Bridge - Required for Import	Bullhorn Engineering Unit
Facility Surveys	► AC IRF	AC IRF	🧉 Numeric (6, 3)		
Common to All Facilities	AC P/S	AC P/S	Numeric (6, 3)		
CPDM     CPDM     CPDM     CPDM     CPDM	Allegro Survey Cycle Off Time	Allegro Survey Cycle Off Time	Integer ()		N/A
Test Point Information	Allegro Survey Cycle On Time	Allegro Survey Cycle On Time	📔 🗐 Integer ()		N/A
Test Point Inspection	Average P/S	Average P/S	Numeric (6, 3)		
Test Point Maintenance	Casing IRF	Casing IRF	Numeric (6, 3)		CASING IOX
Contractifier     Contrac	Casing IRF Uncompensated	Casing IRF Uncompensated	🗧 🔚 Numeric (6, 3)		N/A
Galvanic Anode	Casing P/S	Casing P/S	Numeric (6, 3)		CASING
🕨 🫅 🦲 Tank	Casing P/S Uncompensated	Casing P/S Uncompensated	🧧 🔚 Numeric (6, 3)		N/A
	Casing Status	Casing Status	Character (6)		N / A
ICM	Effective IR Correction	Effective IR Correction	🥘 📆 Numeric (6, 3)		N/A
Continuous Surveys	Effective IR Correction Date	Effective IR Correction Date	📔 📊 DateTime		N/A
Continuous surveys     ROW and Pipeline	Effective Native Date	Effective Native Date	📔 🔚 DateTime		N/A
	Effective Native P/S	Effective Native P/S	📔 🔚 Numeric (6, 3)		N/A
	Effective Structure IRF	Effective Structure IRF	📔 📊 Numeric (6, 3)		N/A
	Feet Above Criteria	Feet Above Criteria	间 🔚 Numeric (9, 2)		N/A
	Feet Above Criteria (IRF)	Feet Above Criteria (IRF)	📔 📊 Numeric (9, 2)		N/A
	Feet Below Criteria	Feet Below Criteria	🧧 📊 Numeric (9, 2)		N/A
	Feet Below Criteria (IRF)	Feet Below Criteria (IRF)	📔 📊 Numeric (9, 2)		N/A
	Foreign IR (Foreign P/S - Foreign I	Foreign IR (Foreign P/S - Forei	📔 📊 Numeric (6, 3)		N/A
	Foreign IRF	Foreign IRF	🧧 Numeric (6, 3)		FOREIGN IOX
	Foreign IRF Uncompensated	Foreign IRF Uncompensated	📔 🛄 Numeric (6, 3)		N/A
	Foreign P/S	Foreign P/S	Numeric (6, 3)		FOREIGN
	Foreign P/S Uncompensated	Foreign P/S Uncompensated	间 📆 Numeric (6, 3)		N/A
	4	Incolation Community	Mumeric (6.2)		

Figure 3-38. Field and UDF Customizations

4 Click Calculated in the toolbar to open the *Add Calculated Expression* dialog box. If you want to work with the expression editor in advanced mode, click Switch To Advanced Mode (Figure 3-39).

Caption		Data Type		Width	Decimals	
Shorted P/S		Numeric	*	5	\$	4 🗘
Expression						
[Casing P/S (Volts)]<-0.8495						×
Search For Field	×	Operators				
All Fields	A	+	· · ·	1	*	
ROW Permanent Information Fields						
Test Point Facility Fields		%	=	>	<	
Test Point Information Fields     Test Point Inspection Fields	E					
AC P/S (Volts)		>=	<=	<>		
Average P/S (Volts)						
Casing IRF (Volts)		AND	OR	LIKE	NOT	
Casing P/S (Volts) Casing Status						
Compliance		Logical Function	ons			
Effective IR Correction (Volts)		IIF	ICASE	ISNULL	BETWEEN	
Effective IR Correction Date						
Effective Native P/S (Volts) (Volts)		Mathematical	Functions			
Effective Structure IRF		CEILING	FLOOR	ABS	POWER	
Feet Above Criteria						
Feet Below Criteria		ROUND	MIN	MAX		
Feet Below Criteria (IRF)						
Foreian IR (Foreian P/S - Foreian IRF) (Volts)	٣	String Function	ns			
				🌀 Swite	ch To Simple M	lode
					Save   🔞 Ci	

Figure 3-39. Add Calculated Expression (Advanced Mode)

- 5 Type a unique name for the UDF in the Caption field. Then click the down arrow in the Data Type field and select a data type in the selection list, such as *Numeric*.
- 6 If you selected the *Character* or *Numeric* data type earlier, set the length of the field by typing the number of characters required for the UDF in the **Width** field. Clicking the up arrow in the *Width* field increases the value; clicking the down arrow decreases the value.
- 7 If you selected the *Numeric* data type earlier, set the number of decimal places required for the UDF by typing a value in the **Decimals** field.
- 8 Click a toggle button b to open a field category, such as *Test Point Inspection Fields* shown in Figure 3-38, page 83. Double-click a field in the list of fields to add it in the *Expression* field. Define the UDF using the operator and functions buttons.

**NOTE:** Hovering the mouse over a function or operation button displays a description below the folder tree.

9 Click Save to close the dialog box and return to the *Field and UDF Customizations* window. The UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data entry grid.

# Adding a Milepost User Defined Field

Set up a *Milepost* user defined field (UDF) when you want to assign a different milepost format to a facility type on a pipeline. For example, if coupons require a different milepost format than other facility types on a pipeline, set up a milepost UDF and then assign the UDF at the facility type level in the *Facility Location ID Formats* mini-grid of *Edit ROW Detail* (Data Entry > Edit ROW Detail).

To add a *Milepost* UDF, follow these steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - a Click **Customize** to open the Column Selections dialog box (Figure 3-32, page 73).

- **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
- **c** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- **3** Select an item in the *Properties* panel that includes the data entry grid you want to add a UDF.

For example, double-click **Facility Surveys** > **Common to All Facilities** > **ROW and Pipeline** to display a grid with fields and property settings related to the *Edit ROW Detail* grid (Figure 3-40, page 85).

Modules Data Entry Reports / Graphs Tool	ls Field Computer Help 🔅 p	CS Axis		Welcome John S	mith   🕑   🔀
	The second secon	ulated   🧿 Milepost   🖷 Picklist	L - 0-1011 D-1-1 -		and Brown
	🕒 🏨 Normal   👜 Cal	ulated   🔮 Milepost   🔠 Picklist	🍟 On/Off Pair   🖄	Summation A L	lelete   P Custo
Properties	Original Caption	Caption	Field Definition	Bridge - Required for Import	Bullhorn Engineering Uni
Facility Surveys	AC IRF	AC IRF	🧃 Numeric (6, 3)		
Common to All Facilities	AC P/S	AC P/S	🧧 Numeric (6, 3)		
CPDM A Dest Point	Allegro Survey Cycle Off Time	Allegro Survey Cycle Off Time	🔒 🔚 Integer ()		N/A
Test Point Information	Allegro Survey Cycle On Time	Allegro Survey Cycle On Time	🔒 📊 Integer ()		N/A
Test Point Inspection	Average P/S	Average P/S	Numeric (6, 3)		
Test Point Maintenance     Rectifier	Casing IRF	Casing IRF	🧧 Numeric (6, 3)		CASING IOX
Gectifier     Foreign Bond	Casing IRF Uncompensated	Casing IRF Uncompensated	🧧 📊 Numeric (6, 3)		N/A
Galvanic Anode	Casing P/S	Casing P/S	🧧 Numeric (6, 3)		CASING
🕨 🥅 Tank	Casing P/S Uncompensated	Casing P/S Uncompensated	🥃 📊 Numeric (6, 3)		N/A
<ul> <li>VM</li> <li>ACM</li> </ul>	Casing Status	Casing Status	Gharacter (6)		N/A
ICM	Effective IR Correction	Effective IR Correction	🧧 📆 Numeric (6, 3)		N/A
Continuous Surveys	Effective IR Correction Date	Effective IR Correction Date	😑 🔚 DateTime		N/A
ROW and Pipeline	Effective Native Date	Effective Native Date	📒 📊 DateTime		N/A
F Kow and Pipeine	Effective Native P/S	Effective Native P/S	🧧 📊 Numeric (6, 3)		N/A
	Effective Structure IRF	Effective Structure IRF	🧧 📊 Numeric (6, 3)		N/A
	Feet Above Criteria	Feet Above Criteria	🧧 📊 Numeric (9, 2)		N/A
	Feet Above Criteria (IRF)	Feet Above Criteria (IRF)	🥃 📊 Numeric (9, 2)		N/A
	Feet Below Criteria	Feet Below Criteria	🤤 📆 Numeric (9, 2)		N/A
	Feet Below Criteria (IRF)	Feet Below Criteria (IRF)	🧧 📺 Numeric (9, 2)		N/A
	Foreign IR (Foreign P/S - Foreign	I Foreign IR (Foreign P/S - Forei	🧧 📆 Numeric (6, 3)		N/A
	Foreign IRF	Foreign IRF	🧧 Numeric (6, 3)		FOREIGN IOX
	Foreign IRF Uncompensated	Foreign IRF Uncompensated	🧧 📆 Numeric (6, 3)		N/A
	Foreign P/S	Foreign P/S	🧧 Numeric (6, 3)		FOREIGN
	Foreign P/S Uncompensated	Foreign P/S Uncompensated	🤤 📆 Numeric (6, 3)		N/A
	den data Comment	landata Comet	Mumeric (6.2)		

Figure 3-40. Field and UDF Customizations

- 4 Click **O** Milepost in the toolbar to open the *Add Milepost Field* dialog box (Figure 3-41).
- **5** Type a unique name for the UDF in the **Caption** field.
- **6** Click the down arrow in the **Milepost Formats** field and select a milepost format in the selection list.
- 7 Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

The UDF is now available for selection in the *Facility Location ID Formats* minigrid of *Edit ROW Detail*. If needed, see *Working with Pipeline Records* (page 139) for more information.

Add Milepost Field		x
Caption		
My Milepost UDF		
Milepost Formats		
Miles/Station Number		•
	💾 Save 🛛 🔕	Cancel

Figure 3-41. Add Milepost Field

#### Adding a Standard Picklist User Defined Field

A *Standard Picklist* is a list of acceptable choices for a field in a data entry grid that a user selects from when entering data. This feature improves data consistency and accuracy by allowing users to select from a list of predefined choices instead entering data manually.

A *Standard Picklist* contains a list of valid items for selection, a description of each item, and a value assigned to each item that determines the sorting order of items in the list.

**NOTE:** A *Standard Picklist* in PCS Axis is similar to a validation table in PCS 7.x.

To add a Standard Picklist user defined field (UDF), follow these steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - Click Customize to open the Column Selections dialog box (Figure 3-32, page 73).

- **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
- **c** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- **3** Select an item in the *Properties* panel that includes the data entry grid you want to add a UDF.

For example, double-click **Facility Surveys** > **CPDM** > **Test Point** > **Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid (Figure 3-42, page 87).

Modules Data Entry Reports / Graphs Tool	s Field	Computer Help 🔅 PCS	Axis		Welcome John	Smith   🕑   🔀
		🕀 👰 Normal   🗔 Calcula	ited   👰 Milepost   ভ Picklist	🏪 On/Off Pair   🖾	Summation	Delete   🥜 Cust
Properties	ıd	Original Caption	Caption	Field Definition	Bridge - Required for Import	Bullhorn Engineering Un
🛯 🔤 Facility Surveys	•	AC IRF	AC IRF	🧃 Numeric (6, 3)		
Common to All Facilities		AC P/S	AC P/S	Numeric (6, 3)		
CPDM     CPDM     CPDM     CPDM		Allegro Survey Cycle Off Time	Allegro Survey Cycle Off Time	🧧 🔚 Integer ()		N/A
Test Point Information		Allegro Survey Cycle On Time	Allegro Survey Cycle On Time	🥃 🔟 Integer ()		N/A
Test Point Inspection		Average P/S	Average P/S	Numeric (6, 3)		
Test Point Maintenance		Casing IRF	Casing IRF	🧧 Numeric (6, 3)		CASING IOX
Gectifier     Foreian Bond		Casing IRF Uncompensated	Casing IRF Uncompensated	🥃 📆 Numeric (6, 3)		N/A
Galvanic Anode		Casing P/S	Casing P/S	🧧 Numeric (6, 3)		CASING
🕨 🧰 🔘 Tank		Casing P/S Uncompensated	Casing P/S Uncompensated	🥃 📊 Numeric (6, 3)		N/A
		Casing Status	Casing Status	Character (6)		N/A
ICM		Effective IR Correction	Effective IR Correction	📔 🔚 Numeric (6, 3)		N/A
Continuous Surveys     ROW and Pipeline		Effective IR Correction Date	Effective IR Correction Date	DateTime		N/A
		Effective Native Date	Effective Native Date	🧧 📆 DateTime		N/A
		Effective Native P/S	Effective Native P/S	🣔 📆 Numeric (6, 3)		N/A
		Effective Structure IRF	Effective Structure IRF	🥃 📆 Numeric (6, 3)		N/A
		Feet Above Criteria	Feet Above Criteria	🥃 🗍 Numeric (9, 2)		N/A
		Feet Above Criteria (IRF)	Feet Above Criteria (IRF)	🥃 📊 Numeric (9, 2)		N/A
		Feet Below Criteria	Feet Below Criteria	🤤 📺 Numeric (9, 2)		N/A
		Feet Below Criteria (IRF)	Feet Below Criteria (IRF)	😑 📺 Numeric (9, 2)		N/A
		Foreign IR (Foreign P/S - Foreign I	Foreign IR (Foreign P/S - Forei	📔 🔚 Numeric (6, 3)		N/A
		Foreign IRF	Foreign IRF	🧧 Numeric (6, 3)		FOREIGN IOX
		Foreign IRF Uncompensated	Foreign IRF Uncompensated	🤤 📺 Numeric (6, 3)		N/A
		Foreign P/S	Foreign P/S	🧧 Numeric (6, 3)		FOREIGN
		Foreign P/S Uncompensated	Foreign P/S Uncompensated	🥃 📆 Numeric (6, 3)		N/A
		International Contract	Includes Courses	Mumeric (6.3)		

Figure 3-42. Field and UDF Customizations

- 4 Click Picklist in the toolbar to open the *Select Picklist Type* dialog box (Figure 3-43).
- **5** Click **Standard** and then click **V OK** to close the *Select Picklist Type* dialog box.

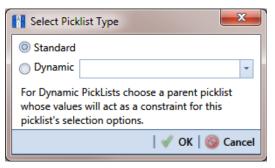


Figure 3-43. Select Picklist Type

- **6** When the *Add Picklist Field* dialog box opens, type a unique name for the UDF in the **Caption** field (Figure 3-44, page 88).
- **7** Set the length of the field by typing the number of characters required for the UDF in the **Width** field.

Clicking the up arrow in the *Width* field increases the value; clicking the down arrow decreases the value.

Capt				Width		
My	Standard Picklist				2	0 \$
Cell S	Style		Dropdown Style			
Sho	w Description And	/alue 🔻	Show Description	on And Value		-
Valid Valu	lation Order Ie	*	Options Allow Multip Allow Other			
				🗙 (	Delete	
	Value	Description				
*		Click here to	add a new row			
	1	My Standard	Picklist Item A			
	2	My Standard	Picklist Item B			
►	3	My Standard	Picklist Item C			Ģ
	4	My Standard	Picklist Item D			C

Figure 3-44. Add Picklist Field

8 Choose an option for displaying the UDF in data entry grids. Click the down arrow in the field **Cell Style** and select one of the following options in the selection list:

- *Show Value*: Displays the assigned value of the selected item in the picklist.
- *Show Description*: Displays the description of the selected item in the picklist.
- *Show Value And Description*: Displays the assigned value and description of the selected item in the picklist.
- *Show Description And Value*: Displays the description and assigned value of the selected item in the picklist.
- **9** Choose an option for displaying items in the picklist. Click the down arrow in the field **Dropdown Style** and select one of the following options in the selection list:
  - Show Value: Displays only the assigned value of items in the picklist.
  - Show Description: Displays only the description of items in the picklist.
  - *Show Value And Description*: Displays the assigned value and description of items in the picklist.
  - *Show Description And Value*: Displays the description and assigned value of items in the picklist.
- **10** Select an option for sorting items in the picklist. Click the down arrow in the field **Validation Order** and select one of the following options in the selection list:
  - *Value*: Sorts items numerically based on values assigned to items in the picklist.
  - *Description*: Sorts items alphanumerically based on the description of items in the picklist.
  - *Defined*: Sorts items based on the order of items listed in the *Customize Picklist* dialog box.
- **11** If you want the UDF to support multiple selections in the picklist, click the check box **Allow Multiple Selections**.
- **12** If you want the UDF to allow data entry of other data in addition to picklist items for selection, click the check box **Allow Other Entry**.
- **13** To add picklist items for selection, follow these steps:
  - **a** Click the message **Click here to add new row** to add an empty row of fields for data entry (Figure 3-44, page 88).
  - **b** Type a value in the **Value** field to associate a code number with the picklist item. They type a description for the picklist item in the **Description** field.

- **c** Press **Enter** on the computer keyboard to add another empty row of fields for data entry.
- **d** Type a value in the **Value** field and then press the **Tab** key on the computer keyboard to advance the cursor to the **Description** field. Type a description for the picklist item.
- e Repeat **step 13 c** and **d** as needed until all picklist items have been added. When you finish, click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

The UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data entry grid.

### Setting Up a Data Entry Field as a Standard Picklist

A *Standard Picklist* is a list of acceptable choices for a field in a data entry grid that a user selects from when entering data. This feature improves data consistency and accuracy by allowing users to select from a list of predefined choices instead entering data manually.

For example, setting up a picklist with valid repair codes or status conditions allows users to choose from a list of valid items instead of typing information to describe the repair status or condition of a facility test station or pipeline.

A *Standard Picklist* contains a list of valid items for selection, a description of each item, and a value assigned to each item that determines the sorting order of items in the list.

**Note:** A Standard Picklist in PCS Axis is similar to a validation table in PCS.

To set up a data entry field as a Standard Picklist, follow these steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - Click *Customize* to open the *Column Selections* dialog box (Figure 3-32, page 73).

- **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
- **c** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- **3** Select an item in the *Properties* panel that includes the data entry field you want to set up as a *Standard Picklist*.

For example, double-click **Facility Surveys** > **Common to All Facilities** > **Maintenance** to display a grid with fields and property settings related to all *Maintenance* data entry grids (Figure 3-45).

**NOTE:** Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

4 Using the horizontal scroll bar near the bottom of the grid, display the grid column labeled *Grids–Picklist Definition*. Then select the data entry field you want to set up as a *Standard Picklist*. For example, select *Repair Priority* as shown in the following example.

eld and UDF Customizations 🗙	Field Computer Help 🔅 PC	.5 AXIS		We	Icome John Smith	🙂 i 🖾 Log
	🕀 👰 Normal	🗔 Calculated   🧟 Milepost   🦷	🗃 Picklist   🏪 On/Of	f Pair 🛛 🖾 Summa	ation 🛛 🔭 Delete	🔑 Customia
Properties	Original Caption	Caption	Field Definition	Grids - Pick List Definition	Reports - Allow Column Resize	System - Colum
Facility Surveys	Maintenance Record Attached	Maintenance Record Attached	📔 🗐 uniqueidentifier		N/A	No
<ul> <li>Common to All Facilities</li> </ul>	Maintenance Status	Maintenance Status	Character (15)		No	No
ROW and Pipeline	Most Recent Maintenance	Most Recent Maintenance	Cogical		N/A	No
Permanent Information	Reference Number	Reference Number	Character (20)	1	Yes	No
Inspection	Repair Corrected Date	Repair Corrected Date	DateTime	-	N/A	No
Maintenance	Repair Found Date	Repair Found Date	DateTime		N/A	No
E Sub Facility	Repair Initiated Date	Repair Initiated Date	DateTime		N/A	No
	Repair Priority	Repair Priority	Character (5)		Yes	No
ICM	Repair Remarks	Repair Remarks	🧉 Memo	Convert To Pie	cklist	No
	4					

Figure 3-45. Field and UDF Customizations

**5** Convert the selected data entry field to a *Standard Picklist* field. Click the edit icon *S* in the *Grids-Picklist Definition* field for the data entry field selected earlier, such as *Repair Priority* (Figure 3-45, page 91).

When a data entry grid includes existing data for the data entry field you convert to a *Standard Picklist*, PCS Axis displays a message to notify you of the number of affected records. You can either click *Yes* in the message to continue converting the field to a *Standard Picklist* or *No* to cancel the operation. Selecting *Yes* allows PCS Axis to use existing data as valid items for selection in the *Standard Picklist*. Using the merge button (1) allows you to edit these selection items as needed (Figure 3-46).

If you decide later you want to convert the *Standard Picklist* to a normal data entry field, click the revert button share and then click *Yes* when a confirmation message displays. PCS Axis then re-populates affected fields in the data entry grids with unaltered data that was available prior to the field conversion.

eld and UDF Customizations 🗙					n Smith   🥹   🔀 Log
	🕀 👰 Normal   📊 Calcu	lated   👰 Milepost   ভ Picklist	🛛 🖣 On/Off Pair 🛛 🖾	Summation	Delete   🥜 Customi
Properties Enter Search Text × 00 Find	Original Caption	Caption	Field Definition	Grids - Pick List Definition	Reports - Allow Column Resize
Facility Surveys	Maintenance Record Attached	Maintenance Record Attached	🥃 📺 uniqueidentifier		N/A
Common to All Facilities	Maintenance Status	Maintenance Status	Character (15)		No
ROW and Pipeline     Permanent Information     Information     Information     Inspection     Sub Facility     Sub Facility     CPDM	Most Recent Maintenance	Most Recent Maintenance	Logical		N/A
	Reference Number	Reference Number	Character (20)	8	Yes
	Repair Corrected Date	Repair Corrected Date	DateTime		N/A
	Repair Found Date	Repair Found Date	DateTime		N/A
	Repair Initiated Date	Repair Initiated Date	DateTime		N/A
	Repair Priority	Repair Priority	Gharacter (5)	1 🧕 🖘	Yes
	Repair Remarks	Repair Remarks	🧉 Memo	/ Merge	Yes
ROW and Pipeline					

Figure 3-46. Field and UDF Customizations

6 Click the edit icon *P* again for the data entry field converted earlier to a *Standard Picklist* to open the *Edit Picklist Field* dialog box (Figure 3-47).

Cell S	Style	Dropdown Style	
	w Description And		And Value
/alid	ation Order		
Valu	ie	-	
			🗙 Delete
	Value	Description	
*		Click here to add a new row	
	1	Critical	
•	2	High	6
	3	Medium	
	4	Low	

Figure 3-47. Edit Picklist Field

- 7 Choose an option for displaying the UDF in data entry grids. Click the down arrow in the field **Cell Style** and select one of the following options in the selection list:
  - *Show Value*: Displays the assigned value of the selected item in the *Standard Picklist*.
  - *Show Description*: Displays the description of the selected item in the *Standard Picklist*.
  - *Show Value And Description*: Displays the assigned value and description of the selected item in the *Standard Picklist*.
  - *Show Description And Value*: Displays the description and assigned value of the selected item in the *Standard Picklist*.
- 8 Choose an option for displaying items in the *Standard Picklist*. Click the down arrow in the field **Dropdown Style** and select one of the following options in the selection list:
  - *Show Value*: Displays only the assigned value of items in the *Standard Picklist*.
  - Show Description: Displays only the description of items in the Standard *Picklist*.
  - Show Value And Description: Displays the assigned value and description of items in the Standard Picklist.
  - *Show Description And Value*: Displays the description and assigned value of items in the *Standard Picklist*.
- 9 Select an option for sorting items in the *Standard Picklist*. Click the down arrow in the field **Validation Order** and select one of the following options in the selection list:
  - *Value*: Sorts items numerically based on values assigned to items in the *Standard Picklist*.
  - *Description*: Sorts items alphanumerically based on the description of items in the *Standard Picklist*.
  - *Defined*: Sorts items based on the order of items listed in the *Edit Picklist Field* dialog box.

**10** To add items for selection in the *Standard Picklist*, follow these steps:

**a** Click the message *Click here to add new row* to add an empty row of fields for data entry (Figure 3-47, page 93).

- **b** Type a value in the **Value** field to associate a code number with the picklist item. Then type a description for the picklist item in the adjacent **Description** field.
- **c** Press **Enter** on the computer keyboard to add another empty row of fields for data entry.
- **d** Type a value in the **Value** field and then press the **Tab** key on the computer keyboard to advance the cursor to the **Description** field. Type a description for the picklist item.
- Repeat step 10 c and d as needed until all picklist items have been added.
   When you finish, click Save to close the dialog box and return to the *Field* and UDF Customizations window.

The UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data entry grid.

For information about how to edit a picklist refer to *Editing a Picklist* (*Standard or Dynamic*) (page 106).

#### Adding a Dynamic Picklist User Defined Field

Information in this section explains how to add and edit a *Dynamic Picklist* user defined field (UDF). The information is intended for the PCS Axis *SysAdmin* or a user with *SysAdmin* user permissions.

A *Dynamic Picklist* UDF is a dynamic drop-down list with data items that change based on a data item selected in another picklist. This dependency uses a cascading parent/child relationship. For example, selecting a data item in the drop-down list of picklist A (parent) determines which data items are available for selection in the drop-down list of picklist B (child).

*Dynamic Picklists* are helpful to users when entering data in a data grid or form. It allows for easier and more accurate data entry.

Building a *Dynamic Picklist* allows you to control the data entered in a field by limiting the choices to those in a pre-defined list. For example, instead of a user typing a lengthy description for sub-station locations throughout the country, you might want to build a *Dynamic Picklist* with a parent picklist named *My Sub-Station Type* that includes three associated child picklists labeled *My Sub-Station State*, *My Sub-Station County*, and finally *My Sub-Station City*. Each of these are dependent upon the other and form the *Dynamic Picklist*.

Building a *Dynamic Picklist* is a 2-part process. You begin with creating the initial parent picklist as a *Standard Picklist* and then add and map one or more child *Dynamic Picklists*. Once this process is complete, you can then add the parent and child picklists in data entry grids/forms, reports, and prompts sent to the Allegro Field Computer.

Topics in this section explain how to add and edit a *Dynamic Picklist*. They include those in the following list:

- Adding the Initial Parent Picklist (page 97)
- Adding a Child Picklist and Mapping Data Items (page 101)

As an example to demonstrate how to build a Dynamic Picklist, information in this section uses a 2-level Dynamic Picklist with *My Pipeline State* as the initial parent picklist and *My Pipeline County* as the associated child picklist. Although Dynamic Picklists support an unlimited number of child picklists, the example uses one for clarity purposes. The process for adding multiple child picklists is the same as adding one child picklist.

# Adding the Initial Parent Picklist

Complete the following steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-48).
- 2 If you want to select a grid layout theme:
  - a Click *Customize* to open the *Column Selections* dialog box (Figure 3-32, page 73).
  - **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
  - c Click Save to close the dialog box and return to the *Field and UDF Customizations* window.
- Select an item in the *Properties* panel that includes the data entry grid you want to add a *Dynamic Picklist* UDF. For example, double-click Facility Surveys > CPDM > Test Point > Test Point Inspection to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid (Figure 3-48).

Modules Data Entry Reports / Graphs Too	JIS FIEld	Computer Help 🔅 PCS	Axis		Welcome John	5mith   🖤   🖾
		🕀 🗿 Normal   🗐 Calcul	sted   📀 Milepost   🖳 Picklist	🏪 On/Off Pair   🔀	Summation	Delete   🦨 Cus
Properties	ind	Original Caption	Caption	Field Definition	Bridge - Required for Import	Bullhorn Engineering Ur
Facility Surveys	•	AC IRF	AC IRF	Numeric (6, 3)		
Common to All Facilities		AC P/S	AC P/S	🧧 Numeric (6, 3)		
<ul> <li>CPDM</li> <li>Boom Test Point</li> </ul>		Allegro Survey Cycle Off Time	Allegro Survey Cycle Off Time	🔒 🗐 Integer ()		N/A
Test Point Information		Allegro Survey Cycle On Time	Allegro Survey Cycle On Time	Integer ()		N/A
Test Point Inspection		Average P/S	Average P/S	Numeric (6, 3)		
Test Point Maintenance		Casing IRF	Casing IRF	Numeric (6, 3)		CASING IOX
Control Rectifier     Foreign Bond		Casing IRF Uncompensated	Casing IRF Uncompensated	Numeric (6, 3)		N/A
Galvanic Anode		Casing P/S	Casing P/S	Numeric (6, 3)		CASING
🕨 🧰 🍈 Tank		Casing P/S Uncompensated	Casing P/S Uncompensated	🔒 📊 Numeric (6, 3)		N/A
		Casing Status	Casing Status	Character (6)		N/A
ICM		Effective IR Correction	Effective IR Correction	🔒 🔚 Numeric (6, 3)		N/A
LSM     Continuous Surveys     ROW and Pipeline		Effective IR Correction Date	Effective IR Correction Date	DateTime		N/A
		Effective Native Date	Effective Native Date	DateTime		N/A
		Effective Native P/S	Effective Native P/S	🔒 📆 Numeric (6, 3)		N/A
		Effective Structure IRF	Effective Structure IRF	Numeric (6, 3)		N/A
		Feet Above Criteria	Feet Above Criteria	0 (1) Numeric (9, 2)		N/A
		Feet Above Criteria (IRF)	Feet Above Criteria (IRF)	🔒 📊 Numeric (9, 2)		N/A
		Feet Below Criteria	Feet Below Criteria	🔒 🛄 Numeric (9, 2)		N/A
		Feet Below Criteria (IRF)	Feet Below Criteria (IRF)	📴 📊 Numeric (9, 2)		N/A
		Foreign IR (Foreign P/S - Foreign I	Foreign IR (Foreign P/S - Forei	🔒 📊 Numeric (6, 3)		N/A
		Foreign IRF	Foreign IRF	Numeric (6, 3)		FOREIGN IOX
		Foreign IRF Uncompensated	Foreign IRF Uncompensated	🔒 🔚 Numeric (6, 3)		N/A
		Foreign P/S	Foreign P/S	Numeric (6, 3)		FOREIGN
		Foreign P/S Uncompensated	Foreign P/S Uncompensated	🗧 📊 Numeric (6, 3)		N/A
	-	In and the Country	Inclusion Comment	Mumeric (6. 2)		

Figure 3-48. Field and UDF Customizations

- 4 Click Picklist in the toolbar of the *Field and UDF Customizations* window to open the *Select Picklist Type* dialog box (Figure 3-49).
- **5** Click **Standard** and then click **V OK** to close the dialog box.

Select Picklist Type
Standard     Dynamic
For Dynamic PickLists choose a parent picklist whose values will act as a constraint for this picklist's selection options.
🛷 OK   🚳 Cancel

Figure 3-49. Select Picklist Type

- **6** When the dialog box *Add Picklist Field* opens, set properties for the parent picklist in the following manner (Figure 3-50):
  - **a** Type a unique name for the parent picklist in the **Caption** field.
  - Indicate the number of characters to allow in the name of the parent picklist.
     Type a value in the Width field or use the up/down arrows to select a value.
     Clicking the up arrow increases the value; clicking the down arrow decreases the value.

â Ad	d Picklist Field				x
Captio	on			Width	
8				2	0 🗘
Cell S	tyle		Dropdown Styl	e	
Shov	v Value	-	Show Value		-
Valida Value	ation Order	•	Options Allow Multip Allow Other		5
				Contract	
	Value		ription		
*	Clic	k here to a	dd a new row		
	Ş	Revert to	Baseline   🗎 Si	ave   🔕 Ca	ancel

Figure 3-50. Add Picklist Field

- 7 Choose an option for displaying the parent picklist in data entry grids. Click the down arrow in the field **Cell Style** and select one of the following options in the selection list:
  - *Show Value*: Displays the assigned value of the selected item in the picklist.
  - *Show Description*: Displays the description of the selected item in the picklist.
  - *Show Value And Description*: Displays the assigned value and description of the selected item in the picklist.
  - *Show Description And Value*: Displays the description and assigned value of the selected item in the picklist.
- 8 Choose an option for displaying items in the parent picklist. Click the down arrow in the field **Dropdown Style** and select one of the following options in the selection list:
  - Show Value: Displays only the assigned value of items in the parent picklist.
  - *Show Description*: Displays only the description of items in the parent picklist.
  - *Show Value And Description*: Displays the assigned value and description of items in the parent picklist.
  - *Show Description And Value*: Displays the description and assigned value of items in the parent picklist.
- **9** Select an option for sorting items in the parent picklist. Click the down arrow in the field **Validation Order** and select one of the following options in the selection list:
  - *Value*: Sorts items numerically based on values assigned to items in the parent picklist.
  - *Description*: Sorts items alphanumerically based on the description of items in the parent picklist.
  - *Defined*: Sorts items based on the order of items listed in the *Customize Picklist* dialog box.

**NOTE:** Do not enable the options *Allow Multiple Selections* and *Allow Other Entry* for the parent picklist. These options do not apply to *Dynamic Picklists*.

**10** Complete the following steps to add data items for selection in the drop-down list of the parent picklist.

Figure 3-51 shows an example of two data items labeled OK-1 Oklahoma and TX-1 Texas as items for selection in the parent picklist My Pipeline States. These data items are set up later as child picklists in the section Adding a Child Picklist and Mapping Data Items (page 101).

- **a** Click the message **Click here to add a new row** to add an empty row of fields for data entry.
- **b** Associate a code with the name of the data item (child picklist). Type one or more letters, numbers, or a combination of both in the Value field. Then type a description for the data item (child picklist) in the Description field.
- **c** Press **Enter** on the computer keyboard to add another empty row of fields for data entry.
- **d** Type a value in the **Value** field and then press the **Tab** key on the computer keyboard to advance the cursor to the **Description** field. Type a description for another data item (child picklist).
- Repeat step 10 c and d as needed until all data items (child picklists) have been added. When you finish, click Save to close the dialog box and return to the *Field and UDF Customizations* window.

PCS Axis adds the parent picklist in the list of other fields in the *Field and UDF Customizations* window.

Ad	ld Picklist Field					×
Capti	ion				Width	
My F	Pipeline States					20 🗘
Cell S	Style		Dropdow	n Style		
Show	w Description And Valu	e 🔹	Show De	escription	And Value	-
Valid	ation Order		Options			
Desc	ription	-	Allow	Multiple S		
			Allow	Other Ent	ry	
					🗙 Delete	e
	Value	Description				
*	C	lick here to a	dd a new i	row		
+	OK-1	Oklahoma				
	TX-1	Texas				
						-
		🖘 Re	vert to Bas	eline   📔	Save   🚳	Cancel

Figure 3-51. Add Picklist Field

**11** Continue with the next section *Adding a Child Picklist and Mapping Data Items* (page 101).

### Adding a Child Picklist and Mapping Data Items

Complete the following steps to add a child picklist and then map data items in the child picklist to data items in a parent picklist:

- 1 If the *Field and UDF Customizations* window is not open, click **Tools** > **Field and UDF Customizations** to open the window (Figure 3-48, page 97).
- **2** Select an item in the *Properties* panel that includes the initial parent picklist added earlier. (See *Adding the Initial Parent Picklist* on page 97.)

For example, double-click **Facility Surveys** > **CPDM** > **Test Point** > **Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid.

**3** Click Picklist in the toolbar of the *Field and UDF Customizations* window to open the *Select Picklist Type* dialog box (Figure 3-52).

Select Picklist Type
Standard
Dynamic
For Dynamic My Pipeline States whose values will act as a constraint for this
picklist's selection options.
🛷 OK   🚳 Cancel

Figure 3-52. Select Picklist Type

- 4 Click **Dynamic** in the *Select Picklist Type* dialog box. Then click the down arrow in the adjacent field and select the parent picklist you want to associate with the child picklist. Click **V OK** to close the dialog box.
- **5** When the dialog box *Add Picklist Field* (Figure 3-53) opens, set properties and add data items for the child picklist in the following manner:
  - **a** Type a unique name for the child picklist in the **Caption** field.
  - Indicate the number of characters to allow in the name of the child picklist.
     Type a value in the Width field or use the up/down arrows to select a value.
     Clicking the up arrow increases the value; clicking the down arrow decreases the value.

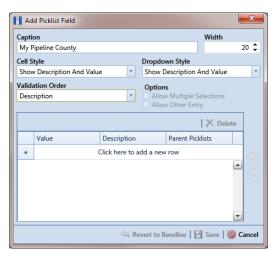


Figure 3-53. Add Picklist Field

- 6 Choose an option for displaying the child picklist in data entry grids. Click the down arrow in the field **Cell Style** and select one of the following options in the selection list:
  - *Show Value*: Displays the assigned value of the selected item in the picklist.
  - Show Description: Displays the description of the selected item in the picklist.
  - *Show Value And Description*: Displays the assigned value and description of the selected item in the picklist.
  - *Show Description And Value*: Displays the description and assigned value of the selected item in the picklist.
- 7 Choose an option for displaying data items in the child picklist. Click the down arrow in the field **Dropdown Style** and select one of the following options:
  - Show Value: Displays only the assigned value of items in the child picklist.
  - Show Description: Displays only the description of items in the child picklist.
  - *Show Value And Description*: Displays the assigned value and description of items in the child picklist.
  - *Show Description And Value*: Displays the description and assigned value of items in the child picklist.
- 8 Select an option for sorting data items in the child picklist. Click the down arrow in the field **Validation Order** and select one of the following options:
  - *Value*: Sorts items numerically based on values assigned to items in the child picklist.
  - *Description*: Sorts items alphanumerically based on the description of items in the child picklist.
  - *Defined*: Sorts items based on the order of items listed in the *Customize Picklist* dialog box.

**NOTE:** The options *Allow Multiple Selections* and *Allow Other Entry* are unavailable for selection when adding a child picklist.

- **9** Complete the following steps to add data items in the child picklist and then map these data items to data items in the associated parent picklist. Data items you add become selections in the drop-down list of the child picklist.
  - **a** Click the message **Click here to add a new row** to add an empty row of fields for data entry.
  - **b** Associate a code with the name of the data item. Type one or more letters, numbers, or a combination of both in the **Value** field. Then type a description for the data item in the **Description** field.

The example below shows a data item labeled *TX-1 Travis* as an item for selection in the child picklist labeled *My Pipeline County* (Figure 3-54).

Ad 🔝	d Picklist Field							x
Capti	on					Width		
My P	Pipeline County						2	20 🗘
Cell S	tyle		_	Dropdo	wn Style			
Shov	v Description And Valu	e 🍷		Show D	escription A	nd Value		*
	ation Order ription	-			<b>s</b> v Multiple Se v Other Entry			
						🗡 Dele	te	
	Value	Description	n		Parent Pickl	ists		
*		Click here to	o ad	ld a new	row			
+	TX-1	Travis						
							•	$\overline{\bigcirc}$
		ŝ	Rev	vert to B	aseline   🗎	Save   🄇	) C	ancel

Figure 3-54. Add Picklist Field

**c** Click the **i** parent picklist button to open the dialog box labeled *Select Parent Picklist Values* (Figure 3-55).

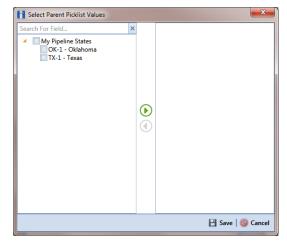


Figure 3-55. Select Parent Picklist Values

- **d** Map a data item in the parent picklist to the currently selected data item in the child picklist. A list of data items related to the parent picklist display in the left pane of the dialog box (Figure 3-56).
  - Double-click a data item in the left pane of the dialog box to move the data item to the right pane.

You can also map data items by clicking a data item's check box and then clicking the  $\bigcirc$  right arrow button. A  $\checkmark$  check mark beside a data item indicates that data item is mapped.

If you want to unmap a data item, double-click the data item in the right pane of the dialog box to move it back to the left pane. Or, select the data item in the right pane and then click the ④ left arrow button.

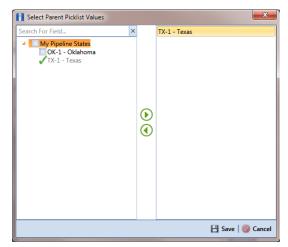


Figure 3-56. Select Parent Picklist Values

- e Click 💾 Save to save settings and close the dialog box.
- **10** To add another data item in the child picklist, follow these steps (Figure 3-57):
  - **a** Press **Enter** on the computer keyboard to add another empty row of fields for data entry in the dialog box *Add Picklist Field*.
  - **b** Associate a code with the name of the data item. Type one or more letters, numbers, or a combination of both in the **Value** field. Then type a description for the data item in the **Description** field.

The example below shows a data item labeled *OK-2 Marshall* as data item for selection in the child picklist labeled *My Pipeline County* (Figure 3-54).

Capti	on			Wi	dth	
My I	Pipeline County				2	20 🗘
Cell S	style		Dropdo	wn Style		
Sho	w Description And Valu	Je 🔹	Show [	Description And	/alue	-
	ation Order ription	-		<b>s</b> v Multiple Select v Other Entry	ions	
					Delete	
	Value	Description		Parent Picklists		
χ	OK-2	Marshall				
	TX-1	Travis			<b>_</b>	igodot
	TX-2	Travis				
	OK-1	Adair				
	1				-	

Figure 3-57. Add Picklist Field

- **c** Click the **i** parent picklist button to open the dialog box labeled *Select Parent Picklist Values* (Figure 3-55, page 104).
- **d** Map a data item in the parent picklist to the currently selected data item in the child picklist (Figure 3-56, page 105). Click **Save** when you finish to save settings and close the dialog box.
- e To add additional data items in the child picklist, repeat step 10 a through d. When you finish adding and mapping all data items in the child picklist, click
   Save to close the dialog box and return to the *Field and UDF Customizations* window.

The process for adding a *Dynamic Picklist* UDF is now complete. You can add the *Dynamic Picklist* (parent and child picklist fields) in the layout theme of a data grid, form, or report, as well as in a prompt theme for prompts sent to the Allegro Field Computer. Refer to *Working with Themes and Filter Groups* (page 316) for information. For information about editing a picklist, refer to *Editing a Picklist (Standard or Dynamic)* on page 106.

### Editing a Picklist (Standard or Dynamic)

Information in this section explains how to edit or delete a *Standard* or *Dynamic Picklist* user defined field (UDF) in *Field and UDF Customizations*.

Complete the following steps:

If the *Field and UDF Customizations* window is not open, click **Tools** > **Field and UDF Customizations** to open the window (Figure 3-48, page 97).

2 Select an item in the *Properties* panel that includes the picklist you want to edit or delete.

For example, double-click **Facility Surveys** > **CPDM** > **Test Point** > **Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid.

- **3** Select the picklist UDF you want to work with in the grid of the *Field and UDF Customizations* window.
- 4 If you want to delete the picklist UDF, click **X Delete** in the toolbar of the *Field* and UDF Customizations window. Then click **Ves** when the Confirm Delete message displays.
- 5 If you want to add or remove data items in a picklist UDF, navigate to the grid column labeled Grids Pick List Definition and click the *Picklist Field* dialog box (Figure 3-58).

	S <b>tyle</b> w Description A	nd Value		opdown S Iow Descr	<b>tyle</b> iption And	Value	
	lation Order						
Des	cription		*				
					🗙 D	elete	
	Value	Des	cription				
*		Click here	to add	a new row			
	ОК	Okla	ahoma				
	тх	Texa	as				

Figure 3-58. Edit Picklist Field

- To delete a data item in the picklist UDF, select the data item and then click
   Delete. When a *Delete* message displays, click from Yes to delete the data item or No to cancel the operation.
- 7 To add a data item in the picklist UDF, follow these steps:
  - **a** Click the message **Click here to add a new row** to add an empty row of fields for data entry.
  - **b** Associate a code with the name of the data item. Type one or more letters, numbers, or a combination of both in the **Value** field. Then type a description for the data item in the **Description** field.

- **c** If you are adding a data item in a child *Dynamic Picklist*, complete the following steps:
  - 1) Click the **III** parent picklist button to open the dialog box *Select Parent Picklist Values* (Figure 3-55, page 104).
  - **2)** Map a data item in the associated parent picklist to the new data item in the child picklist in the following manner. A list of data items related to the parent picklist display in the left pane of the dialog box (Figure 3-56, page 105).
    - Double-click a data item in the left pane of the dialog box to move the data item to the right pane.

You can also map data items by clicking a data item's check box and then clicking the  $\bigcirc$  right arrow button. A  $\checkmark$  check mark beside a data item indicates that data item is mapped.

If you want to unmap a data item, double-click the data item in the right pane of the dialog box to move it back to the left pane. Or, select the data item in the right pane and then click the ④ left arrow button.

- **d** To add another data item, press **Enter** on the computer keyboard and then repeat **step 7 a** through **c**.
- 8 Click 💾 Save to save settings and close the dialog box.

### Adding an On/Off Pair User Defined Field

PCS Axis provides several pairs of installed on/off fields for recording inspection readings in a data grid or form, such as AC P/S and AC IRF; Casing P/S and Casing IRF; Foreign P/S and Foreign IRF; Insulator P/S and Insulator IRF; and Structure P/S and Structure IRF.

If PCS Axis does not provide an installed pair of on/off fields you can use to record inspection readings for a facility or continuous survey, create a custom *On/Off Pair* user defined field (UDF). Information in the following procedure explains how to use *Field and UDF Customizations* to add an *On/Off Pair* UDF.

**NOTE:** Editing an *On/Off Pair* UDF is not currently supported. This feature will be available in a future release of PCS Axis to allow changing or deleting an On/Off Pair UDF.

The current version of PCS Axis does not support editing an *On/Off* Pair user defined field.

Complete the following steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - a Click *Customize* to open the *Column Selections* dialog box (Figure 3-32, page 73).
  - **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
  - **c** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- **3** Double-click **Facility Surveys** or **Continuous Surveys** in the *Properties* panel to open the selected folder. Then select the *Inspection* data grid you want to set up an *On/Off Pair* UDF.

For example, to set up an *On/Off Pair* UDF for the *Test Point Inspection* data grid, double-click **Facility Surveys** > **CPDM** > **Test Point.** Then click **Test Point Inspection** (Figure 3-59, page 110). Likewise, to set up an *On/Off Pair* UDF for the *Edit ISM Data* grid, double-click **Continuous Surveys** > **CIS Surveys**. Then click **Surveys**.

**NOTE:** Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

Modules Data Entry Reports / Graphs	Tools Field Computer Help 🤅	PCS Axis		Welcome Joh	nn Smith   🤨   🔯	Lo
	🕀 近 Norm	aal   词 Calculated   👰 Milepost   🗃 F	Picklist   🏪 On/Off Pair	🖉 Summation 🛛	🔨 Delete   🧚 Cu	storr
Properties	Original Caption	Caption	Field Definition	Bridge - Required for Import	Bullhorn Engineering Unit	Fi
Facility Surveys	AC IRF	AC IRF	Numeric (6, 3)			-
Common to All Facilities	AC P/S	AC P/S	Numeric (6, 3)			
CPDM A Page Test Point	Allegro Survey Cycle Off Time	Allegro Survey Cycle Off Time	Integer ()		N/A	
Test Point Information	Allegro Survey Cycle On Time	Allegro Survey Cycle On Time	Integer ()		N/A	
Test Point Inspection	Average P/S	Average P/S	Numeric (6, 3)			
III Test Point Maintenance	Casing IRF	Casing IRF	Numeric (6, 3)		CASING IOX	
Control Rectifier     Foreign Bond	Casing IRF Uncompensated	Casing IRF Uncompensated	🔒 📊 Numeric (6, 3)		N/A	
Galvanic Anode	Casina P/S	Casina P/S	Numeric (6, 3)		CASING	
Tank	Casing P/S Uncompensated	Casing P/S Uncompensated	Numeric (6, 3)		N/A	
	Casing Status	Casing Status	Character (6)		N / A	
ICM	Effective IR Correction	Effective IR Correction	🧧 🔚 Numeric (6, 3)		N/A	
上 🛄 🕘 LSM	Effective IR Correction Date	Effective IR Correction Date	🧧 📆 DateTime		N/A	
Continuous Surveys     ROW and Pipeline	Effective Native Date	Effective Native Date	DateTime		N/A	
	Effective Native P/S	Effective Native P/S	🥫 📊 Numeric (6, 3)		N/A	
	Effective Structure IRF	Effective Structure IRF	间 📊 Numeric (6, 3)		N/A	
	Feet Above Criteria	Feet Above Criteria	🧧 📊 Numeric (9, 2)		N/A	
	Feet Above Criteria (IRF)	Feet Above Criteria (IRF)	🧧 📊 Numeric (9, 2)		N/A	
	Feet Below Criteria	Feet Below Criteria	间 📊 Numeric (9, 2)		N/A	
	Feet Below Criteria (IRF)	Feet Below Criteria (IRF)	🥫 📊 Numeric (9, 2)		N/A	
	Foreign IR (Foreign P/S - Foreign IRF)	Foreign IR (Foreign P/S - Foreign IRF)	🥃 📊 Numeric (6, 3)		N/A	
	Foreign IRF	Foreign IRF	🧧 Numeric (6, 3)		FOREIGN IOX	
	Foreign IRF Uncompensated	Foreign IRF Uncompensated	🥃 📊 Numeric (6, 3)		N/A	
	Foreign P/S	Foreign P/S	🧧 Numeric (6, 3)		FOREIGN	
	Foreign P/S Uncompensated	Foreign P/S Uncompensated	间 📊 Numeric (6, 3)		N/A	
	Insulator Current	Insulator Current	🧧 Numeric (6, 3)			
	Insulator IRF	Insulator IRF	🧧 Numeric (6, 3)		INSUL IOX	
	Insulator IRF Uncompensated	Insulator IRF Uncompensated	🤤 🔚 Numeric (6, 3)		N / A	Þ

Figure 3-59. Field and UDF Customizations

4 Click **On/Off Pair** in the toolbar to open the *Add On/Off Pair Fields* dialog box (Figure 3-60).

Add On/Off Pair Fiel	lds		×					
On Field Caption	_	Off Field Caption						
Data Type		Width	Decimals					
Numeric	-	6 🗘	3 🗘					
Options								
On Range Checking	,	Off Range Checking						
On Minimum		Off Minimum						
0		0						
On Maximum		Off Maximum						
0		0						
			🚳 Cancel					

Figure 3-60. Add On/Off Pair Fields

- 5 Type a unique name in the fields **On Field Caption** and **Off Field Caption**.
- 6 Click the down arrow in **Data Type** and select **Numeric** or **Integer**.

A *Numeric* data type is a positive or negative value with decimal precision, such as 1.123 and -1.123. An *Integer* data type is a positive or negative whole number, such as 5 and -5.

7 If you selected the *Numeric* data type earlier in **step 6** (page 110), set the length of the field using the **Width** and **Decimal** fields (Figure 3-60, page 110).

Clicking the up arrow in *Width* or *Decimal* fields increases the value; clicking the down arrow decreases the value.

8 If you want PCS Axis to apply *Range Checking* to the *On* reading in the *On/Off Pair*, complete the following steps.

**NOTE:** Range checking is the acceptable range of values allowed for data entry in an inspection field.

Setting up range checking allows PCS Axis to alert the user when an incorrect value has been entered in an inspection field. For example, if the acceptable range of values is in a range of -10 to 0 and the user enters a value that is outside this range, a warning displays allowing the user to correct the invalid entry. Data entry errors are less likely to occur when using *Range Checking*. For more information, see *Setting Up Range Checking for Inspection Fields* (page 76).

- a Click the check box **On Range Checking**.
- **b** Type a minimum range value in the **On Minimum** field.
- c Type a maximum range value in the **On Maximum** field.
- **9** If you want PCS Axis to apply *Range Checking* to the *Off* reading in the *On/Off Pair*, complete the following steps:
  - a Click the check box Off Range Checking.
  - **b** Type a minimum range value in the **Off Minimum** field.
  - c Type a maximum range value in the **Off Maximum** field.
- **10** The *On/Off Pair* UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data grid or form.

### Working with a Summation User Defined Field

A *Summation* user defined field (UDF) is a *Permanent Information* field available for use in a data grid, form, report, or as a filter in scheduling. It is a simple yet powerful UDF that provides useful information when analyzing pipeline data.

The function of a *Summation* UDF is to aggregate data for a target field using one of the following operators: *Average*, *Count*, *Latest*, *Maximum*, *Minimum*, and *Sum*. As an option, you can also include one or more filters that run either before or after the data aggregation.

**EXAMPLE:** Set up a *Summation* UDF using *Structure P/S* as the target field and *Average* as the operator. Include a *Calculated* UDF as a filter in the *Summation* UDF that is set up to find the variance between the actual and average *Structure P/S* reading for test points. The expression for the *Calculated* UDF is ABS([My Summation Name] – [Structure P/S]). Add the *Summation* and *Calculated* UDFs in the *Test Point Inspection* data grid to view the results of the data aggregation. For more information about working with a *Calculated* UDF, refer to *Adding a Calculated User Defined Field* (page 82).

Information in this section explains how to work with a *Summation* user defined field. Topics include those in the following list:

- Adding a Summation User Defined Field
- Editing a Summation User Defined Field (page 117)

### Adding a Summation User Defined Field

Complete the following steps to add a Summation UDF:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 71).
- 2 If you want to select a grid layout theme, follow these steps:
  - a Click **Customize** to open the Column Selections dialog box (Figure 3-32, page 73).
  - **b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
  - **c** Click **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

**3** Double-click **Facility Surveys** > **Common to All Facilities** in the *Properties* panel. Then click **Permanent Information** to display a grid with fields and property settings common to all facilities (Figure 3-61).

**NOTE:** Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

: Modules Data Entry Reports / Graphs Tools	Field (	Computer Help 😯 PCS Av	kis	Welcome J	ohn Smith   🤨   🔀 L						
Red allo OUP Cosconnizacions 🛪											
Properties Enter Search Text X 👀 Fi	nd	Original Caption	Caption	Field Definition	System - User Defined Derivation Definition						
<ul> <li>Facility Surveys</li> </ul>		Address	Address	📔 🛄 Character (100)							
<ul> <li>Common to All Facilities</li> </ul>		Address - Apartment	Address - Apartment	Gharacter (10)							
ROW and Pipeline     Permanent Information		Address - Building	Address - Building	Character (50)							
Information		Address - Post-Direction	Address - Post-Direction	Character (2)							
Inspection		Address - Pre-Direction	Address - Pre-Direction	Character (2)							
		Address - Street	Address - Street	Character (20)							
Sub Facility		Address - Street Number	Address - Street Number	Gharacter (8)							
► WM		Address - Suffix	Address - Suffix	Character (4)							
🕨 🦲 🦲 ACM		City	City	Character (25)							
E ICM		Completed Maintenance	Completed Maintenance	🧧 🔚 Numeric (3, 0)							
Continuous Surveys		Days Since First Bad Reading	Days Since First Bad Reading	🧧 📊 Numeric (8, 0)							
ROW and Pipeline		Days Since Last Good Reading	Days Since Last Good Reading	🧧 📊 Numeric (8, 0)							
		Days Until Delinquent	Days Until Delinquent	🥃 📊 Numeric (5, 0)							
		Elevation	Elevation	Numeric (5, 0)							
		Facility and ROW Currently Active	Facility and ROW Currently Active	📔 🔚 Logical							
		Facility Attached Documents	Facility Attached Documents	🧧 🔚 uniqueidentifier							
		Facility Currently Active	Facility Currently Active	🔒 🔚 Logical							
		Facility Delinquent Date	Facility Delinquent Date	DateTime							
		Facility Due Dates	Facility Due Dates	😑 🔚 Memo							
		Facility ID	Facility ID	🧧 Character (20)							
		Facility Next Due Date	Facility Next Due Date	📒 🗐 DateTime							
		Facility Type	Facility Type	🧧 Character (2)							
		Feet	Feet	🥃 🔚 Numeric (15, 2)							
		GPS Accuracy	GPS Accuracy	Character (10)							
		Last Inspection Date	Last Inspection Date	📔 🔚 DateTime							
		Last Maintenance Date	Last Maintenance Date	📔 🗐 DateTime							

Figure 3-61. Field and UDF Customizations

4 Click **Summation** in the toolbar to open the *Add Summation Field* dialog box (Figure 3-62, page 114).

Caption	Data Type Character	Width 0	Decimals 0
🛛 🍞 Filters			
earch For Field		×	Operator
Facility Information Fields		<b></b>	O Average
Atmospheric Information Fields			🔘 Count
Coupon Information Fields			Latest Apply Filters Prior To Aggregation
Crossing Information Fields			
Dig Site Information Fields			O Maximum
Foreign Bond Information Fields			O Minimum
Galvanic Anode Information Fields			O Sum
Inhibitor Injector Information Fields			
Leak Survey Information Fields			
Patrol/Leak Survey Information Fields			
Pressure Regulator Information Fields			
Probe Information Fields			
Rectifier Information Fields			
Relief Valve Information Fields			
Samples Information Fields			
Tank Information Fields			
Test Point Information Fields			
Valve Information Fields			
Visual Site Information Fields			
Facility Inspection Fields			
Atmospheric Inspection Fields			
Coupon Inspection Fields			
Crossing Inspection Fields			
Dig Site Inspection Fields			
Foreign Bond Inspection Fields     Galvanic Anode Inspection Fields			
- Guivanie Anode Inspection rielas			
<ul> <li>Inhibitor Injector Inspection Fields</li> <li>Leak Survey Inspection Fields</li> </ul>			
Patrol/Leak Survey Inspection Fields		*	

Figure 3-62. Add Summation Field

- **5** Type a unique name for the *Summation* UDF in the **Caption** field.
- 6 Select a target field in the list of fields in the selection panel. For example, click the
   ▶ expand arrow for *Test Point Inspection Fields*, then double-click *Structure P/S*. A *√* green check mark indicates a selection (Figure 3-63, page 115).
- **7** Select an **Operator** option. For example, *Average* is selected in the following figure (Figure 3-63, page 115).

The *Summation* expression displays in the top right-hand corner of the dialog box, such as *Average: Structure P/S* shown in the following example.

- 8 Click 💾 Save to save settings.
- 9 If you want to add an optional AND filter group to the *Summation* UDF, continue with step 10 (page 115). To add an optional OR filter group, continue with step 11 (page 116). Otherwise, continue with step 12 (page 117) to close the *Add Summation Field* dialog box.

Caption My Average Summation UDF	Data Type Numeric	Width 6	Decimals 3	Average: Structure P/S
7 Filters				
Search For Field Insulator P/S Uncompensated Insulator Shunt Reading Max P/S Miles Above Criteria Miles Below Criteria (IRF) Miles Polow Criteria (IRF) Miles Polow Criteria (IRF) Miles P/S Native P/S + 100 mV P/S Sample Time Pipeline Current Off - mV Drop Pipeline Current Off - mV Drop Pipeline Current On - mV Drop Structure IRF - Native P/S Structure IRF - Native P/S		× A	Operator © Average Count Latest Apply Fil Maximum O Minimum Sum	ters Prior To Aggregation
Brockure I/A Oncompensated     Structure P/S - Casing P/S     Structure P/S - Foreign P/S     Structure P/S - Structure IRF     Structure P/S - Structure IRF     Target Structure IRF     Uaget Structure IRF     Uaget Structure IRF     Uaget Structure P/S     Uaget Structure P/S     Leak Survey Maintenance Fields				

Figure 3-63. Summation Target Field

- **10** If you want to include one or more optional AND filters in the *Summation* UDF, complete the following steps. Data results produce a subset of records that meet *all* filter conditions included in the filter group.
  - **a** Click the **Filters** button to open the *Filters* panel.
  - Click () New 'And' Group to open the filter properties group box (Figure 3-64, page 116).
  - c Type a name for the filter group in the field Filter Group Caption.
  - **d** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
  - e If you want to set up additional filter criteria, click **Add** to display an additional set of filter selection fields. Select a PCS Axis field, operator, and one or more filter conditions to set up filter criteria.
  - **f** Repeat **step 10 b** through **e** as needed. When you finish, click the **rilters** button to close the *Filters* panel. Then continue with **step 12** (page 117).

aption /ly AVG Structure P/S Summation UDF	Data Type Numeric	Width 6	Decimals 3	Average: Structure P
7 Filters				① New 'And' Group   ② New 'Or' Gro
Filter Group Caption     AC IRF     Sexpecte	ed, but not recorded *			×10 ×
earch For Field Min P/S Native P/S Native P/S + 100 mV P/S Sample Time Pipeline Current Off Pipeline Current Off - mV Drop Pipeline Current On - mV Drop Structure IRF Structure IRF - Native P/S Structure IRF - Native P/S Structure IRF - Native P/S Structure P/S - Casing P/S Structure P/S - Casing P/S Structure P/S - Structure IRF Structure IRF Structure IRF - Structure IRF Structure IRF		×	<ul> <li>Average</li> <li>Count</li> </ul>	Apply Filters Prior To Aggregation

Figure 3-64. New 'And' Filter

- **11** If you want to include one or more optional OR filters in the *Summation* UDF, complete the following steps. Data results produce a subset of records that meet *any* filter condition(s) included in the filter group.
  - **a** Click the **V Filters** button to open the *Filters* panel.
  - **b** Click **(())** New 'Or" Group to open the filter properties group box (Figure 3-65).
  - **c** Type a name for the filter group in the field **Include records that match any of these conditions**.
  - **d** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
  - e If you want to set up additional filter criteria, click **Add** to display an additional set of filter selection fields. Select a PCS Axis field, operator, and one or more filter conditions to set up filter criteria.
  - **f** Repeat step 11 b through e as needed (page 116). When you finish, click the**Filters** button to close the *Filters* panel. Then continue with step 12.

**12** Click **Save** and then the close button **solution** to close the *Add Summation Field* dialog box.

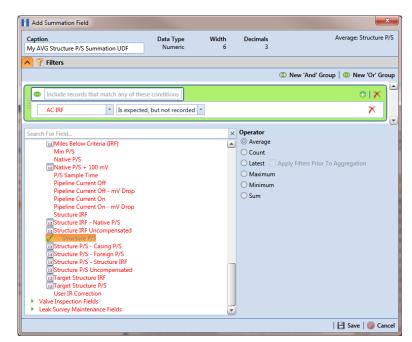


Figure 3-65. New 'Or' Filter

### Editing a Summation User Defined Field

When you want to edit a *Summation* UDF previously added in PCS Axis, follow these steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 71).
- 2 Double-click **Facility Surveys** > **Common to All Facilities** in the *Properties* panel. Then click **Permanent Information** to display a grid with fields and property settings common to all facilities (Figure 3-61, page 113).

**NOTE:** Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

3 Select the Summation UDF you want to edit in the grid of the Field and UDF Customizations window. Then navigate to the grid column labeled System-User Defined Summation Definition and click the ... ellipsis button Figure 3-66).

				rts / Graphs Tools	Field Computer	Help 😲	PCS Axis				Welcome Joh	nn Smith   😢   🔀 Lo
eld a	and U[	OF Cu	ustomizations ×									
						🕀 🗿 Norm	al   🔲 Calculate	ed   👰 Milepo	st   🗃 Picklist   囁 Or	n/Off Pair   置	Summation	🕻 Delete   🥍 Custom
		ılt	System - Default Uppercase	System - Default Minimum Range	System - Default Maximum Range	System - Range Checking	System - Default Value	System - Unit Of Measure	System - Calculation Expression	System - Filter Operator	System - Automatically Add As Filter	System - User Defined Summation Definition
			N/A	N/A	N/A	No	N/A		N/A	N/A	No	
			No	N/A	N/A	N/A			N/A	N/A	No	
			N/A	N/A	N/A	N/A	N/A		N/A	N/A	No	
			N/A		N/A	N/A	N/A		N/A		No	
			N/A	N/A	N/A	N/A	N/A		N/A		No	
			N/A	-90.00000000	90.0000000				N/A		No	
			No	N/A	N/A	N/A			N/A	N/A	No	
			No	N/A	N/A	N/A			N/A	N/A	No	
Properties			No	N / A	N/A	N/A			N/A	N/A	No	
per			N/A	-180.00000000	180.0000000	Yes			N/A	N/A	No	
Pr			N/A	N/A	N/A	No	N/A		N/A	N/A	No	
	•		N/A	N/A	N/A	No	N/A			N/A	No	Average: Struct
			N/A	N/A	N/A	No	N/A		N/A	N/A	No	2
			N/A	N/A	N/A	No	N/A		N/A	N/A	No	
			No	N/A	N/A	N/A	N/A		N/A	N/A	No	
			N/A	N/A	N/A	No	N/A		N/A	N/A	No	
			N/A	N/A	N/A	No	N/A		N/A	N/A	No	
			N/A	N/A	N/A	N/A			N/A	N/A	No	
			No	N/A	N/A	N/A			N/A	N/A	No	
			No	N/A	N/A	N/A	N/A		N/A	N/A	No	
			Yes	N/A	N/A	N/A			N/A	N/A	No	
			No	N/A	N/A	N/A			N/A	N/A	No	

Figure 3-66. System-User Defined Derivation Definition

- **4** When the dialog box *Edit Summation Field* opens, change UDF settings as needed, such as selecting a different *target field* in the list of fields in the selection panel or a different *Operator* option (Figure 3-67).
- If the Summation UDF includes filter settings you want to change, click the
   Filters button to open the Filters panel and make changes as needed.
   Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

6 Click **Save** to save settings and return to the *Field and UDF Customizations* window.

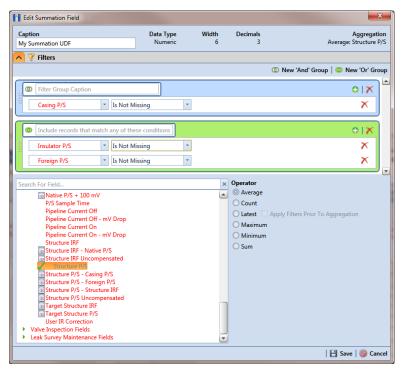


Figure 3-67. Edit Summation

# Using an Application Scheme

An application scheme is a group of named property settings that change the overall appearance of the PCS Axis interface. Currently PCS Axis only provides a default application scheme which cannot be customized (*Tools > Application Schemes*). Future software enhancements will allow you to create application schemes for customizing the PCS Axis interface, such as choosing a different color scheme.

### Choosing a Printer for PCS Axis

PCS Axis uses your computer's default printer to print reports and graphs. If a color printer is available, you may want to print graphs on a color printer. If you need to add or set up a local or network printer, contact your company's network administrator or IT department for assistance.

# Working with Pipeline Series

Information in this section explains how to work with *Pipeline Series*. Topics include those in the following list:

- About Pipeline Series
- Adding and Applying Pipeline Series (page 121)

### **About Pipeline Series**

When a discontinuity occurs in a pipeline, use *Pipeline Series* to adjust facility numbers on the pipeline. A discontinuity typically occurs when an extension is added to the pipeline; the pipeline is re-routed; or when a company designates two pipelines as parallel lines. Instead of physically renumbering pipeline location numbers on-site, *Pipeline Series* allows you to shift pipeline numbering in PCS Axis using *Relative Milepost* locations.

A *Pipeline Series* is an ordered list of milepost locations with a starting milepost and an ending milepost that serve as connectors to preceding and subsequent *Pipeline Series*. All *Pipeline Series* snapped end to end map the pipeline. Multiple connected *Pipeline Series* form a *Pipeline Series* chain.

Additional characteristics of Pipeline Series include those in the following list:

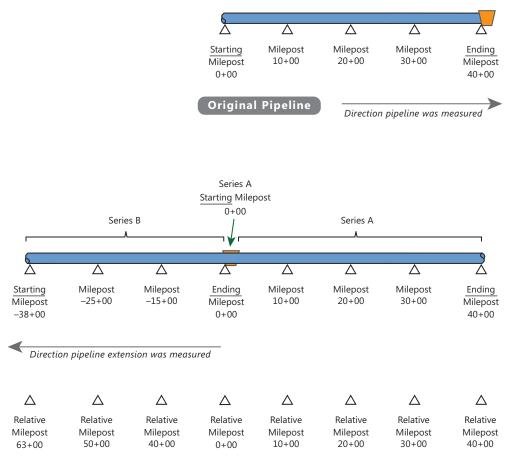
• All facilities on the pipeline must be assigned to a *Pipeline Series* when a *Pipeline Series* is used with a segment of the same pipeline. An entire pipeline can be made up of several *Pipeline Series*.

The starting milepost of a *Pipeline Series* corresponds to the starting milepost for a segment of the pipeline. The ending milepost of the *Pipeline Series* corresponds to the ending milepost for the same segment of pipeline. Each *Pipeline Series* joins together, end-to-end, to make up the entire pipeline. *Pipeline Series* defines each segment and is then used to calculate the *Relative Milepost*.

- A pipeline with several different numbering schemes can be converted into a sequential line using a *Pipeline Series* for each segment of the pipeline. This allows you to graph the entire distance of the pipeline using the *Relative Milepost*.
- *Pipeline Series* supports negative milepost locations. This helps identify milepost locations that are in an opposite direction of other milepost locations in a series.
- Red facility records in a data entry grid identify milepost numbers that require a *Pipeline Series* be applied to the record.

# Adding and Applying Pipeline Series

The procedure in this section describes how to add a *Pipeline Series* definition and then apply it to effected milepost numbers in a facility data entry grid. The example in the procedure adds a pipeline extension with negative milepost locations as shown in the following example (Figure 3-68).



**NOTE:** In the example above, PCS Axis calculates relative milepost 40+00 as the end of Series A and the beginning of Series B.

Figure 3-68. Example of an Extended Pipeline with Mileposts Set in Reverse Order

To add and apply a Pipeline Series, follow these steps:

1 Click the Select ROWs button P to open the Select ROWs window (Figure 3-69). Select one or more pipeline segments with facilities you want to work with, then click Save to close the window.

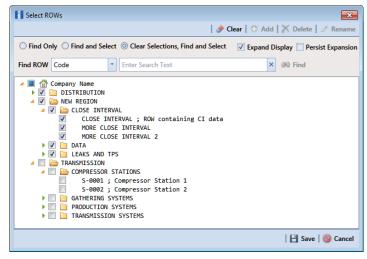


Figure 3-69. Select ROWs

- 2 Select the PCS Axis module you want to work with, such as the CPDM module. Click Modules > Cathodic Protection Data Manager (CPDM).
- **3** Click **Data Entry** > **Pipeline Series** to open the *Pipeline Series* window (Figure 3-70).

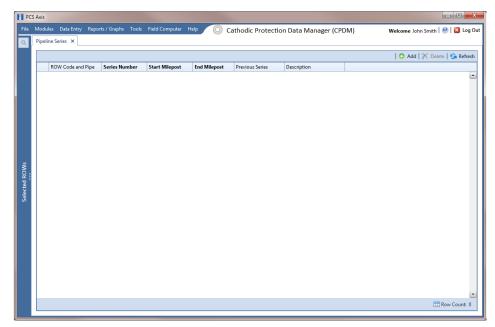


Figure 3-70. Pipeline Series

4 Click **•** Add and then select the *ROW Code* and *Pipe* you want to work with in the dialog box that opens (Figure 3-71).

Â	Select Right Of Way O	Code And Pipeline	×
	ROW Code	Pipe	
۲	SG456-E	1	·
	VB123-B	1	
			-
			Row Count: 2
		💾 Sa	ave   🚳 Cancel

Figure 3-71. Select Right Of Way Code And Pipeline

- 5 Click Save to display required field(s) for data entry. Required fields are identified with the sicon, such as *Series Number, Start Milepost*, and *End Milepost* in the next figure (Figure 3-72).
- **6** Type a unique identifier for the *Pipeline Series* in the **Series Number** field. This field accepts up to 10 alphanumeric characters including spaces and special characters, such as a hyphen (–) or pound sign (#).
- 7 Set the *Pipeline Series* start and end milepost numbers. Type the starting milepost in the **Start Milepost** field and the ending milepost in the **End Milepost** field.

The starting milepost of the *Pipeline Series* corresponds to the starting milepost for a segment of the pipeline. The ending milepost of the *Pipeline Series* corresponds to the ending milepost for the same segment of pipeline.

Add Record			×
ROW Code and Pi	pe SG456-E		-
Series Number	8		
Start Milepost	8		
End Milepost	8		
		💾 Save	🛛 🚳 Cancel

Figure 3-72. Add Record

- 8 Click **Save** to close the dialog box and add the record in the *Pipeline Series* grid.
- **9** If you want to add a description or other type of information for the Pipeline Series, type the information in the **Description** field. This field supports up to 30 alphanumeric characters.
- **10** If you want to add another *Series*, complete the following steps to create a pipeline *Series* chain (Figure 3-73):
  - a Repeat **step 4** through **step 9** to add another Series.
  - **b** Click the down arrow in the **Previous Series** field and select the *Series* that precedes the currently selected series.
  - c Repeat **step 10** to add additional *Series* in the chain as needed.

**NOTE:** PCS Axis uses the preceding *Series* of each *Series* in a chain to calculate the *Relative Milepost*. All *Series* in a chain except the first *Series* require that you identify the *Previous Series* (Figure 3-73).

The following example illustrates a pipeline *Series* chain with two *Series* in the chain (Figure 3-73). *Series A* was added for the original pipeline segment with a start and end milepost of 0+00 and 40+00 respectively. *Series B* was added for a pipeline extension. Because the mileposts are in reverse order in *Series B*, the *Pipeline Series* is set up with a start and end milepost of -38+00 and 0+00 respectively. Also see Figure 3-71 (page 123) for an illustration of a pipeline *Series* chain with calculated *Relative Mileposts*.

								1	🗛 Add 📘	🗙 Delete	Rof
ROW Code and Pipe	Series Number	Start Milepost	End Milepost	Pr	evious Series		Description		0.0011	, same i ,	
SG456-E	A	0+00	40+00				NE Paddock Section	1			
VB123-B	В	-15+00	-38+00	SO	6456-E - A	*	NE Paddock Section	2			
					ROW Code an	Series Number	Start	End			
				•	SG456-E	A	0+00	40+0			
					VB123-B	В	-15+00	-38+0	00		
										•	
										.::	

Figure 3-73. Pipeline Series

**11** Click the **x** close button to close the *Pipeline Series* window.

When a message similar to the following example displays, click **V OK** to apply pipeline *Series* to effected mileposts (Figure 3-74).

The following message displays to notify you of the facilities that need to have pipeline *Series* applied in the facility data entry grid. Red facility records in the data entry grid identify milepost numbers that require a pipeline *Series* applied to the record.

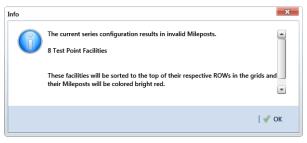


Figure 3-74. Pipeline Series Message

The remaining steps explain how to apply pipeline *Series* to effected mileposts in a data entry grid.

**12** Open the data entry grid with the mileposts you want to apply pipeline *Series*, such as the *Test Point Inspection* data grid shown in the next example (Figure 3-75, page 126).

**NOTE:** Red facility records in the data grid identify milepost numbers that require a *Pipeline Series* applied to the record.

**13** Select the **Series** field for a facility record in the grid to display a drop-down arrow. Click the arrow and select a pipeline *Series* in the selection list. Repeat this step for each effected facility record in the data grid.

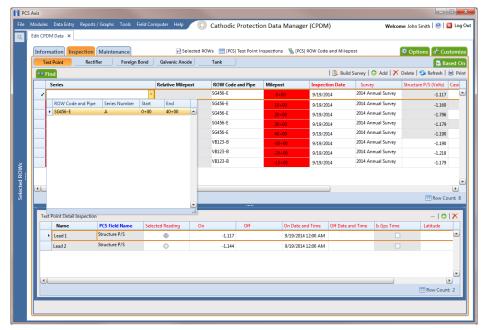


Figure 3-75. Pipeline Series

#### 14 Click 🔄 Refresh to update data in the grid.

PCS Axis automatically calculates the *Relative Milepost* for each facility record assigned a pipeline *Series* in the data entry grid. In the following example, PCS Axis calculates relative milepost 40+00 as the end of *Series A* and the beginning of *Series B*. (Figure 3-76).

st Point	Rectifier Foreig	n Bond Galvanic Ano						_	
		darvanie vino	ode Tank			1.0	1.0.100		Based
ind							/   🔿 Add   🗡 Dele		18
	Relative Milepost		Milepost	Inspection Date		Structure P/S (Volts)			
	0+00		0+00	9/19/2014	-	-1.117	-0.760	jsmith	
1	10+00		10+00	9/19/2014		-1.160		jsmith	
<b>L</b>	20+00		20+00	9/19/2014		-1.796	-0.773	jsmith	
<b>L</b>	30+00		30+00	9/19/2014	2014 Annual Survey	-1.179		jsmith	
ι	40+00	SG456-E	40+00	9/19/2014	2014 Annual Survey	-1.190	-0.685	jsmith	
3	63+00	VB123-B	-38+00	9/19/2014	2014 Annual Survey	-1.190		jsmith	
3	50+00	VB123-B	-25+00	9/19/2014	2014 Annual Survey	-1.218		jsmith	
3	40+00	VB123-B	-15+00	9/19/2014	2014 Annual Survey	-1.179		jsmith	
								E Row	Count
t Point Detail In	spection							- 10	017
Name	PCS Field Name	Selected Reading	On	Off	On Date and Time	Off Date and Time	Is Gps Time	Latitude	
Lead 1	Structure P/S	0	-1.117		9/19/2014 12:00 AM				- l
Lead 2	Structure P/S	0	-1.144		9/19/2014 12:00 AM				
	Series	Series         Relative Milepost           0-00         0-00           0-00         20-00           20-00         30-00           0-00         40-00           50-00         50-00           0-00         40-00           0-00         50	Series         Relative Milepost         ROW Code and Pipe           0-00         SG456 E           10:00         SG456 E           20:00         SG456 E           30:00         SG456 E           40:00         SG456 E           63:00         VB123-8           50:00         VB123-8           40:00         VB123-8           40:00         VB123-8           40:00         VB123-8           40:00         VB123-8           Ventility         Ventility           Ventility         Ventility           Ventility         Ventility           Ventility         Ventility           Ventility         Ventility	Series         Relative Milepost         ROW Code and Pipe         Milepost           0 + 00         SG456 - E         0 + 00           10 + 00         SG456 - E         10 + 00           20 + 00         SG456 - E         20 + 00           30 + 00         SG456 - E         30 + 00           40 + 00         SG456 - E         30 + 00           40 + 00         SG456 - E         40 + 00           50 + 00         VB123 - B         - 38 + 00           50 + 00         VB123 - B         - 25 + 00           40 + 00         VB123 - B         - 15 + 00	Series         Relative Milepost         ROW Code and Pipe         Milepost         Impection Date           0+00         56456-E         0+00         9/19/2014           10+00         56456-E         10+00         9/19/2014           20+00         56456-E         20+00         9/19/2014           30+00         56456-E         20+00         9/19/2014           30+00         56456-E         30+00         9/19/2014           40+00         56456-E         30+00         9/19/2014           40+00         56456-E         40+00         9/19/2014           5         50+00         VB123-B         -38+00         9/19/2014           40+00         VB123-B         -35+00         9/19/2014           40+00         VB123-B         -15+00         9/19/2014	Series         Relative Milepost         ROW Code and Pipe         Milepost         Impection Date         Survey           0 -00         SG456 E         0 -00         9/19/2014         2014 Annual Survey           10 -00         SG456 E         10 -00         9/19/2014         2014 Annual Survey           20 -00         SG456 E         10 -00         9/19/2014         2014 Annual Survey           30 -00         SG456 E         20 -00         9/19/2014         2014 Annual Survey           30 -00         SG456 E         30 -00         9/19/2014         2014 Annual Survey           40 -00         SG456 E         30 -00         9/19/2014         2014 Annual Survey           50 -00         VB123 - 8         -38 -00         9/19/2014         2014 Annual Survey           50 -00         VB123 - 8         -35 +00         9/19/2014         2014 Annual Survey           40 +00         VB123 - 8         -15 +00         9/19/2014         2014 Annual Survey           velocit         VB123 - 8         -15 +00         9/19/2014         2014 Annual Survey           Survey	Series         Relative Milepost         ROW Code and Pipe         Milepost         Inspection Date         Survey         Structure P/S (Volts)           4         0 + 00         S6456-E         0 + 00         9/19/2014         2014 Annual Survey         -1.117           4         10 + 00         S6456-E         10 + 00         9/19/2014         2014 Annual Survey         -1.117           4         20 + 00         S6456-E         20 + 00         9/19/2014         2014 Annual Survey         -1.159           4         20 + 00         S6456-E         20 + 00         9/19/2014         2014 Annual Survey         -1.159           4         40 + 00         S6456-E         30 + 00         9/19/2014         2014 Annual Survey         -1.159           5         S9 + 00         V8122-8        38 + 00         9/19/2014         2014 Annual Survey         -1.139           4         40 + 00         V8122-8        25 + 00         9/19/2014         2014 Annual Survey         -1.139           4         40 + 00         V8122-8        35 + 00         9/19/2014         2014 Annual Survey         -1.139           4         40 + 00         V8122-8        15 + 00         9/19/2014         2014 Annual Survey         -1.117	Series         Relative Milepost         ROW Code and Pipe         Milepost         Inspection Date         Survey         Structure P/S (Volts)         Casing P/S (Volts)           0<00	Series         Relative Mileport         ROW Code and Pipe         Mileport         Impection Date         Survey         Structure P/S (Volt)         Casing P/S (Volt)         Technician           0<00

Figure 3-76. Relative Milepost

# Working with a User Defined Module

If you need to manage compliance data for facility types not included in PCS Axis, use Custom Module Management (CMM) to add a user defined module. For example, adding a user defined module with user defined facility types allows you to manage compliance data for major components associated with a cathodic protection electrical system or a gas odorization system.

**IMPORTANT:** PCS Axis supports up to ten (10) user defined modules with each module supporting up to ten (10) user defined facility types.

CMM is an optional add-on feature that requires an activation key for operation. If your company has purchased the CMM module, use the information in this section to set up a user defined module with user defined facility types. Topics in this section include those in the following list:

- Understanding a User Defined Module (page 128)
- Adding a User Defined Module (page 130)
- Deleting a User Defined Module (page 134)

# Understanding a User Defined Module

A user defined module (UDM) provides the same features and functions as a system installed module. It is available for use throughout PCS Axis, such as the *Modules*, *Data Entry*, and *Reports/Graphs* menus; *Field and UDF Customizations*, *Bridge*, and *Email Notification*.

Likewise, the following features provided with a system installed module are also provided with a user defined module: *Information, Inspection,* and *Maintenance* data entry grids; layout, sorting, and filter themes; reports and graphs; and optional routes, schedules, and scheduling types for user defined facility types.

The process for adding a user defined module includes the following tasks (Figure 3-77):

- Add a user defined module with user defined facility type(s) in Custom Module Management (*Modules > Custom Module Management*).
- Add one or more user defined fields (UDFs) as needed to be used throughout the
- system, such as data entry grids, reports, and graphs (*Tools* > *Field and UDF Customizations*).
- Set up data entry grids (*Data Entry* > *Edit* <*module* > *Data*); reports and graphs (*Reports/Graphs*); scheduling (*Data Entry* > *Edit Schedule Settings* and *Define Schedules*); and routes (*Data Entry* > *Define Routes*).

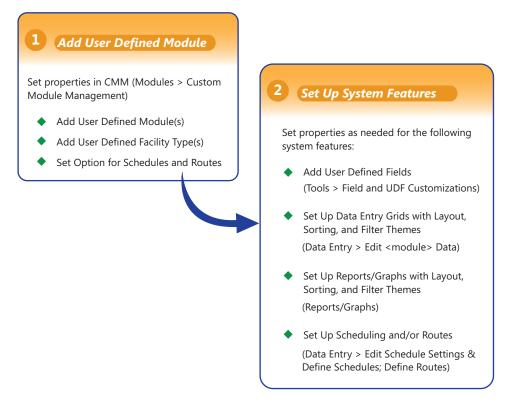


Figure 3-77. Workflow for Adding a User Defined Module

# Adding a User Defined Module

Information in this section explains how to add a user defined module with one or more user defined facility types. A user defined module supports up to six (6) user defined facility types.

Complete the following steps:

1 Click **File** > **Select ROWs** to open the *Select ROWs* window (Figure 3-78). Select one or more pipeline segments and then click **Save** to close the window.

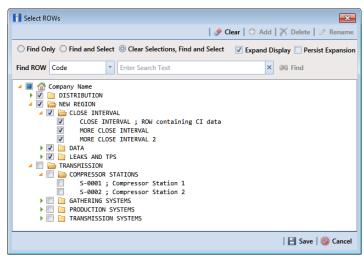


Figure 3-78. Select ROWs

 Open CMM and add a user defined module. Click Modules > Custom Module Management > Add Module (Figure 3-79).

PCS Axis adds a group of fields for the new user defined module. Fields with an error icon  $\infty$  indicate a required data entry field.

PCS Axis	A DECEMBER OF THE OWNER	
File Modules Data Entry Reports / Graphs Tools F	ield Computer Help 🔅 PCS Axis	Welcome John Smith   🥹   🔀 Log Out
Custom Module Management ×		
		🛛 😋 Add Module   💾 Save
▼ (j) It appears that you have some invalid options, ple	ase correct the following (2)	
Name	Acronym C	olor
Facilities		
Name	ons, please correct the following (3) Long Name Short Name	
	8	
Is Schedulable 🔲 Is Routable		
L		

Figure 3-79. Custom Module Management

- **3** To set *Name*, *Acronym*, and *Color* properties for the user defined module, follow these steps (Figure 3-80):
  - **a** Type a name in the **Name** field. The field accepts up to 50 alphanumeric characters including spaces and special characters.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays information related to required property settings.

- **b** Type an acronym in the **Acronym** field. This field accepts up to four (4) alpha characters. It does not support numeric or special characters.
- c Click the down arrow in the **Color** field and select a color in the color palette.

The following example shows a user defined module with the following property settings: module name is *My CP Electrical System*, module acronym is *MCPE*, and module color is *Aquamarine*.

PCS Axis		
File Modules Data Entry Reports / Graphs Tools F	ield Computer Help 🔅 PCS Axis	Welcome John Smith   😣   🔀 Log Out
Custom Module Management 🗙		
Name My CP Electrical System Salities TO I Rappears that you have some invalid opting Name B Schedulable Is Routable	Acronym MCPE ws. please correct the following (3) Long Name Short Name	Color

Figure 3-80. Custom Module Management

- **4** To set properties for one or more user defined facility types, complete the following steps (Figure 3-81):
  - **a** Type a name in the **Name** field. The field accepts up to 30 alphanumeric characters including spaces and special characters. The name you provide appears in data entry grids, reports and graphs, scheduling, routes, and so on.
  - **b** Type a longer name for the user defined facility in the **Long Name** field. This field accepts up to 40 alphanumeric characters including spaces and special characters.
  - **c** Type an acronym for the user defined field in the **Short Name** field. The field accepts up to four (4) alpha characters. It does not support numeric or special characters.
  - **d** If you want the facility type available for selection when setting up a schedule, click the check box **Is Schedulable**. Likewise, click the check box **Is Routable** to have the facility type available for selection when setting up a route.

The following example shows a user defined module with user defined facility types labeled *Electric Meters*, *Transformers*, *Power Poles*, and *Circuit Breakers* (Figure 3-81).

S Axis			
Modules Data Entry Reports / Grap	hs Tools Field Computer Help	😳 PCS Axis	Welcome John Smith   🕑   🔀 L
tom Module Management 🗙			
			🛛 🗘 Add Module
Name		Acronym	Color
My CP Electrical System		MCPE	
Facilities			
Name Electric Meters	Long Name	Short Name	
	Electric Meters	EM	X
✓ Is Schedulable ✓ Is Rout	able		
Name	Long Name	Short Name	
Transformers	Transformers	TSFR	X
📝 Is Schedulable 📝 Is Rout	able		
Name	Long Name	Short Name	
Power Poles	Power Poles	PWRP	x
✓ Is Schedulable ✓ Is Rout	able		<b>^</b>
Name	Long Name	Short Name	
Circuit Breakers	Circuit Breakers	CB	
✓ Is Schedulable ✓ Is Rout	able		
S Schedulable M IS Rout			

Figure 3-81. Custom Module Management

- **e** To add another user defined facility type, repeat **step 4 a** through **d**. You can add up to six (6) user-defined facility types for each user defined module.
- f Click 💾 Save.

**NOTE:** Clicking the **C** close icon in the group box of user defined facility types closes the group box. Use this feature when you only want to view property settings of user defined modules. To re-open the group box, click the *P* open icon.

- **5** Click  $\times$  to close the *Custom Module Management* window.
- 6 Set up the following system features as needed:
  - **a** Add fields related to the user defined module in *Fields and UDF Customizations > Facility Surveys*. Refer to *Setting Properties in Field and UDF Customizations* (page 67).
  - **b** Set up data entry grid *Layouts*, *Sorts*, and *Filters*. Refer to *Working with Themes and Filter Groups* (page 316).
  - c Set up reports and graphs. Refer to Using Reports and Graphs (page 709).
  - **d** Set up scheduling and routes. Refer to *Using a Schedule* (page 453) and *Using a Route* (page 381).

# Deleting a User Defined Module

Deleting a user defined module also deletes all user defined facility types, reports, graphs, schedules, routes, and facility data associated with the module.

To delete a user defined module, follow these steps:

1 Click File > Select ROWs to open the *Select ROWs* window (Figure 3-82). Select one or more pipeline segments and then click **Save** to close the window.

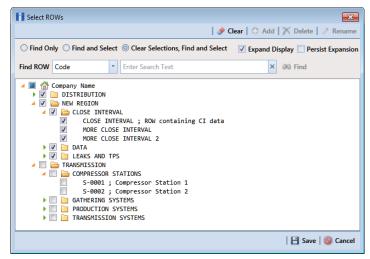


Figure 3-82. Select ROWs

- 2 Open CMM. Click Modules > Custom Module Management.
- Click the X delete button for the user defined module you want to delete (Figure 3-83).

om Module Management 🗙		🛛 🕄 Add Module 🛛
		Add Module   🗄 3
		I O I
Name	Acronym	Color Delete Module
My CP Electrical System	MCPE	
Name	Acronym	Color
My Gas Odorization System	MGOS	·
/ Facilities		
7 (raciities)		

Figure 3-83. Custom Module Management

- 4 When the warning message *Confirm module delete* opens, click **➤ Delete** to delete the module or **S Cancel** to cancel the operation.
- **5** Click  $\times$  to close the *Custom Module Management* window.

# Notes


# Working with Pipeline Records

This chapter explains how to work with folders and pipelines in the system hierarchy tree. The information is intended for users with *SysAdmin* user permissions unless noted otherwise.

Topics in chapter include those in the following list:

- Adding a Folder in the Hierarchy (page 140)
- Adding a Pipeline in the Hierarchy (page 141)
- Moving and Renaming a Pipeline (page 144)
- Deleting a Pipeline (page 145)
- Understanding Default Location Formats (page 146)
- Selecting a Default Location Format (page 149)
- Adding a Pipeline Information Record (page 151)
- Adding a Pipeline Maintenance Record (page 154)
- Attaching a Document to a Pipeline Record (page 158)
- Working with Themes and Filter Groups (page 167)
- Filtering Data in a Grid (page 183)

# Adding a Folder in the Hierarchy

The hierarchy is an organizational structure of one or more folders. Folders are organized in a tree structure based on the number of hierarchy levels set up in the system. The top level of the hierarchy is the root level that identifies your company's name. All hierarchy folders are added below the root level. The lowest level of the hierarchy includes a folder with pipelines added in the system (Figure 4-1, page 140).

**NOTE:** The names of hierarchy folders as well as *ROW Code* and *ROW Name* support up to 100 characters.

To add a folder in the hierarchy, follow these steps:

1 Click File > Select ROWs to open the Select ROWs window (Figure 4-1).

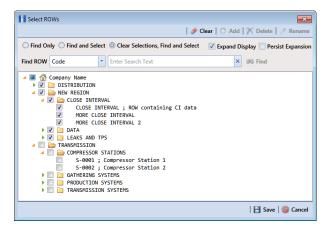


Figure 4-1. Select ROWs

- 2 Select a level in the hierarchy to which you want to add a folder.
- 3 Click 🛟 Add to open the Add New Node dialog box (Figure 4-2, page 141).

**NOTE:** You can also open the *Add New Node* dialog box by right-clicking a selection in the hierarchy tree and selecting *Add* in the shortcut menu that opens.

4 Add information for the new hierarchy folder. Fields requiring information include a Sicon, such as *System* and *ROW Code* shown in the next figure.

- **5** Click the option **Expand After Adding** if you want to expand the selection tree after clicking *Apply*.
- 6 Click Apply. Repeat step 3 through step 5 as needed to add additional folders in the hierarchy tree.

Add New Node	<b>×</b>
Region	TRANSMISSION
System	8
ROW Code	8
ROW Name	
	Expand After Adding
	🛃 Apply   🚫 Cancel

Figure 4-2. Add New Node

#### Adding a Pipeline in the Hierarchy

To add a pipeline in the hierarchy, follow these steps:

1 If the Select ROWs window is not open, click File > Select ROWs (Figure 4-3).

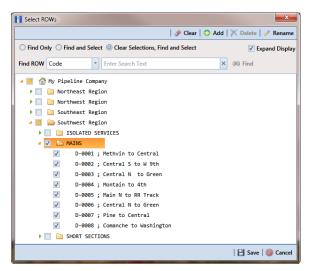


Figure 4-3. Select ROWs

**2** Select a folder in the hierarchy you want to add a pipeline. In the following example, another pipeline will be added in the *Mains* folder.

**3** Click **•** Add to open the *Add New Node* dialog box (Figure 4-4). Right-clicking the selected hierarchy folder and selecting *Add* in the shortcut menu also opens the *Add New Node* dialog box.

Add New Node		x
Region	Southwest Region	
System	MAINS	
ROW Code	8	
ROW Name		
	Expand After Adding	
	🛃 Apply 📔 🎯 Can	cel

Figure 4-4. Add New Node

**4** Enter a pipeline code for the new pipeline in the **ROW Code** field. Fields requiring information include a <sup>∞</sup> red icon, such as *ROW Code* in the previous figure (Figure 4-4).

**NOTE:** The names of hierarchy folders as well as *ROW Code* and *ROW Name* support up to 100 characters.

- 5 Type a name for the pipeline in the **ROW Name** field.
- **6** Click the option **Expand After Adding** if you want to expand the selection tree after clicking *Apply*.
- 7 Click Apply. Repeat step 2 through step 6 as needed to add another pipeline in the selected hierarchy folder.
- **8** Continue with *Understanding Default Location Formats* (page 146) for information about setting this required field for all pipelines in the system.

# Using Find in Select ROWs

Use the Find drop-down list in the *Select ROWs* window when searching for a particular pipeline segment in the hierarchy. The Find drop-down list includes the following options for locating and selecting a pipeline segment in the hierarchy:

- **Code:** searches the hierarchy by ROW Code.
- Name: searches the hierarchy by ROW Name.
- **Code and Name:** searches the hierarchy by ROW Code and Name. Using this option requires that you include the semi-colon separator between the ROW Code and ROW Name, *such as LG123A*; *NE Paddock LG123*.

To search the hierarchy for a particular pipeline segment in the *Select ROWs* window, follow these steps:

1 Click File > Select ROWs to open the Select ROWs window (Figure 4-5).

Select ROWs		<b>—</b> ×
ا ا	🕨 Clear   🛟 Add	🔭 Delete   🧷 Renam
$\odot$ Find Only $\bigcirc$ Find and Select $\bigcirc$ Clear Selections, Find and	Select	🗹 Expand Displa
Find ROW Code	×	00 Find
My Pipeline Company		
Northeast Region		
Northwest Region		
🕨 🔲 🎦 Southeast Region		
🕨 📄 🎦 Southwest Region		
		🛛 🖃 Save 🛛 🚳 Cance
		i 🖬 save i 😈 cano

Figure 4-5. Select ROWs

- 2 Choose an option in the *Find Now* drop-down list to search for a pipeline segment in the hierarchy. Click the down arrow in **Find ROW** and select **Code**, **Name**, or **Code and Name**.
- **3** Based on the selected search option, type the *ROW Code*, *ROW Name*, or the *ROW Code and Name* of the pipeline segment in the field **Enter Search Text**.
- 4 Select one of the following options to choose how search results are handled: Find Only, Find and Select, Clear Selections, Find and Select. Hovering the mouse over an option displays a tooltip with a description of option.

- **5** Click the check box **Expand Display** if you want PCS Axis to expand the hierarchy when a search match is located.
- 6 Click 🚳 Find.

## Moving and Renaming a Pipeline

Complete the following steps to move or rename a pipeline in the hierarchy:

1 If the *Select ROWs* window is not open, click **File** > **Select ROWs** and then select a pipeline in the hierarchy (Figure 4-6).

Select ROWs	×		
🤣 Clear   😳 Add   🏋 Delete   🖉 Rename			
○ Find Only ○ Find and Select ◎ Clear Selection	ns, Find and Select 📝 Expand Display		
Find ROW Code	× ØØ Find		
🔺 📃 🕋 My Pipeline Company			
🕨 🥅 📔 Northeast Region			
🕨 📄 🎦 Northwest Region			
🕨 📄 🛅 Southeast Region			
🔺 📃 🔚 Southwest Region			
ISOLATED SERVICES			
🔺 🔲 🔚 MAINS			
D-0001 ; Methvin to Centr	ral		
D-0002 ; Central S to W 9	9th		
✓ D-0003 ; Central N to Gr			
D-0004 ; Montain to 4th	Add		
D-0005 ; Main N to RR Tra	ac 🥜 Rename		
D-0006 ; Central N to Gre			
D-0007 ; Pine to Central	Cut Cut		
D-0008 ; Comanche to Wash	hi 🗋 Paste 🖇		
Image:	× Delete		
	Save Save Cancel		

Figure 4-6. Move Pipeline

- 2 To move the selected pipeline to a different hierarchy folder, right-click the pipeline and select **Cut** in the shortcut menu that opens. Right-click the hierarchy folder you want to move the pipeline to and then select **Paste** in the shortcut menu that opens (Figure 4-6).
- **3** To rename the selected pipeline, follow these steps:
  - a Click *P* **Rename** to open the *Rename* dialog box (Figure 4-7). Right-clicking the selected pipeline and selecting *Rename* in the shortcut menu also opens the dialog box.

Rename R	light Of Way	
Region	Southwest Region	
System	MAINS	
ROW Code	D1234	
ROW Name	Central N to Green	
		🛃 Save 🛛 🔞 Cancel

Figure 4-7. Rename Pipeline

**b** Type a name for the pipeline in the pipeline *Code* field. In the following example, *D-1234* has been entered in the *ROW Code* field. Click **Save** to apply the change and close the dialog box.

## **Deleting a Pipeline**

The procedure in this section explains how to delete a pipeline in the hierarchy. Deleting a pipeline also deletes all facilities and history records associated with the pipeline.

**IMPORTANT:** Instead of deleting a pipeline, consider creating a new hierarchy folder labeled *Sold*, *Abandoned*, or something similar and then moving the pipeline to that folder. Another option is to change the operational status of the pipeline by disabling the *Active* check box in *Edit ROW Detail* (Data Entry > Edit ROW Detail). Using either of these methods will preserve data for future references.

To delete a pipeline, follow these steps:

1 Click **File** > **Select ROWs** to open the *Select ROWs* window. Select a pipeline in the hierarchy you want to delete (Figure 4-8).

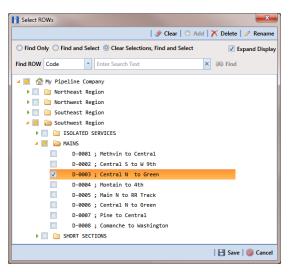


Figure 4-8. Select ROWs

2 Click X Delete to open the *Confirm Delete* dialog box (Figure 4-9, page 146). Or, right-click the selected pipeline in the hierarchy tree and select Delete in the shortcut menu to open the *Confirm Delete* dialog box.

**NOTE:** The *Confirm Delete* dialog box identifies the pipeline and number of associated facilities to be deleted in the *Count* column (Figure 4-9, page 146).

3 Click  $\bigwedge$  **Delete** to delete the pipeline or  $\bigotimes$  **Cancel** to cancel the operation.

â	Confirm Delete		3		
R	ROW : D-0003 ; Central N to Green				
If you delete this ROW, these Facilities will also be deleted:					
	Facility	Count			
۲	Test Point	26	÷		
C	Delete this ROW?				
🗡 Delete   🚳 Cancel					

Figure 4-9. Confirm Delete

#### **Understanding Default Location Formats**

The following table (Table 4-1) identifies milepost formats available for selection when setting the *Default Location Format* for a pipeline in *Edit ROW Detail*. Choosing a *Default Location Format* allows PCS Axis to automatically apply the correct formatting to milepost values you enter for a facility location on a pipeline.

Location Format	Format Example	Description
Metric Milepost	1.234AB, 1,234AB, or 1+234AB	Measurements are in metrics. This format can include two alpha characters at the end of the milepost and can also be graphed. Measurements are in kilometers and meters. Based on the metric delimiter set in system <i>Options</i> , this format supports a Period, Comma, or Plus sign. For example, 1.234AB is 1 kilometer (km) and 234 meters (m).
Milepost (3 Decimals)	12345.567	Format supports two alpha characters at the end of the milepost and can also be
	-or- 1234.567AB	graphed. This format uses the U.S. Standard measurement system.
Milepost (4 Decimals)	123.5678	Format supports one alpha character at the end of the milepost and can also be
	-or-	graphed. This format uses the U.S.
	1234.5678A	Standard measurement system.
Reading Number	12345678AB	This is an alphanumeric format with support for two alpha characters at the end. It is typically used for stations. The format also uses the U.S. Standard measurement system.
		This format cannot be graphed and the <i>CP Compliance Report</i> does not calculate total feet, total miles, or miles below criteria.

#### Table 4-1. Description of Default Location Formats

Location Format	Format Example	Description	
Location ID	1234567891 -or-	<b>Note:</b> Location ID cannot be changed once it is set up.	
	ABCDEFGHIJ	Use <i>Location ID</i> when footages are not applicable. This format is typically used in distribution systems. Other features include those in the following list:	
		<ul> <li>Uses the U.S. Standard measurement system; accepts alphanumeric characters; and cannot be graphed.</li> </ul>	
		• <i>CP Compliance Report</i> does not calculate total feet, total miles, or miles below criteria when using this format.	
Station Number	12345+67AB	Measurements are in feet. This format can be graphed; supports two alpha characters at the end of the milepost; and uses the U.S. Standard measurement system.	
Miles+100 Feet	12345+12 -or- 12345+12AB	Format uses miles plus two digits to the right to indicate hundreds of feet. For example, 110+12 indicates 110 miles and 1,200 feet. Do not enter values greater than 53 feet; doing so indicates another mile.	
		Other characteristics include:	
		• Format can be graphed.	
		• Two alpha characters can be used after the first 3 numbers.	
		• <i>CP Compliance Report</i> does not calculate total feet, total miles, or miles below criteria.	
		<ul> <li>Uses the U.S. Standard measurement system.</li> </ul>	

Table 4-1.	Description	of Default	Location	Formats
------------	-------------	------------	----------	---------

Location Format	Format Example	Description
Miles/Station Number	123A 45+67	Format uses Miles <space>Station</space>
	-or-	Number with Milepost (3 Decimals) in graphs. This format uses the U.S.
	123A 12+34	Standard measurement system.

Table 4-1. Description of Default Location Formats

#### Selecting a Default Location Format

Information in this section explains how to set up *Default Location Format* and other pipeline information. A *Default Location Format* must be set for each pipeline added in the system hierarchy. See *Understanding Default Location Formats* (page 146) for information about available formats.

Complete the following steps:

1 Click File > Select ROWs to open the Select ROWs window (Figure 4-10).

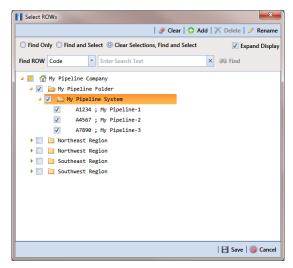


Figure 4-10. Select ROWs

- 2 Select one or more pipelines and then click 💾 Save to close the window.
- **3** Click **Data Entry** > **Edit ROW Detail** to open the *Edit ROW Detail* window (Figure 4-11, page 150).

	PCS Axis	ules Data Entry	Reports / Graphs T	ools Field	Computer Help	🗘 PCS Ax	ic.		Welcome John		
F	_	ROW Detail ×				G FC3 A	15		welcome john	smith   🕑   🖬	, Log o
	In	formation Ma	intenance		[PCS]	ROW Information	K [PCS] ROW Inform			ions 🦨 Cus	
		Find						10	Add 🔀 Delete	😘 Refresh   🕸	Print
		ROW Code	ROW Name	Pipe	Pipeline Name	Pipeline Size	Total Footage	Default Location Format	Surface Area	ROW Active	
		A1234	My Pipeline-1	1	A1234-1	24.000		Miles/Station Number	26534	V	ڪ
		A4567	My Pipeline-2	1	A4567-2	24.000		Miles/Station Number	512345	1	
		A7890	My Pipeline-3	1	A7890-3	12.000	72344	Metric Milepost	120324	1	
Click the Selected ROWs	Selected RUWs	Facility Location	D Formats							📰 Row Cou	
		Facility Typ									
		<ul> <li>Atmospher</li> <li>Coupon</li> </ul>	c Miles/Statio		Č.						4
		Foreign Bo									11
		Galvanic Ar									1
		Inhibitor In Leak Surve									-
		D	Milar /Chaklas	n Mirankar							1
									E	Row Count:	Z
											_

Figure 4-11. Edit ROW Detail

- 4 If you want to collapse the *Selected ROWs* panel to view more of the *Edit ROW Detail* grid, click **Selected ROWs**. To expand the panel, click **Selected ROWs** again.
- **5** Select a pipeline in the *Information* grid.
- 6 Select the field **Default Location Format** to display a drop down arrow. Click the arrow and select a location format in the selection list. (See *Understanding Default Location Formats* (page 146) for a description of available choices.)
- 7 Click 🔂 Add in the *Facility Location ID Formats* mini-grid. A list of all facility types display in the mini-grid with the location format selected in **step 6**. If you want to change the location format for a particular facility type listed in the mini-grid, follow these steps:
  - **a** Select a row of records in the mini-grid with the facility type you want to change the location format.
  - **b** Select the field **Facility Location Format** to display a drop down arrow. Click the arrow and select a location format in the selection list.

8 Set up other pipeline information as needed then click **S Refresh**. When you finish, click the **x** close icon to close the *Edit ROW Detail* window.

#### Adding a Pipeline Information Record

Use the *Information* grid in *Edit ROW Detail* to add an information record for a pipeline selected in the *Select ROWs* window. Adding an information record allows you to maintain history records when important permanent information changes, such as when a pipeline is taken out of service or is sold to another business.

**NOTE:** If you are working with the optional *Telluric Compensation* feature, the required field labeled *Telluric Compensation Required* must be added in the *Information* grid and enabled for each pipeline segment requiring telluric compensation. For more information refer to *Adding a Layout Theme* (page 168).

To add a pipeline information record, follow these steps:

1 Click the **Select ROWs** button *P* to open the *Select ROWs* window (Figure 4-12).

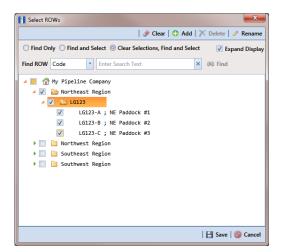


Figure 4-12. Select ROWs

2 Select one or more pipeline segments you want to work with by clicking the check box for each pipeline segment. Click 📑 Save to close the window.

**NOTE:** A check mark inside a check box indicates a selection. To clear a selection, click the check box again to remove the check mark. A shaded check box indicates selection of some, not all, child folders, ROWs, and pipelines.

**3** Open the *Edit ROW Detail* grid. Click **Data Entry** > **Edit ROW Detail** (Figure 4-13).

_	w Detail ×	tenance		🐨 💷 My Edi	it ROW Detail Lav	yout 1 🛚 🖏 My Edit R	OW Detail Sort Law	ut 1	Coptions	Le Custo	min
-	Find	itenance				2		-	d   📉 Delete   😏 F		
	ROW Code	ROW Name	Pipeline Name	Pipeline Size (Inches)	Total Footage (Feet)	Default Location Format	ROW Starting Milepost	ROW Ending Milepost	Surface Area	ROW Activ	e
•	LG123-A	NE Paddock #1	LG123A	12.00	23123	Station Number	0+00	0+50	513344	1	Ŀ
	LG123-B	NE Paddock #2	LG123B	24.00		Station Number	1+00	1+50	1523431	1	
		NE Paddock #3									
	LG123-C	NE Påddock +5	LG123C	12.00	513412	Station Number	2+00	2+50	5723452	V	
 •	LG123-C	NE Paddock +5	LG123C	12.00	513412	Station Number	2+00	2+50	5723452		•
	LG125-C	NE PADDOCK +5	LG123C	12.00	513412		2+00	2+50			
 •			10123C	12.00	513412	Station Number	2+00	2+50		E Row Count	• t: 3
 •	cility Location ID	Formats		12.00	513412		2+00	2+50			• t: 3
 •			ation	1200	513412		2+00	2+50		E Row Count	▶ t: 3

Figure 4-13. ROW Detail Information Grid

- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 If the *Information* grid is not visible, click the **Information** tab **Information**.
- 6 Click 🛟 Add to open the Add Record dialog box (Figure 4-14).

**HINT:** Alternatively, you can use a keyboard shortcut key to add records. Press **F4** to add an information record for an existing pipeline in the grid.

Î	Add Record		×
6	ROW Facility Compo	nent Information	
	ROW Code	Pipe	
F	LG123-A	1	
	LG123-B	1	
	LG123-C	1	
			-
			Row Count: 3
			💾 Save   🚳 Cancel

Figure 4-14. Add Record

- **7** Select the pipeline in the dialog box that you want to add an information record. For example, pipeline *IS-0767-01* is selected in Figure 4-14.
- 8 Click 💾 Save to display required field(s) for data entry (Figure 4-15).

Add Record	X
ROW Code	LG123-A
ROW Effective Date	2/6/2014 👻
	💾 Save   🚳 Cancel

Figure 4-15. Add Record

**9** Type a date in the **Effective Date** field using the format MM/DD/YYYY to indicate the month, day, and year. Or click the down arrow in the field and select a date using a calendar.

*Effective Date* is the date a history record becomes effective, such as when a pipeline becomes inactive or is taken out of service. See *Creating History Records Using an Effective Date* (page 245) for more information.

**10** Click **Save** to close the *Add Record* dialog box and add the new information record in the grid for the existing pipeline (Figure 4-15).

ormation M	aintenance		7	My Edit ROW D	etailLayout_1 🛚 📉	My Edit ROW Det	ail Sort Layout_1		Coptions		
Find								Add	🗙 Delete   😏 I	Refresh   😫	Pri
ROW Code	ROW Name	Pipeline Name	Pipeline Size (Inches)	Total Footage (Feet)	Default Location Format	ROW Starting Milepost	ROW Ending Milepost	ROW Effective Date	Surface Area	ROW Active	•
LG123-A	NE Paddock #1	LG123A	12.00	23123	Station Number	0+00	0+50		513344	V	l
LG123-A	NE Paddock #1	LG123A	12.00		Station Number	0+00	0+50	2/6/2014 -	513344	V	
					Charles All and a						
LG123-B	NE Paddock #2	LG123B	24.00		Station Number	1+00	1+50		1523431	$\checkmark$	
LG123-B LG123-C	NE Paddock #2 NE Paddock #3	LG123B LG123C	24.00		Station Number	1+00 2+00	1+50 2+50		1523431 5723452		
										V	
									5723452		Ľ
									5723452		Ľ
	NE Paddock #3				Station Number				5723452		: 4

Figure 4-16. ROW Detail Information Grid - New Record

- **11** Provide other pipeline data in the grid as needed, such as *Permanent Comments*.
- 12 Click 😏 Refresh to update the grid.

#### Adding a Pipeline Maintenance Record

Use the *Maintenance* grid in *Edit ROW Detail* to add a maintenance record for a pipeline selected in the *Select ROWs* window. Adding pipeline maintenance records allows you to examine the effectiveness of a maintenance program. You can either view data in the maintenance grid of *Edit ROW Detail* or run a ROW maintenance report.

To add a pipeline maintenance record, follow these steps:

- 1 Click the **Select ROWs** button *P* to open the *Select ROWs* window (Figure 4-12, page 151). Select one or more pipeline segments you want to work with by clicking the check box for each pipeline segment. Then click **Save** to close the window.
- 2 Open Edit ROW Detail. Click Data Entry > Edit ROW Detail (Figure 4-17).

		tion Mainten	nance		🍸 🔝 My Edi	it ROW Detail Lay	out_1 🛚 🛚 My Edit F	ROW Detail Sort Layo	-	Coptions 0		-
61	S Find	1								d   🏋 Delete   😏 I	Refresh   😫	F
	RO	W Code R	OW Name	Pipeline Name	Pipeline Size (Inches)	Total Footage (Feet)	Default Location Format	ROW Starting Milepost	ROW Ending Milepost	Surface Area	ROW Active	
	▶ LG1	123-A N	VE Paddock #1	LG123A	12.00	23123	Station Number	0+00	0+50	513344	V	
			VE Paddock #2	LG123B	24.00		Station Number	1+00	1+50	1523431	1	
	LG1	123-C N	VE Paddock #3	LG123C	12.00	513412	Station Number	2+00	2+50	5723452	$\checkmark$	
4.											Row Count	
										Ē	Row Count	:
	Facility	y Location ID For	mats							E		

Figure 4-17. Row Detail Information Grid

- **3** If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- **4** Click the **Maintenance** tab **Maintenance** to open the *Maintenance* grid (Figure 4-17).

Maintenance       Image: Second	Edit R	es Data Entry DW Detail ×	Reports / 0	Graphs Tools	Field Computer Help	PCS Axi	is			Wel	come John Smith   🖲	🔀 L
ROW Code         Pype         ROW Active         ROW Effective Date         ROW Repair Found Date         ROW Repair Found Date         ROW Repair Row Repair Row Repair         ROW Repair Row Repair Row Repair         ROW Repair Row Reference Number         ROW Repair Repair Row Repair Row Reference Number         ROW Repair Repair Row Repair Row Repair Row Reference Number         ROW Repair Repair Row Repair Row Reference Number         ROW Repair Repair Row Reference Number         ROW Repair Recented section A-25           LG123-A         1         Image: State	Info	rmation Ma	aintenance		5	🍸 📰 My Maintenan	ce Layout Theme	_1 🛚 📉 My Sorting	Theme_1		🛱 Options 🖌 Cu	uston
KWW code         Pipe         KWW Active         KWW Effective Late         KWW Repair Local         Found Date         Initiated Date         Corrected Date         KWW Reference number         KWW Reference number <th< th=""><th>8.5</th><th>Find</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>  🖸 Add  </th><th>🗙 Delete   😏 Refresh  </th><th>8</th></th<>	8.5	Find								🖸 Add	🗙 Delete   😏 Refresh	8
LG123-B 1 IO 10/15/2013 10/15/2013 10/15/2013 Ref#011323 Recoated section A-26		ROW Code	Pipe	ROW Active	ROW Effective Date	ROW Repair Code				ROW Reference Number	ROW Repair Remarks	
	•	LG123-A	1	V		10	9/10/2013	9/10/2013	9/10/2013	Ref#010123	Recoated section A-25	
		LG123-B	1	V		10	10/15/2013	10/15/2013	10/15/2013	Ref#011323	Recoated section A-26	
		LG123-C	1	1								

5 Click 🛟 Add to open the Add Record dialog box (Figure 4-14).

**HINT:** Alternatively, you can use a keyboard shortcut key to add records. Press **F4** to add a maintenance record for an existing pipeline in the grid.

1	Add Record		×	
6	ROW Facility Compo	nent Information		
	ROW Code	Pipe		
Þ	LG123-A	1	-	
	LG123-B	1		
	LG123-C	1		
				-
			Row Count: 3	
			💾 Save   🚳 Cance	ł

Figure 4-19. Add Record

- **6** Select the pipeline in the dialog box that you want to add an information record. For example, pipeline *IS-0767-01* is selected in Figure 4-14.
- 7 Click **Save** to display required field(s) for data entry (Figure 4-15). Required fields are identified with the Si icon, such as *ROW Repair Code*.

Add Record				×
ROW Code	IS-0767-01			
ROW Effective Date	3/3/2015	*		
ROW Repair Code	8			
ROW Repair Found Date	a/3/2015	-		

Figure 4-20. Add Record

- 8 Type a repair code in the field **ROW Repair Code**. Repair code is a designation used by your company to identify the type of repair. The field accepts up to 15 alphanumeric characters including special characters such as the pound sign (#), asterisk (\*), or hyphen (-).
- **9** Type a date in the field **ROW Repair Found Date** using the format MM/DD/YYYY to indicate the month, day, and year. Or click the down arrow in the field and select a date using a calendar.

Add Record	×
ROW Code	LG123-C
ROW Effective Date	-
ROW Repair Code	$\otimes$
ROW Repair Found Date	2/7/2014 -
	💾 Save   🚳 Cancel
Į	

Figure 4-21. Add Record

- **10** Click **Save** to close the *Add Record* dialog box and add a pipeline maintenance record in the grid (Figure 4-22).
- **11** Provide other maintenance data in the grid as needed. For example, provide a date in the fields *ROW Repair Initiated Date* and *ROW Repair Corrected Date*; a maintenance reference number in the field *ROW Reference Number*; and remarks about the repair in the field *ROW Repair Remarks*.
- 12 Click 😏 Refresh to update the grid.

nfor	mation Ma	aintenance		5	🍸 📰 My Maintenar	ce Layout Theme	_1 🛚 🐁 My Sorting	g Theme_1		🍄 Options 📌
86	Find								🗘 Add	🗡 Delete   😏 Refre
	ROW Code	Pipe	ROW Active	ROW Effective Date	ROW Repair Code	ROW Repair Found Date	ROW Repair Initiated Date	ROW Repair Corrected Date	ROW Reference Number	ROW Repair Remarks
	LG123-A	1	V		10	9/10/2013	9/10/2013	9/10/2013	Ref#010123	Recoated section A-2
	LG123-B	1	V		10	10/15/2013	10/15/2013	10/15/2013	Ref#011323	Recoated section A-
1	LG123-C	1	V		10	12/19/2013				

Figure 4-22. ROW Detail Maintenance Grid - New Record

# Attaching a Document to a Pipeline Record

Attaching a document to a pipeline record in *Edit ROW Details* is similar to attaching a document to a record in a data entry grid (page 340). Use the *Attached Document* field in the *Information* and *Maintenance* grid of *Edit ROW Details* to link or embed a file or webpage address to a pipeline record. Supported file types include image, video, HTML, XML, music, and text files (such as Microsoft Word, WordPad, Notepad, or PowerPoint files).

As an example, you can attach an image of a pipeline; a document describing your company's safety procedures; or a document identifying a manufacturer's specification for a piece of equipment.

Linking a document identifies the file location on a local computer, company network, FTP site, or webpage on the Internet. Linking documents stored on a local computer are accessible only from that computer. Embedding a document stores a copy of the file in the PCS Axis database.

**NOTE:** Storing copies of documents in the PCS Axis database increases the size of the database.

If the file type of an attached document is associated with a default software program on the local computer, you can preview the file in the *Preview Attached Documents* window. Additionally, clicking *Open* opens the attached document for editing or viewing purposes.

Editing an embedded document applies changes only to the copy stored in the PCS Axis database; changes do not apply to the source file stored outside of PCS Axis. Likewise, editing a source file applies changes only to the source file, not the copy stored in PCS Axis. Axis.

Topics in this section include those in the following list:

- Adding the Attached Document Field in the Grid
- Attaching a Document to a Pipeline Record (page 160)
- Viewing an Attached Document (page 165)

**Note:** For information about how to attach a document to a record in a data entry grid, *Using Data Entry Grids and Forms* (page 221).

#### Adding the Attached Document Field in the Grid

If the *Attached Document* field is not present in the *Information* or *Maintenance* grid of *Edit ROW Details*, complete the following steps to add the field:

- 1 Select one or more pipeline segments you want to work with in the *Select ROWs* window. Click easily save to close the window.
- 2 Click **Data Entry** > **Edit ROW Details** to open the *Edit ROW Detail* window (Figure 4-23).

nform	nation Maintena	ince		[PCS] ROW	V Information 🛛 [PCS] R	OW Information	🔅 OF	otions 🥜 Cu
ss Fi	nd						🛛 🔂 Add 🛛 📉 Delete	😘 Refresh
R	OW Code	ROW Name	Pipe	Pipeline Name	Pipeline Size (Inches)	Total Footage (Feet)	Default Location Format	ROW Active
• L	.G123-A	NE Paddock #1	1	LG123-A	12.00	3221234	Station Number	<b>V</b>
U	G123-B	NE Paddock #2	1	LG123B-2	6.00	655667	Station Number	$\checkmark$
	G123-C	NE Paddock #3	1	LG123C-3	12.00		Station Number	V
- D	G123-D	NE Paddock #4	1	LG123A-1	12.00	42311	Station Number	$\checkmark$
				111				TRow Co
				11				
	ity Location ID Form			11		]		
Facil	Facility Type	Facility Location For	mat	11				
Facil	Facility Type Atmospheric	Facility Location For Station Number	mat	11				E Row Co
Facil	Facility Type Atmospheric Circuit Breakers	Facility Location For Station Number Station Number	mat	11				
Facil	Facility Type Atmospheric	Facility Location For Station Number	mat	11				
Facil	Facility Type Atmospheric Circuit Breakers Coupon	Facility Location For Station Number Station Number Station Number	mat	11				

Figure 4-23. Edit ROW Detail

- **3** If you want to collapse the *Selected ROWs* panel to view more of the *Edit ROW Detail* grid, click **Selected ROWs**. To expand the panel, click **Selected ROWs** again (Figure 4-23, page 159).
- **4** Based on the grid you want to add the *Attached Document* field, click the **Information** Information or **Maintenance** Maintenance tab if either of these grids is not visible.
- **5** Click the **Customize** tab **Customize** to view the *Layouts* page (Figure 4-24, page 160).
- **6** Choose a grid layout theme. Click the down arrow in **Select Layout Theme** and select a layout theme in the selection list.
- 7 Double-click **All Fields** in the left pane of the window to view a list of fields available for selection.

- 8 Add the field *ROW Attached Documents* in the layout theme. Double-click **ROW Attached Documents** in the left pane of the *Layouts* page to move it to the right pane. Add other fields as required. The layout theme includes all fields listed in the right pane (Figure 4-24).
- 9 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up or down button.
- **10** Click **P** Save and Close to save changes and return to the grid.

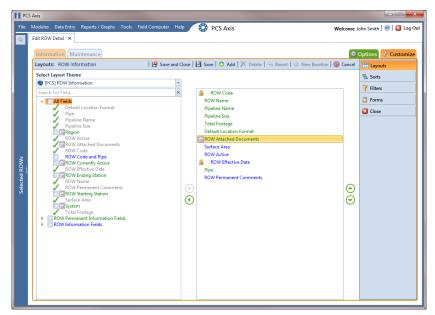


Figure 4-24. Layouts

#### Attaching a Document to a Pipeline Record

Complete the following steps to attach a document to a pipeline record in the *Information* or *Maintenance* grid of *Edit ROW Detail*:

- 1 Select one or more pipeline segments you want to work with in the *Select ROWs* window. Click **Save** to close the window.
- 2 Click **Data Entry** > **Edit ROW Detail** to open the *Edit ROW Detail* window (Figure 4-25).
- **3** If you want to collapse the *Selected ROWs* panel to view more of the *Edit ROW Detail* grid, click **Selected ROWs**. To expand the panel, click **Selected ROWs** again.

**4** If you want to attach a document to a pipeline record in the *Information* grid, click the **Information** tab if the grid is not visible.

To attach a document to a pipeline record in the *Maintenance* grid, click the **Maintenance** tab to display the *Maintenance* grid.

5 Click the edit icon *P* in the **ROW Attached Document** field for the pipeline record you plan to attach a document (Figure 4-25).

ľ –	t ROW	Detail ×									
I	nform	ation Main	tenance	My Inform	mation Grid Layo	ut Theme_1 🛚 🛚 🛚	My Information Grid Sorting	Theme_1	🛱 Opt	tions 🦨 Cust	tom
	ss Fir	nd						🔿 A	dd 🕅 📉 Delete	😏 Refresh   层	e) P
	R	OW Code	ROW Name	Pipeline Name	Pipeline Size (Inches)	Total Footage (Feet)	Default Location Format	ROW Attached Documents	Surface Area	ROW Active	
	⇒ t	G123-A	NE Paddock #1	LG123-A	12.00	3221234	Station Number	1 0	5124322		
	L	5123-В	NE Paddock #2	LG123B-2	6.00	655667	Station Number	Click	to edit attachmen	v z	
	L	5123-C	NE Paddock #3	LG123C-3	12.00	51527	Station Number	1			
	L	G123-D	NE Paddock #4	LG123A-1	12.00	42311	Station Number	1	127456	1	
	(				11						+
•					11					III Row Cour	
•		ity Location ID			II					III Row Cour —	
	Facil	Facility Type	Facility Local		II						
•	Facil	Facility Type Atmospheric	Facility Local Station Numb	ber	II						0
•	Facil	Facility Type	Facility Local Station Numb	ber ber	II						0
•	Facil	Facility Type Atmospheric Circuit Breake Coupon Electric Meter	Facility Local Station Numb station Numb station Numb s Station Numb	ber ber ber	1						0
	Facil	Facility Type Atmospheric Circuit Breake Coupon Electric Meter Foreign Bond	Facility Local Station Numb rs Station Numb Station Numb s Station Numb Station Numb	ber ber ber ber ber ber	1						0
ء ۳	Facil	Facility Type Atmospheric Circuit Breake Coupon Electric Meter	Facility Local Station Numb rs Station Numb Station Numb s Station Numb Station Numb	ber ber ber ber ber ber							•

Figure 4-25. Edit ROW Detail

- **6** When the *Maintain Attached Documents* dialog box opens, click **• Attach** and then select one of the following options (Figure 4-26, page 162):
  - **Link Document**: Select *Link Document* if you plan to link to a document on a local computer or company network, or want to add a link to a webpage on the Internet. Then continue with **step 7** (page 162) or **step 8** (page 163).
  - **Embedded Document**: Select *Embedded Document* if you want to store a copy of an attached document in the PCS Axis database. Then continue with **step 9** (page 164).

**NOTE:** Storing copies of attached documents in the database increases the size of the database.

- 7 If you selected *Link Document* in **step 6** and want to link to a file on a local computer or company network, follow these steps (Figure 4-26):
  - a Click the ellipsis button ... in the **Document** field to open the *Link File* dialog box. Then navigate to the file and select it. Click **Open** to link to the file and close the dialog box.
  - **b** Type a description for the linked file in the **Description** field of the *Maintain Attached Documents* dialog box. When a description is not provided, PCS Axis uses the filename of the linked document as the description.

**NOTE:** A list of attached documents display in the dialog box. Selecting an item in the list displays its location in the *Document* field.

		💾 Save and Close   💾 Save   🗡 Dele				
Link Document	Document					
Embedded Document	C:\Users\John.Smith\Desktop\My	Attached Document_4.pdf				
Description						
/ly linked document_4.						
Document	Document Type					
My Attached Document_1.pdf	Link					
My Attached Document_2.pdf	Link					
My Attached Document_3.pdf	Link					

Figure 4-26. Maintain Attached Documents

c Click **Save and Close** to save changes and close the dialog box. When the following message displays click **OK**:

Linked Document won't be replicated. Do you want to continue?

**NOTE:** Linked documents are not copied and stored in the PCS Axis database as noted in the previous message. To store a copy of an attached document in the database, use the *Embedded Document* option instead.

- **8** If you selected *Link Document* in **step 6** and want to add a link to a webpage on the Internet, follow these steps (Figure 4-27):
  - **a** Type an Internet address in the **Document** field. For example, type http://www.aiworldwide.com in the field.
  - **b** Type a description for the link in the **Description** field. When a description is not provided, PCS Axis uses the Internet address in the *Document* field as the description.

) Attach 🛛 🚳 Cancel 🗍		💾 Save and Close   💾 Save   🏹	Dele
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merican Innovations web	site.		
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Document	Document Type		
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My Attached Docu	Link		
My Attached Docu My linked docume	Link		
My linked docume	LINK		

Figure 4-27. Maintain Attached Documents

c Click **Save and Close** to save changes and close the dialog box. When the following message displays click **OK**:

Linked Document won't be replicated. Do you want to continue?

**NOTE:** Linked documents are not copied and stored in the PCS Axis database as noted in the previous message. To store a copy of an attached document in the database, use the *Embedded Document* option instead.

- **9** If you selected *Embedded Document* in **step 6**, complete the following steps (Figure 4-28):
  - **a** Click the ellipsis button ... in the **Document** field to open the *Embed File* dialog box. Then navigate to the file and select it. Click **Open** to embed a copy of the file and close the dialog box.
  - **b** Type a description for the embedded file in the **Description** field. If a description is not provided, PCS Axis uses the filename of the embedded file as the description.

**NOTE:** A list of attached documents display in the dialog box. Selecting an item in the list displays its location in the *Document* field.

Attach 🛛 🚳 Cancel		💾 Save and Close   💾 Save   🗡 De
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Embedded Document	My Embedded Document_2.png	
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Document	Document Type	
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My Attached Document_2.pd		
My Attached Document_3.pd		
My linked document_4.	Link	
American Innovations websit		
My Embedded Document_1.p	ng Embedded	

Figure 4-28. Embedded Document

c Click **Save and Close** to save changes and close the dialog box. When the following message displays click **OK**:

Local changes made to embedded documents won't be saved into PCS. Do you want to continue?

**NOTE:** Editing an embedded document applies changes only to the copy stored in the PCS Axis database; changes do not apply to the source file stored outside of PCS Axis. Likewise, editing a source file applies changes only to the source file, not the copy stored in PCS Axis.

#### Viewing an Attached Document

If the file type of an attached document is associated with a default software program on the local computer, you can preview the file in the *Preview Attached Documents* window. Additionally, clicking *Open* opens the attached document for editing or viewing purposes.

To view or open an attached document, follow these steps:

- 1 Select one or more pipeline segments you want to work with in the *Select ROWs* window. Click **Bave** to close the window.
- 2 Click **Data Entry** > **Edit ROW Detail** to open the *Edit ROW Detail* window (Figure 4-29).
- **3** If you want to collapse the *Selected ROWs* panel to view more of the *Edit ROW Detail* grid, click **Selected ROWs**. To expand the panel, click **Selected ROWs** again.
- 4 Open the grid that includes the pipeline record with the attached document by clicking either the **Information** Information or **Maintenance** tab.
- **5** Click the preview icon of for the pipeline record with the attached document you want to view.

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Γ	ROW Code	ROW Name	Pipeline Name	Pipeline Size (Inches)	Total Footage (Feet)	Default Location Format	ROW Attached Documents	Surface Area	ROW Active
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	LG123-B	NE Paddock #2	LG123B-2	6.00	655667	Station Number	1		
	LG123-C	NE Paddock #3	LG123C-3	12.00	51527	Station Number	1	Click to preview a 83426	
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Figure 4-29. Edit ROW Detail

- **6** Select a file in the list on the left side of the window to view the file in the *Preview Attached Documents* window (Figure 4-30).
- 7 If the file type of the attached document is associated with a default software program on the local computer, click *popen* to open the file.
- 8 Click the close button **Exercise** to close the *Preview Attached Documents* window.

**Note:** When you open and then edit an embedded document, changes apply only to the copy stored in the PCS Axis database; changes do not apply to the source file stored outside of PCS Axis. Likewise, editing the source file applies changes to the source file, not the copy stored in the PCS Axis database.

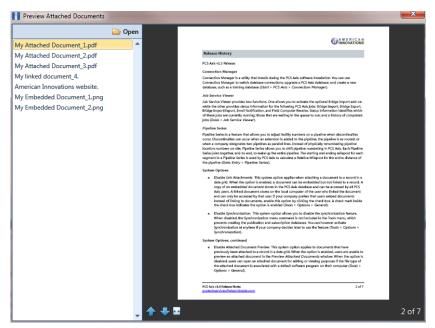


Figure 4-30. Preview Attached Documents

#### Working with Themes and Filter Groups

A theme is a group of named settings saved for later use, such as grid layout or sort theme. Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

Several installed themes are provided with the PCS Axis software installation. PCS Axis installed themes are public themes available to all PCS Axis users. These themes are identified with a globe icon and PCS in brackets [PCS], such as 😴 [PCS] ROW Information.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

A filter group is a named set of one or more filters that affect the data output in the *Edit ROW Detail* grid. PCS Axis provides two types of filter groups you can define. These include the AND and OR filter groups.

When you add a filter group, you define filter conditions that determine which records to include or exclude in the *Edit ROW Detail* grid. Adding an AND filter group produces a subset of records that meet all filter conditions. Adding an OR filter group produces a subset of records that meet any filter condition. When you apply a filter group to the grid, PCS Axis processes filters in descending order beginning with the filter at the top of the group.

The following sections describe how to add a layout theme, sort theme, and an optional filter group in the *Information* and *Maintenance* grids of *Edit ROW Detail*. Topics include those in the following list:

- Adding a Layout Theme
- Adding a Sort Theme (page 172)
- Adding an AND Filter Group (page 175)
- Adding an OR Filter Group (page 178)
- Editing and Arranging Filters and Filter Groups (page 180)

**NOTE:** Also see *Filtering Data in a Grid* (page 183) for information about filtering the data output in a data entry grid.

#### Adding a Layout Theme

A layout theme is a group of fields that determine which fields are available for use in the *Information* and *Maintenance* data grid of *Edit ROW Detail*. Adding a new *Layouts* theme allows you to choose which fields to include in the data grid and then save the layout as a theme for later use.

**IMPORTANT:** If you are working with the optional *Telluric Compensation* feature, you can add a layout theme that includes the required field *Telluric Compensation Required*. This field must be enabled in the *Information* data grid of *Edit ROW Detail* for each pipeline segment requiring telluric compensation.

To add a layout theme for the *Information* or *Maintenance* data entry grid in *Edit ROW Detail*, follow these steps:

1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 4-31).

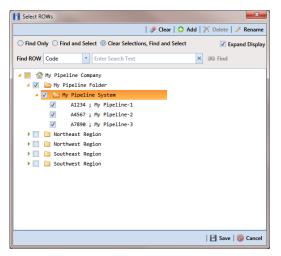


Figure 4-31. Select ROWs

- 2 Click Data Entry > Edit ROW Detail to open the *Edit ROW Detail* window. If you want to collapse the *Selected ROWs* panel to view more of the *Edit ROW Detail* grid, click Selected ROWs. To expand the panel, click Selected ROWs again (Figure 4-32, page 169).
- 3 To add a layout theme for the *Information* grid, click the **Information** tab <u>Information</u> if the grid is not visible. Click the **Maintenance** tab <u>Maintenance</u> to display the *Maintenance* grid if you want to create a layout theme for this grid.

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L	G123-B	NE Paddock #2	1	LG123B-2	6.00	655667	Station Number	V
L	G123-C	NE Paddock #3	1	LG123C-3	12.00	51527	Station Number	V
L	G123-D	NE Paddock #4	1	LG123A-1	12.00	42311	Station Number	V
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Figure 4-32. Edit ROW Detail

4 Click the **Customize** tab **Customize** then **Customize**

New Layout Theme	
Enter Theme Name:	
My Edit ROW Detail Information Layout_1	
Public 🔽 Copy Content	
Copy Fields From Theme:	
(PCS) ROW Information	-
Fields in the Selected Theme:	
ROW Code	•
ROW Name Pipe	
Pipeline Name	
Pipeline Size	
Total Footage	
Default Location Format ROW Effective Date	
ROW Active	
Surface Area	
ROW Permanent Comments	
	•
V OK 🛛 🎯 Can	cel

Figure 4-33. New Layout Theme

**5** Type a name for the layout theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

6 Select a layout theme with fields you want to copy to the new layout theme. Click the Copy Content check box and then click the down arrow in Copy Fields From Theme and select a theme in the selection list.

Information Maintenance	P Save and Close	🗄 Save   🗘 Add   🗡 Delete   🖘 Revert   🔅 N		Options of Cus
Select Layout Theme				Sorts
My Edit ROW Detail Information Layout_1	* ×			Y Filters
Search For Field	×	ROW Code ROW Name		D Forms
Default Location Format Pipe		Pipe Pipeline Name		Close
Presine Size     Provide Size     P	6		0	

**7** Click **V OK** to save changes and return to the *Layouts* page (Figure 4-34).

Figure 4-34. Layouts

- **8** Complete the following steps in the *Layouts* page to add and remove fields in the new layout theme as needed:
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ All Fields.
  - **b** Double-click a field listed in the left pane to move it to the right pane. Repeat this step as needed. The grid layout theme includes all fields listed in the right pane of the *Layouts* page.
  - **c** If telluric compensation is required for the selected pipeline segment(s), add the field labeled **Telluric Compensation Required** in the layout theme.
  - **d** To remove a field in the layout theme, double-click a field listed in the right pane to move it to the left pane. Repeat this step as needed.

**NOTE:** Fields with a lock icon **A** are required and cannot be removed from the theme, such as **B ROW Code** shown in the previous example (Figure 4-34, page 170).

- **10** Click **B** Save to save changes.
- **11** To apply the new layout theme to the data entry grid:
  - a Click the **Options** tab Options to open the options page (Figure 4-35).
  - **b** Click the down arrow in the field **Select Layout Theme** and select the new layout theme in the selection list.
  - c Click 💾 Apply to save changes and return to the data entry grid.

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Information Maintenance	🔅 Options 🖌 Customize
ROW Information	Apply Scancel
🗄 View	💿 🔠 Grid 🔘 🚨 Form 🔘 👫 Grid And Form
Select Layout Theme 🐨 My Edit ROW Detail Information Layout_1	<ul> <li>Select Sort Theme</li> <li>[PCS] ROW Information</li> </ul>
Select Form Theme	<ul> <li>Sort Dates</li> <li>Oldest First</li> <li>Newest First</li> </ul>
Options	
Only the most recent information record for each facility	
🝸 Filters	① New 'And' Group   ③ New 'Or' Group
Selected IOVS	
	X

Figure 4-35. Options

**12** If telluric compensation is required for the selected pipeline segment(s), click the **Telluric Compensation Required** check box for each pipeline segment requiring compensation.

A check mark inside the check box indicates the option is enabled. To disable the option, click the check box again to remove the check mark.

#### Adding a Sort Theme

A sort theme determines how PCS Axis sorts records in a data entry grid. Adding a sort theme allows you to choose which field(s) to sort records by and if records sort alphanumerically in ascending or descending order.

To add a sort theme, follow these steps:

- 1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 4-31, page 168).
- 2 Click **Data Entry** > **Edit ROW Detail** to open the *Edit ROW Detail* window (Figure 4-32, page 169).

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

- 3 To add a sort theme for the *Information* grid, click the **Information** tab Information if the grid is not visible. Click the **Maintenance** tab Maintenance to display the *Maintenance* grid if you want to create a sort theme for this grid.
- 4 Click the **Customize** tab *F* Customize then the **Sorts** button **Sorts** to open the *Sorts* page (Figure 4-36).

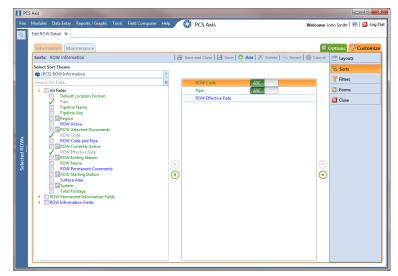


Figure 4-36. Sorts

5 Click 🛟 Add to open the New Sort Layout dialog box (Figure 4-37).

New Sort Theme	
Enter Theme Name:	
My Edit ROW Detail Sort Theme_1	
Public 🗹 Copy Content	
Copy Fields From Theme:	
S [PCS] ROW Information	•
Fields in the Selected Theme:	
ROW Code	
Pipe ROW Effective Date	
🗸 OK 🕴 🚳 Cano	el

Figure 4-37. New Sort Layout

**6** Type a name for the sort theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the sort theme saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

- 7 Select a sort theme with fields you want to copy to the new sort theme. Click the down arrow in **Copy Fields From Theme** and select a theme in the selection list.
- 8 Click **W** OK to save changes and return to the *Sorts* page (Figure 4-38, page 174).
- **9** Complete the following steps in the *Sorts* page to add and remove fields in the new sorting theme as needed:
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ All Fields.
  - **b** Double-click a field listed in the left pane to move it to the right pane. Repeat this step as needed. The sorting theme includes all fields listed in the right pane.
  - **c** If you want to remove a field in the sorting theme, double-click a field listed in the right pane to move it to the left pane. Repeat this step as needed.

- **10** Select a sorting method for each field listed in the right pane. To sort grid records in ascending order, click the toggle button to select **ASC ASC**. To sort in descending order, click the toggle button to select **DESC**.
- 11 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.

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	Surface Area					
	Total Footage					
	ROW Permanent Information Fields     ROW Information Fields					
	Ľ					

Figure 4-38. Sorts

- **12** Click **B** Save to save changes.
- **13** To apply the new sort theme to the data entry grid, follow these steps:
  - a Click the **Options** tab **Options** to open the options page (Figure 4-39, page 175).
  - **b** Click the down arrow in the field **Select Sort Theme** and select the new sort theme in the selection list.
  - c Click Apply to save and apply changes and then return to the data entry grid. To cancel changes, click the **Options** tab Options or **O** Cancel to return to the grid.

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Information Maintenance		🔅 Options 🗲 Custom
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Select Layout Theme 😡 My Edit ROW Detail Information Layout_1	<ul> <li>Select Sort Theme Select ROW Detail</li> </ul>	Sort Theme_1
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② Options		
Only the most recent information record for each facility		
🝸 Filters		O New 'And' Group O New 'Or' Group

Figure 4-39. Options

#### Adding an AND Filter Group

An AND filter group is a named set of one or more filters that affect the data output in the *Edit ROW Detail* grid. Adding an AND filter group produces a subset of records that meet all filter conditions. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an AND filter group, follow these steps:

- 1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 4-31, page 168).
- 2 Click **Data Entry** > **Edit ROW Detail** to open the *Edit ROW Detail* window (Figure 4-32, page 169).

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

- **3** Select the grid you want to work with by clicking the **Information** tab **Information** or the **Maintenance** tab **Maintenance**.
- 4 Click the **Customize** tab **Customize** then the **Filters** button **Filters** to open the *Filters* page (Figure 4-40, page 176).
- 5 Click () New 'And' Group to open the filter properties group box.

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Q	E	dit ROV	V Detail ×	
		Inform	mation Maintenance	ptions 🥜 Customize
		Filters:	: ROW Information 🛛 💾 Save and Close 🛛 💾 Save   🗠 Revert   🚳 Cancel	E Layouts
			New 'And' Group     Onew 'Or' Group	🛚 Sorts
		0	Filter Group Caption	<b>Filters</b>
			Default Location Format Contains [ ]	C Forms
		8	🗌 Filter Is Always On 🛛 🗙	🔀 Close
			Default Location Format + Contains +	
			Enter Custom Filter Caption	
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Figure 4-40. Filters

- 6 Type a name for the filter group in the field **Filter Group Caption**.
- **7** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- 8 If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the *Options* page using the filter's check box.
- 9 Type a name for the filter in the field **Enter Custom Filter Caption**.
- **10** If you want to set up additional filter criteria for the filter group:
  - a Click **C** Add to open another filter properties group box. Then click the dit icon to display selection fields.
  - **b** Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 7** through **step 9** to set up filter criteria.
- **11** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

12 Click 💾 Save.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **13** To apply one or more custom filter groups to the data entry grid of *Edit ROW Detail*, follow these steps (Figure 4-41, page 177):
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click the check box for each filter you want to apply.
  - c Click Apply to save changes and return to the data entry grid. To cancel changes, click the Options tab Options or O Cancel to return to the data entry grid.

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		ect Form Theme	*	Sort Dates	Oldest First Newest First	
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s		My AND Filter Group_1				•
Nov I		ROW Code Is Not Missing				
Selected ROWs		) My AND Filter Group_2				•
Sele		ROW is Active				
						*
						<u> </u>

Figure 4-41. Options

### Adding an OR Filter Group

An OR filter group is a named set of one or more filters that affect the data output of a report. Adding an OR filter group produces a subset of records that meet any filter condition. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an OR filter group, follow these steps:

- 1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 4-31, page 168).
- 2 Click **Data Entry** > **Edit ROW Detail** to open the *Edit ROW Detail* window (Figure 4-32, page 169).

**Note:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

- **3** Select the grid you want to work with by clicking the **Information** tab **Information** or the **Maintenance** tab **Maintenance**.
- 4 Click the **Customize** tab *F* **Customize** then the **Filters** button *Filters* to open the *Filters* page (Figure 4-42).
- 5 Click **(())** New 'Or' Group to open the filter properties group box.

	Data Entry Reports / Graphs Tools Field Computer Help 🔅 PCS Axis Welcome John V Detail ×	Smith   😢   🔀 Log
Info	Maintenance Ø Opt	tions 🥜 Customi
Filter	: ROW Information 🛛 😫 Save and Close 🛛 😫 Save   🗠 Revert   🎯 Cancel	Layouts
	💿 New 'And' Group   💿 New 'Or' Group 🛛	Sorts
	My Custom OR Filter Group_1	Filters
		Forms
-		Close
	ROW Code   Kinssing  Kinssing Kinssing  Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing Kinssing K	
	ROW Code Is Missing	

Figure 4-42. Filters

- **6** Type a name for the filter group in the field **Include records that match any of these conditions** (Figure 4-42, page 178).
- **7** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- 8 If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the *Options* page using the filter's check box.
- 9 Type a name for the filter in the field **Enter Custom Filter Caption**.
- **10** If you want to set up additional filter criteria for the filter group:
  - a Click 🛟 Add to open another filter properties group box.
  - **b** Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 7** and **step 8** to set up filter criteria.
- **11** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

#### 12 Click 💾 Save.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **13** To apply one or more custom filter groups to the data entry grid of *Edit ROW Detail*, follow these steps (Figure 4-43, page 180):
  - a Click the **Options** tab **Options** to open the options page.

- **b** Click the check box for each filter you want to apply.
- c Click Apply to save changes and return to the data entry grid. To cancel changes, click the Options tab Options or O Cancel to return to the data entry grid.

	Edit ROW Detail ×	
	Information Maintenance	omi
	ROW Information	anc
	😸 View 🖉 🔞 🖽 Grid 🔿 📮 Form 🛇 🖏 Grid Ar	d Fe
	Select Layout Theme 💿 My Edit ROW Detail Information Layout_1 🔹 Select Sort Theme 💿 My Edit ROW Detail Sort Theme_1 📼	
	Select Form Theme Sort Dates Oldest First Newest First	
	(2) Options	
	Only the most recent information record for each facility	
		Gro
	w My Custom OR Filter Group_1	
	ROW Code Is Missing	1
	e	9
1		

Figure 4-43. Options

#### Editing and Arranging Filters and Filter Groups

PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group. Filter groups are processed similarly. Information in this section explains how to edit filter property settings and how to arrange filters and filter groups.

Complete the following steps:

- 1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 4-31, page 168).
- 2 Click **Data Entry** > **Edit ROW Detail** to open the *Edit ROW Detail* window (Figure 4-32, page 169).
- **3** Select the grid you want to work with by clicking the **Information** tab **Information** or the **Maintenance** tab **Maintenance**.

- 4 Click the **Customize** tab **Customize** then the **Filters** button **Filters** to open the *Filters* page (Figure 4-44).
- 5 Click the edit icon *J* to display a filter's property settings.

File		Data Entry / Detail ×	Reports / Graph	; Tools	Field Computer	Help	0	PCS Axis	Welcome .	lohn Smith   🔨   🔀 Log
		nation Ma	aintenance						🔯	Options of Customiz
	Hiters:	KOW Infor	mation						Save and Close   Save   Kevert   Cancel O New 'And' Group   O New 'Or' Group	E Layouts
		My AND Fil Pipeline Siz	te (Inches) Does no	t equal '12					XI0	Filters Forms Close
ws		My OR Filte Pipe Is not ROW Nam	missing						•   <b>X</b>	
Selected ROWs		Pefault Lo	cation Format Is eq	ual to 'Stat	ion Number'					
ž										

Figure 4-44. Filters

- 6 To delete a filter in a filter group, click the filter's X delete button (Figure 4-45). Then click **√ Yes** when the *Delete* message displays.
- 7 To rename a filter, type a description in the filter's name field.
- **8** To change filter criteria, use filter selection fields to select a PCS Axis field, operator, and one or more filter conditions.
- 9 To enable a filter for all sessions of the data entry grid, click the check box Filter is Always On to place a check mark inside the check box. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- **10** Click the **X** close button to close the filter's property settings group box.

- **11** To move a filter to a different position in a filter group, or to move a filter group to a different position, follow these steps:
  - **a** Point the mouse at the handle  $\parallel$  of a filter or filter group to display a vertical resize cursor  $\hat{\parallel}$ .
  - **b** Drag and drop the filter or filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

**12** Click **P** Save and Close to save changes and return to the data entry grid.

PC:	S Axis		
File	Modules Data Entry Reports / Graphs Tools Field Computer Help OCS Axis	Welcome J	ohn Smith   🤨   🔀 Log Out
9	Edit ROW Detail ×		
	Information Maintenance	<b>*</b>	Options 🥜 Customize
	Filters: ROW Information 🛛 🔛 Save and Close 🛛 Save 🔄 Save 🖉 Save	t 🛛 🛞 Cancel	🖽 Layouts
	(1) New 'And' Group	New 'Or' Group	🛚 Sorts
	My AND Filter Group_2	0   X	T Filters
	Pipeline Size (Inches) Does not equal '12'		C Forms
	ROW is Active		Close
	My OR Filter Group_1	•   X	
s	Pipe Is not missing		
No ≈	ROW Name Is missing		
Selected ROWs	Filter Is Always On	×.	
Selev	ROW Name • Is missing •		: filter?
	🖉 Default Location Format Is equal to 'Station Number'		

Figure 4-45. Filters

### Filtering Data in a Grid

Information in this section explains how to filter the data output in any data entry grid in *Edit ROW Detail*. It includes a description of the options and filters available in the *Options* page when working with the *Information* and *Maintenance* grids. Filtering data allows you to work with only those records you are interested seeing in the grid.

Topics in this section include those in the following list:

- Filtering Data in the Information Grid
- Filtering Data in the Maintenance Grid (page 184)

#### Filtering Data in the Information Grid

To filter the data output in the *Information* grid of *Edit ROW Detail*, follow these steps:

- 1 Click Data Entry > Edit ROW Detail.
- 2 Click the **Information** tab Information, then the **Options** tab Options to open the *Options* page (Figure 4-46).

PCS Axis e Modules Data E	ntry Reports / Graphs	Tools Field Computer He	elp 🔘 P	PCS Axis	Welcome John Smith   😢 🛛 Lo
Edit ROW Detail	×				
Information	Maintenance				🔅 Options 🗲 Custom
ROW Informati	on				🖪 Apply   🛞 Cano
🔡 View					💿 🔠 Grid 🔘 📮 Form 🔍 🐂 Grid And Fo
Select Layout T	heme 💿 My Edit ROW I	Detail Information Layout_1	-	Select Soft meme	S My Edit ROW Detail Sort Theme_1
Select Form Th	eme		•	Sort Dates	Oldest First O Newest First
Options					
Only the mos	t recent information reco	rd for each facility			
🝸 Filters					New 'And' Group     Onew 'Or' Group

Figure 4-46. Options/Information Grid

**3** To include only the most recent information record for each pipeline, select the check box **Only the most recent information record for each facility**. This option uses the *Effective Date* to filter the data output.

**Note:** When using the *Filters* group box to apply additional filters to the data output, the most recent information record is found first, and then all other filters are applied to the data output. For more information about filters, see *Adding an AND Filter Group* (page 175) and *Adding an OR Filter Group* (page 178).

4 Click Apply to save and apply changes and then return to the *Information* grid. To cancel changes, click the **Options** tab Options or **O** Cancel to return to the grid.

#### Filtering Data in the Maintenance Grid

To filter the data output in the *Maintenance* grid of *Edit ROW Detail*, follow these steps:

- 1 Click Data Entry > Edit ROW Detail.
- 2 Click the **Maintenance** tab Maintenance, then the **Options** tab Options to open the *Options* page (Figure 4-47).

PCS	Axis	
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🛛 🎲 PCS Axis	Welcome John Smith   🕑   🔀 Log (
۹.	Edit ROW Detail 🗙	
	Information Maintenance	Options of Customize
	ROW Maintenance	Apply   S Cancel
		1 🖬 (444) 1 🖉
	🗑 View 💿	Grid 🔘 📮 Form 🔍 🛅 Grid And Forr
	Select Layout Theme 🐨 [PCS] ROW Maintenance Select Sort Theme 🐨 [PCS] ROW Maintence	-
	Select Taylout Theme Select Soft Theme	
	Options	
	The most recent maintenance after the filter criteria has been met     Filters     G	D New 'And' Group   🕐 New 'Or' Grou

Figure 4-47. Options/Maintenance Grid

- **3** Review the following descriptions and then select one or more filter options as required:
  - Only include facilities with maintenance during the reporting time period: The data output for this option only includes those maintenance records that meet the filter criteria defined for a particular date or date range. Filter criteria is defined by filter settings in the *Filters* group box for any of the following time period fields: *Effective Date, Repair Found Date, Repair Initiated Date,* and *Repair Corrected Date.*
  - All maintenance that meet the filter criteria: This option includes all maintenance records in the data output that meet filter criteria based on filter settings in the *Filters* group box.
  - Apply other filters to the most recent maintenance found within the report timeframe: This option finds the most recent maintenance record within the reporting time frame first, and then applies other filter settings to the data output. Filter criteria for both of these are defined in the *Filters* group box. Use any of the following fields when defining filter criteria for the reporting time frame: *Effective Date, Repair Found, Repair Initiated,* and *Repair Complete.*
  - The most recent maintenance after the filter criteria has been met: The data output for this option includes the most recent maintenance record only for those pipeline records that meet all other filter criteria first. Filter criteria for both of these are defined in the *Filters* group box. Use any of the following fields when defining a time period for the most recent maintenance record: *Effective Date, Repair Found, Repair Initiated,* and *Repair Complete.*

**NOTE:** For more information about filters, see *Working with Themes and Filter Groups* (page 167).

4 Click Apply to save and apply changes and then return to the *Maintenance* grid. To cancel changes, click the **Options** tab Options or **O** Cancel to return to the grid.

## Notes

# Setting Up User Management

This chapter explains how to work with PCS Axis user accounts in *User Management*. The information is intended for users with *SysAdmin* security permissions. Topics in this chapter include those in the following list:

- Understanding User Management
- Using Computer Name User Authentication (page 188)
- Adding and Editing Users (page 188)

### **Understanding User Management**

*User Management* controls system security using a role based method. Each PCS Axis user is defined in *User Management* and assigned a PCS Axis installed user role. A user role is a collection of security permissions that tells PCS Axis which system features a user has access to and if the user is allowed to add and edit data.

The following list identifies the three types of PCS Axis installed user roles. Each type gives users a different level of security permissions. Users are assigned only one user role. The *SysAdmin* user role has full control of all PCS Axis features and functions. For a list of user role permissions assigned to the *User* and *Read Only* user roles, see *Appendix C. System Security* (page 855).

- SysAdmin
- User
- Read Only

When PCS Axis first installs, it creates the first system account using *Computer Name* user authentication. This account is automatically assigned the *SysAdmin* user role, which has the highest set of privileges. See *Using Computer Name User Authentication* (page 188) for more information.

# Using Computer Name User Authentication

PCS Axis uses *Computer Name* user authentication when logging users in to the PCS Axis database. If more than one user will share a single computer installed with PCS Axis, contact your IT department for information about setting up the required Windows user accounts on the computer. Login credentials must be unique for each PCS Axis user. If needed, refer to Windows Help and Support (*Start > Help and Support*), or visit the Microsoft website at the following address to learn more about Windows user accounts:

http://windows.microsoft.com/en-US/windows7/User-accounts-recommended-links.

# Adding and Editing Users

Information in this section explains how to work with user accounts in User Management. The information is intended for the PCS Axis SysAdmin. Topics include those in the following list:

- Adding a New User (page 189)
- Editing an Existing User Account (page 190)
- Changing User Account Status from Active to Inactive (page 191)

### Adding a New User

To add a new user in PCS Axis, follow these steps:

- If PCAGE
   Notices Datasty Report / Graphs Tools Feld Comparts Mrg CC Axis
   Welcome both Smith P is a large OK

   If we have genered x
   If the energy Report / Graphs
   Memory Report
- 1 Click Tools > User Management > 🛟 Add (Figure 5-1).

Figure 5-1. Adding a New User

- 2 Type a user name in the **User Name** field and the user's email address in the **Email** field.
- **3** Complete the following steps as needed:
  - a Edit information in the fields First Name, Last Name and Display Name.
  - **b** Type information in the **Comment** field.
- 4 Select a PCS Axis user role by clicking the **Read Only**, **User**, or **SysAdmin** button. If needed, see *System Security* (page 855) for information about user role security permissions.
- **5** If you want to allow the user to create new facilities on the Allegro Field PC, click the check box **Can Create New Facilities On the Allegro**.

**NOTE:** Clicking the *Hierarchy Rights* bar collapses the *Hierarchy Rights* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

- **6** If you want to include an image in the user account, complete the following steps. Maximum image size is 150 x 150 (measured in pixels). Valid image formats are BMP, JPG, GIF, and PNG.
  - a Hover the mouse over the **Image** field to display a toolbar (XEEX EMA).
  - **b** Click the open icon in the image toolbar to open Windows Explorer. Locate and select an image, then click **Open** to close the window.
- If PCS Axis is set up with *Hierarchical Security* in *Options*, set permissions in **Hierarchy Rights** to identify which parts of the hierarchy the user will have access. This step applies only to users assigned with the *User* or *Read Only* user role. SysAdmin has full access to all items in the hierarchy.

To grant access, click the check box for an item in the hierarchy to place a check mark inside the check box. To remove access, click the check box again to remove the check mark. When you finish, click **Apply**. For information about *Hierarchical Security* in *Options*, see *Setting Security Options* (page 52).

**NOTE:** Items in the hierarchy with a check mark indicate the user has access. If a check mark is not present, the user does not have access.

8 Click 💾 Save to save changes.

### Editing an Existing User Account

Complete the following steps to edit an existing user account in *User Management*:

- 1 Click Tools > User Management (Figure 5-1, page 189).
- 2 Select a user record in the grid.
- **3** Change user information and *Hierarchy Rights* as needed. User information includes all fields, such as *Domain*, *User Name*, *Email*, *Display Name*, and so on.
- 4 Click **Bave** to save changes

### Changing User Account Status from Active to Inactive

If a user no longer requires access to PCS Axis, change the status of the user account in the following manner:

- **1** Click **Tools** > **User Management** (Figure 5-2).
- **2** Select a user record in the grid. PCS Axis indicates a selection by highlighting the record and displaying an arrow next to the Active property field.
- **3** Click the **Active** check box to remove the check mark and change the user account status from active to inactive.
- 4 Click **Save** to save changes.

The *Active* property setting changes from *Yes* to *No* indicating the user account is now inactive (Figure 5-2).

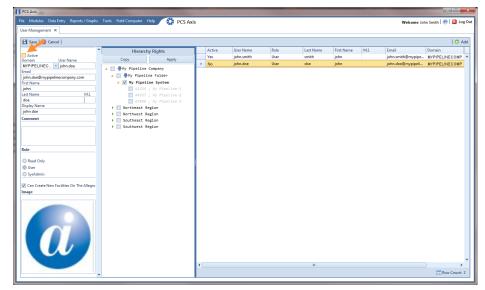


Figure 5-2. User Account Status

## Notes

# Using Survey Folder Maintenance

This chapter explains how to add, delete, and manage facility and continuous survey folders in *Survey Folder Maintenance*. The information is intended for users with *SysAdmin* security permissions unless noted otherwise. Topics in this chapter include those in the following list:

- *Working with a Facility Survey Folder* (page 193). Information applies to all modules except Indirect Survey Manager.
- *Working with a Continuous Survey Folder* (page 196). Information applies only to Indirect Survey Manager (ISM).

# Working with a Facility Survey Folder

A facility survey folder is a group of inspection readings in a facility survey. PCS Axis uses facility survey folders to organize and track facility survey data. Facility survey folders are used throughout PCS Axis, including data entry grids, reports, Bridge, and Field Computer. You can also use a facility survey folder as an optional filter in a grid or report to easily retrieve a specific set of inspection records.

Names of facility survey folders typically follow regulatory requirements for surveying pipeline segments and facilities. For example, when you create an annual survey folder labeled *2012 Annual Survey*, you can then assign inspection readings to the facility survey folder throughout the year as they are completed. Names of facility survey folders are editable allowing you to name a survey folder using a naming convention that best suits your business needs. Examples of typical survey folder names include *2012 Feb Monthly Survey* and *2001-2010 Ten Year Survey* (Figure 6-1, page 194).

Continue with the following topics for information about how to add, delete, and manage a facility survey folder:

- Adding a Facility Survey Folder (page 194)
- Deleting a Facility Survey Folder (page 195)
- Using a Facility Survey Folder (page 196)

### Adding a Facility Survey Folder

A facility survey folder is typically added in PCS Axis before entering inspection readings in a data entry grid or importing inspection readings using Bridge or Field Computer. Adding a survey folder requires that you enter a survey folder name; select a survey start date; and then select a survey frequency. Based on this information PCS Axis automatically calculates the survey end date.

If no survey folders exist when adding a new survey folder, PCS Axis names the survey folder using the current year, such as *2013 Annual Survey*. When other survey folders do exist, PCS Axis increments the year by 1. For example, if the latest annual survey folder is *2002 Annual Survey*, PCS Axis names the next new survey folder as *2003 Annual Survey*. Survey folder names are editable allowing you to name a survey folder based on your company's standards.

To add a survey folder, follow these steps:

1 Click **Data Entry** > **Survey Folder Maintenance** to open the *Survey Folder Maintenance* window (Figure 6-1).

				🗘 Add
Survey Name	Start Date	End Date	Survey Frequency	
2000 Annual Survey	01/01/2000	12/31/2000	12 Months	
2001 Annual Survey	01/01/2001	12/31/2001	12 Months	
2002 Annual Survey	01/01/2002	12/31/2002	12 Months	
2003 Annual Survey	01/01/2003	12/31/2003	12 Months	
2004 Annual Survey	01/01/2004	12/31/2004	12 Months	
2005 Annual Survey	01/01/2005	12/31/2005	12 Months	
2006 Annual Survey	01/01/2006	12/31/2006	12 Months	
2007 Annual Survey	01/01/2007	12/31/2007	12 Months	
2008 Annual Survey	01/01/2008	12/31/2008	12 Months	
2009 Annual Survey	01/01/2009	12/31/2009	12 Months	
2010 Annual Survey	01/01/2010	12/31/2010	12 Months	
2011 Annual Survey	01/01/2011	12/31/2011	12 Months	
2012 Annual Survey	01/01/2012	12/31/2012	12 Months	
2013 Annual Survey	01/01/2013	12/31/2013	12 Months	
2014 Annual Survey	01/01/2014	12/31/2014	12 Months	
2002 Tri-Annual Atmospheric Survey	01/01/2002	12/31/2004	3 Years	
2005 Tri-Annual Atmospheric Survey	01/01/2005	12/31/2007	3 Years	
2006 to 2008 Atmospheric Survey	01/01/2006	12/31/2008	3 Years	
2009 to 2011 Atmospheric Survey	01/01/2009	12/31/2011	3 Years	
2001 - 2010 Ten Year Survey	01/01/2001	12/31/2010	10 Years	

2 Click the 🛟 Add button to add a row in the grid.

Figure 6-1. Survey Folder Maintenance

- **3** If you want to rename the newly added survey folder, type a name in the **Survey Name** field.
- **4** Type the survey start date in the **Start Date** field. Or, click the down arrow in the field to choose a date using a calendar.

5 Select a survey frequency in the field Survey Frequency field. Click the field to display a drop-down arrow, then click the drop-down arrow and select an option in the selection list.

The new survey folder is now available for use in data entry grids, reports, Bridge, Field Computer, and as an optional filter selection. For more information, see *Using a Facility Survey Folder* (page 196).

### Deleting a Facility Survey Folder

Deleting a survey folder removes all references to the survey folder throughout PCS Axis. For example, when facility inspection records have been assigned to a survey folder you plan to delete, PCS Axis removes references to the survey folder for each inspection record assigned to the survey folder. Inspection records are not deleted however, only references to the survey folder are deleted.

Deleting a survey folder typically occurs when you want to clean up data that is no longer needed or when a survey folder has been created accidentally. A message displays listing all facility records assigned to the survey folder allowing you to either cancel the operation or delete the survey folder (Figure 6-2).

To delete a survey folder, follow these steps:

- Click Data Entry > Survey Folder Maintenance to open the Survey Folder Maintenance window (Figure 6-1, page 194).
- 2 Select a survey folder in the grid, then click the  $\mathbf{X}$  **Delete** button.
- When the *Delete* message displays, click Yes to delete the survey folder or
   No to cancel the operation (Figure 6-2).

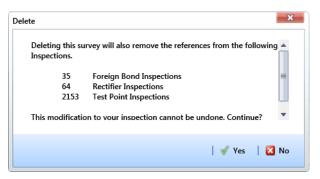


Figure 6-2. Example of Survey Folder Delete Message

### Using a Facility Survey Folder

You can assign inspection readings to a survey folder in any of the following areas of PCS Axis:

- *Inspection data entry grid.* Assign an inspection record to a survey folder using the *Survey* field in the *Inspection* data entry grid.
- *Bridge import file.* Use the options in the *Add Data Item* group box to assign inspection readings to an annual and/or periodic survey folder. PCS Axis assigns inspections to the appropriate survey folder based on the survey inspection date.
- *Receiving survey files from the Allegro.* Use the *Options* group box in the *Field Computer Receive Data* window to assign inspection readings to a survey folder. Choosing *Automatic Assignment* allows PCS Axis to assign inspections to the appropriate survey folder based on the survey inspection date.
- *Filter option in the Inspection data entry grid.* To view a set of inspection records for a particular survey in the *Inspection* data entry grid, select a survey folder option in the *Filters* group box of the *Customize Options* page.
- *Filter option in Reports*. To view a set of inspection records for a particular survey in a report, select a survey folder option in the *Filters* group box of the *Options* page.

# Working with a Continuous Survey Folder

A continuous survey folder is a container for a group of survey readings associated with a continuous survey, such as survey readings in a close interval (CI) survey or other type of above ground indirect survey. Continuous survey folders are used throughout PCS Axis when working with a data entry grid, report, or graph in the Indirect Survey Manager module. They allow PCS Axis to organize and track continuous survey readings.

Information in this section explains how to use the most common features of *Survey Folder Maintenance*. Topics include those in the following list. For information about other features, see *Working with Themes and Filter Groups* (page 203).

- Adding a Continuous Survey Folder
- Deleting a Continuous Survey Folder (page 201)
- Using a Continuous Survey Folder (page 203)
- Working with Themes and Filter Groups (page 203)

### Adding a Continuous Survey Folder

A continuous survey folder must first be added in *Survey Folder Maintenance* before working with survey readings in an ISM data grid, report, or graph. Adding a continuous survey folder includes the following tasks:

• Choosing the type of continuous survey, such as CIS, AC CIS, DCVG, ACVG, ACCA, Soil Resistivity, or Pearson.

For a description of the different types of continuous surveys supported in PCS Axis, see *Appendix B* (see page 845).

- Providing the survey start date and survey name. These property settings allow you to identify the correct survey folder when adding survey readings or working with reports and graphs in ISM.
- As an option, providing the name of the surveyor and/or the vendor performing the survey.

To add a continuous survey folder, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 6-3). Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

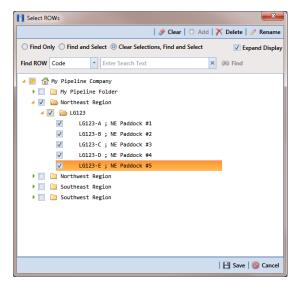


Figure 6-3. Select ROWs

- 2 Click Modules > Indirect Survey Manager (ISM) to open the ISM module.
- **3** Click **Data Entry** > **Survey Folder Maintenance** to open the *Survey Folder Maintenance* window (Figure 6-4).

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

			[PCS] CIS Surv	ey Folders 🛚 🗏 [	PCS] CIS Survey Fol	ders		<b>*</b> 0	ptions 🥜 Custe
	CIS	AC CIS	DCVG	ACVG	ACCA	Soil Resistivity	Pearson		
61	Find						<	🕽 Add   🗡 Delete	e   😘 Refresh   😓
	ROW Code and Pipe	Start Date	CI Survey Name	Surveyor	Survey Interval	Vendor	Station Number Minimum	Station Number Maximum	Number of Readings in Surve
	LG123-E	4/10/2013	LG123E May CIS 2013	jsmith	2.5	Smith CP Services	0+00	0+50	
	LG123-E	11/10/2013	LG123E Nov CIS 2013	jsmith	2.5	Smith CP Services	0+00	0+50	

Figure 6-4. Survey Folder Maintenance

- 4 Click a button labeled with the type of continuous survey that you want to add a survey folder. For example, clicking the CIS button cis adds a survey folder for close interval survey readings (Figure 6-4).
- 5 Click the Add button to open the Add Record dialog box (Figure 6-5, page 199).
- 6 Select the pipeline segment that you want to add a continuous survey folder. In the following example, pipeline segment *LG123-E* is selected.

A	Add Record		×
0	Close Interval In	spection Folder	
	ROW Code	Pipe	
	LG123-A	1	▲
	LG123-B	1	
	LG123-C	1	
	LG123-D	1	
Þ	LG123-E	1	
			¥
			Row Count: 5
			💾 Save   🚳 Cancel

Figure 6-5. Add Record

- 7 Click **Save** to display required fields for data entry. Required fields are identified with the **S** icon, such as *Start Date* and *CI Survey Name* in the next figure (Figure 6-6).
- 8 Type a survey start date in the **Start Date** field using the format MM/DD/YYYY to indicate the month, day, and year. Or click the down arrow in the field and select a date using a calendar.
- **9** Type a name for the survey folder in the field CI Survey Name. The field accepts up to 50 alphanumeric characters.

Add Record		×
ROW Code and Pip	e LG123-E	-
Start Date	•	
CI Survey Name	8	
	8	Save   🚳 Cancel

Figure 6-6. Add Record

- **10** Click **Save** to close the *Add Record* dialog box and add a row of records in the grid for the new continuous survey folder (Figure 6-7).
- Provide other information about the survey folder as needed. For example, type the surveyor's name in the Surveyor field; the survey interval in the Survey Interval field; and the name of the company performing the survey in the Vendor field.
- 12 Click 😏 Refresh to update the grid.

The survey folder is now available for selection when working with survey readings in Edit ISM Data (*Data Entry* > *Edit ISM Data*), reports, and graphs.

Surve	y Folder Mainter	nance ×							
			[PCS] CIS Survey			X		🌣 O	otions 🦨 Custo
	CIS	AC CIS	DCVG	ACVG	ACCA	Soil Resistivity	Pearson		
61	Find						0	Add 🛛 🗙 Delete	😘 Refresh   😓
	ROW Code and Pipe	Start Date	CI Survey Name	Surveyor	Survey Interval	Vendor	Station Number Minimum	Station Number Maximum	Number of Readings in Surve
	LG123-E	4/10/2013	LG123E May CIS 2013	jsmith	2.5	Smith CP Services	0+00	0+50	
	LG123-E	11/10/2013	LG123E Nov CIS 2013	jsmith	2.5	Smith CP Services	0+00	0+50	
	LG123-E	2/10/2014	LG123E Jan CIS 2014	jsmith	2.5	Smith CP Services			

Figure 6-7. Survey Folder Maintenance

### Deleting a Continuous Survey Folder

Deleting a continuous survey folder in *Survey Folder Maintenance* also deletes survey readings associated with the survey folder.

To delete a continuous survey folder, follow these steps:

- 1 Click the Select ROWs button *P* to open the Select ROWs window. Select the pipeline segment(s) associated with the continuous survey folder you want to delete. Then click **Save** to close the window (Figure 6-3, page 197).
- 2 Click Modules > Indirect Survey Manager (ISM) to open the ISM module.
- **3** Click **Data Entry** > **Survey Folder Maintenance** to open the *Survey Folder Maintenance* window.

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

- 4 Click a button labeled with the type of continuous survey folder you want to delete. For example, click the **CIS** button **CIS** to delete the survey folder and associated survey readings for a close interval survey (Figure 6-7, page 200).
- **5** Select a pipeline segment in the grid that includes the continuous survey folder you want to delete. For example, the row of records for pipeline segment *LG123-D* are selected in the following figure (Figure 6-8, page 202).

CIS Find ROW Code	AC CIS	DCVG AC	VG	ACCA	Soil Resistivity	Pearson	)	-
ROW Code					( in the second	redrson		
						0	Add   🗡 Delete	😏 Refresh   😸 I
and Pipe	Start Date	CI Survey Name	Surveyor	Survey Interval	Vendor	Station Number Minimum	Station Number Maximum	Number of Readings in Survey
LG123-D	12/10/2013	My Continuous Survey Folder	jsmith	2.5	Smith CP Services	0+00	0+20	3
LG123-E	4/1/2012	NE Paddock #5 L123	jsmith	2.5	Smith CP Services	10712+32	11372+78	25596
LG123-E	10/24/2013	NE Paddock #5 L123 Follow-up	jsmith	2.5	Smith CP Services	0+00	10894+77	6864

Figure 6-8. Survey Folder Maintenance

6 Click **X** Delete. When the message *Delete Record* displays, click **X** Delete again (Figure 6-9).

🚹 Delete Record	x
Close Interval Inspection Folder	
Delete selected survey folder and its readings.	
🗡 Delete   🚳 Ca	ancel

Figure 6-9. Delete Record

7 Click **Ves** when a warning displays asking if you want to continue deleting the survey folder and associated survey readings (Figure 6-10).

The survey folder and associated survey readings are now deleted from PCS Axis.

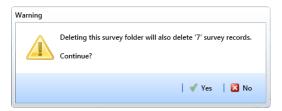


Figure 6-10. Warning

### Using a Continuous Survey Folder

You can use a continuous survey folder in any of the following areas of the Indirect Survey Manager module:

- *Data entry grid*. Add survey readings in a continuous survey folder associated with a pipeline segment using Edit ISM Data (*Data Entry > Edit ISM Data*).
- *Filter option in Criteria Report.* View survey readings based on a survey folder selected in *Options* when working with a columnar *Criteria Report.*
- *Filter option in PCS Axis Inspections Graph.* View a graph of survey readings based on a survey folder selected in *Survey Selections* when working with a *PCS Axis Inspections Graph.*
- *Receiving survey files from the Allegro*. Use the *Options* group box in the *Field Computer Receive Data* window to assign survey readings to a continuous survey folder associated with a pipeline segment.

### Working with Themes and Filter Groups

A theme is a group of named settings saved for later use, such as grid layout or sorting themes. Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

Several installed themes are provided with the PCS Axis software installation. PCS Axis installed themes are public themes available to all PCS Axis users. These themes are identified with a globe icon and PCS in brackets [PCS], such as **(PCS) CIS Survey Folders**.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

A filter group is a named set of one or more filters that affect the data output in the *Survey Folder Maintenance* grid. PCS Axis provides two types of filter groups you can define. These include the AND and OR filter groups.

When you add a filter group, you define filter conditions that determine which records to include or exclude in the *Survey Folder Maintenance* grid. Adding an AND filter group produces a subset of records that meet all filter conditions. Adding an OR filter group produces a subset of records that meet any filter condition. When you apply a filter group to the grid, PCS Axis processes filters in descending order beginning with the filter at the top of the group.

The following sections describe how to add a layout theme, sort theme, and an optional filter group in the *Survey Folder Maintenance* grid. Topics include those in the following list:

- Adding a Layout Theme (page 204)
- Adding a Sort Theme (page 207)
- Adding an AND Filter Group (page 211)
- Adding an OR Filter Group (page 214)
- Editing and Arranging Filters and Filter Groups (page 217)

#### Adding a Layout Theme

A layout theme is a group of fields in a grid layout. Adding a new *Layouts* theme allows you to choose which fields you want to include in the grid layout and then save the layout as a theme for later use.

To add a layout theme in Survey Folder Maintenance, follow these steps:

- **1** Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 6-3, page 197).
- 2 Click Modules > Indirect Survey Manager (ISM) to open the ISM module.
- **3** Click **Data Entry** > **Survey Folder Maintenance** to open the *Survey Folder Maintenance* window.

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

- 4 Click a button labeled with the type of continuous survey that you want to add a layout theme. For example, click the CIS button cis to add a layout theme for a continuous survey associated with close interval survey readings (Figure 6-8, page 202).
- 5 Click the **Customize** tab **Customize** then the **Add** button to open the New Layout Theme dialog box (Figure 6-11).

Enter Theme Name:
My CIS Survey Folder Layout Theme_1
V Public V Copy Content
Copy Fields From Theme:
😵 [PCS] CIS Survey Folders 🔹
Fields in the Selected Theme:
ROW Code and Pipe
Start Date CI Survey Name
Surveyor
Survey Interval
Vendor Station Number Minimum
Station Number Minimum
Number of Readings in Survey
Allegro Survey Information
✓ OK   ⊗ Cancel

Figure 6-11. New Layout Theme

**6** Type a name for the layout theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

- 7 Select a layout theme with fields you want to copy to the new layout theme. Click the Copy Content check box and then click the down arrow in Copy Fields From Theme and select a theme in the selection list.
- 8 Click **W** OK to save changes and return to the *Layouts* page (Figure 6-12).

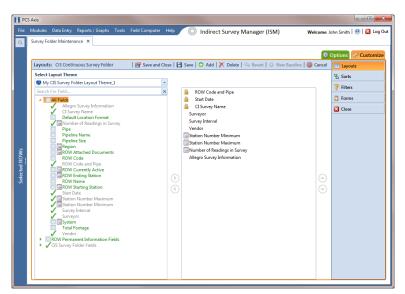


Figure 6-12. Layouts

- **9** Complete the following steps in the *Layouts* page to add and remove fields in the new layout theme as needed:
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ All Fields.
  - **b** Double-click a field listed in the left pane to move it to the right pane. Repeat this step as needed. The layout theme includes all fields listed in the right pane of the *Layouts* page.
  - **c** To remove a field in the layout theme, double-click a field listed in the right pane to move it to the left pane. Repeat this step as needed.

**NOTE:** Fields with a lock icon **A** are required and cannot be removed from the theme, such as **B ROW Code and Pipe** shown in the previous example (Figure 6-12, page 206).

- 10 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.
- **11** Click **3** Save to save changes.
- **12** To apply the new layout theme to the data entry grid in *Survey Folder Maintenance*, follow these steps:
  - a Click the **Options** tab Options to open the options page (Figure 6-13).

- **b** Click the down arrow in the field **Select Layout Theme** and select the new layout theme in the selection list.
- c Choose a method for sorting survey folders in the data entry grid based on the survey date in the *Start Date* field. Click **Oldest First** or **Newest First** in *Sort Dates* to sort survey folders with the oldest or newest survey *Start Date* first.
- **d** Click **Apply** to save and apply changes. If you want to cancel changes instead, click **Cancel**. PCS Axis closes the options page and returns to the *Survey Folder Maintenance* window.

Survey Folder Maintenance ×  CIS Continuous Survey Folder  View CIS Continuous Survey Folder  View CIS Continuous Survey Folder  View CIS Continuous Survey Folder CIS CIS CIS CIS Survey Folder CIS	💷 📷
CIS Continuous Survey Folder	
View	
Select Layout Theme My CLS Survey Folder Layout Theme,1 Select Sort Theme PCS CLS Survey Folders Select Form Theme Solect Form Theme Solec	Cancel
Select Layout Theme My CIS Survey Folder Layout Theme,1 Select Sort Theme (PCS) CIS Survey Folders Select form Theme Sort Dates Oldest First Newest First Fitters On News And Group (New A	And For
Select Form Theme Oldest First Oldest First Oldest First Onewer First  Filters  Sart Date is between  and  and  and  and  and  and  and	
Start Date is between and	
Start Date is between	Or' Grou
	0
Surveyor is equal to	
Vendor is equal to	
Survey Interval is equal to	

Figure 6-13. Options

#### Adding a Sort Theme

A sort theme determines how PCS Axis sorts records in a data entry grid. Adding a sort theme allows you to choose which field(s) to sort records by and if records sort alphanumerically in ascending or descending order.

To add a sort theme for a continuous survey in *Survey Folder Maintenance*, follow these steps:

- 1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 6-3, page 197).
- 2 Click **Modules** > **Indirect Survey Manager (ISM)** to open the ISM module.
- **3** Click **Data Entry** > **Survey Folder Maintenance** to open the *Survey Folder Maintenance* window.

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

- 4 Click a button labeled with the type of continuous survey that you want to add a sorting theme. For example, click the CIS button cis to add a sorting theme for a continuous survey associated with close interval survey readings (Figure 6-8, page 202).
- 5 Click the **Customize** tab *F* **Customize** then the **Sorts** button **<sup>™</sup>** Sorts to open the *Sorts* page (Figure 6-14).

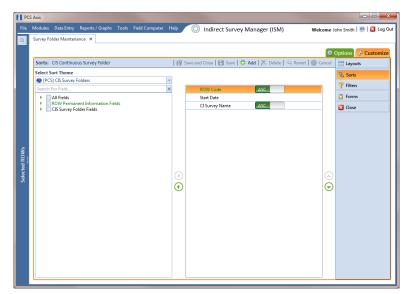


Figure 6-14. Sorts

6 Click the 🛟 Add button to open the New Sort Theme dialog box (Figure 6-15).

New Sort Theme	<b>X</b>
Enter Theme Name:	
My CIS Survey Folder Sort Theme	_1
🔽 Public 📝 Copy Content	
Copy Fields From Theme:	
🔇 [PCS] CIS Survey Folders	-
Fields in the Selected Theme:	
ROW Code	
Start Date CI Survey Name	
	1 L <b>O</b>
	🧹 OK 🕴 🚫 Cance

Figure 6-15. New Sort Theme

7 Type a name for the sort theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the sort theme saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

- 8 Select a sort theme with fields you want to copy to the new sort theme. Click the down arrow in **Copy Fields From Theme** and select a theme in the selection list.
- 9 Click **W** OK to save changes and return to the Sorts page (Figure 6-16, page 210).
- **10** Complete the following steps in the *Sorts* page to add and remove fields in the new sorting theme as needed:
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ All Fields.
  - **b** Double-click a field listed in the left pane to move it to the right pane. Repeat this step as needed. The sorting theme includes all fields listed in the right pane.
  - **c** If you want to remove a field in the sorting theme, double-click a field listed in the right pane to move it to the left pane. Repeat this step as needed.

- 11 Select a sorting method for each field listed in the right pane. To sort grid records in ascending order, click the toggle button to select ASC ASC. To sort in descending order, click the toggle button to select DESC DESC.
- **12** To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.

	Data Entry Reports / Graphs Tools Field	d Computer Help	Indirect Survey Manager (ISM)	Welcome John Smith   🕹   🔀
Survey Fo	older Maintenance 🗙			🕸 Options 👉 Custo
Sorts:	CIS Continuous Survey Folder	🔐 S	ave and Close   💾 Save   📀 Add   🗡 Delete   🗠 Re	
	Sort Theme			🛚 Sorts
	CIS Survey Folder Sort Theme_1	-		Tilters
	For Field	×	ROW Code ASC	C Forms
4	All Fields Allegro Survey Information		Start Date CI Survey Name ASC	
	CI Survey Name Default Location Format		Pipeline Size DESC	🔀 Close
	Number of Readings in Survey     Pipe     Pipeline Name     P	) (		© ©

Figure 6-16. Sort Theme

- **13** Click **B** Save to save changes.
- **14** To apply the new sort theme in the data entry grid of *Survey Folder Maintenance*, follow these steps:
  - a Click the **Options** tab **Options** to open the options page (Figure 6-17, page 211).
  - **b** Click the down arrow in the field **Select Sort Theme** and select the new sorting theme in the selection list.
  - c Choose a method for sorting survey folders in the data entry grid based on the survey date in the *Start Date* field. Click **Oldest First** or **Newest First** in *Sort Dates* to sort survey folders with the oldest or newest survey *Start Date* first.
  - **d** Click **Apply** to save and apply changes. If you want to cancel changes instead, click **Cancel**. PCS Axis closes the options page and returns to the *Survey Folder Maintenance* window.

	Survey Folder Maintena		Tools Field Computer	Help 🔘 I	ndirect Survey I	wanager (ISIW)	Welcome John Smith   🕹   🔀 U
Ι.							🔅 Options 🖌 Custon
	CIS Continuous Survey	Folder					💾 Apply   🛞 Can
	🔡 View					0	Grid 🔘 📋 Form 🔘 🐂 Grid And F
	Select Layout Theme	😵 My CIS Survey	/ Folder Layout Theme_1	•	Select Sort Theme	My CIS Survey Folder Sort Theme	• 10
	Select Form Theme			•	Sort Dates	Oldest First Newest First	
	🍸 Filters					Œ	New 'And' Group   🔘 New 'Or' Gr
	0						0
	Start Date is betv	/een		- 🔟 and		-	
	🔲 Surveyor is equa	to		g			
	🔲 Vendor is equal t	0		g			
	Survey Interval is	equal to		9			

Figure 6-17. Options

### Adding an AND Filter Group

An AND filter group is a named set of one or more filters that affect the data output in the *Survey Folder Maintenance* grid. Adding an AND filter group produces a subset of records that meet all filter conditions. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an AND filter group, follow these steps:

- 1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 6-3, page 197).
- 2 Click Modules > Indirect Survey Manager (ISM) to open the ISM module.
- **3** Click **Data Entry** > **Survey Folder Maintenance** to open the *Survey Folder Maintenance* window.

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

4 Click a button labeled with the type of continuous survey that you want to add an AND filter group. For example, click the **CIS** button **CIS** to add a filter group for a continuous survey associated with close interval survey readings (Figure 6-8, page 202).

- 5 Select a survey in the *Survey Folder Maintenance* grid, then click the **Customize** tab *F* Customize.
- 6 Click the Filters button Filters to open the Filters page. Then click
   (1) New 'And' Group to open a filter properties group box (Figure 6-18).
- 7 Type a name for the filter group in the field **Filter Group Caption**.
- **8** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- **9** If the AND filter group includes a date filter, such as *Start Date Is Between* shown in Figure 6-18, set a date range using a calendar or dynamic dates in the following manner:
  - To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - To set a date range using dynamic start and end dates, click the button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **10** If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the *Options* page using the filter's check box.
- **11** Type a name for the filter in the field **Enter Custom Filter Caption**.

CS Axis  Modules Data Entry Reports / Graphs Tools Field Computer Help O Indirect Survey Manager (ISM)  Welcom Survey Folder Maintenance ×	ue John Smith   😢   🔀 Log
	🗘 Options 🥜 Customiz
Filters: CIS Continuous Survey Folder 🛛 💾 Save and Close 🛛 💾 Save 🗎 Save 🗎 Save 🖉 Cancer	el 📰 Layouts
① New 'And' Group   ④ New 'Or' Gro	up 🛚 Sorts
D Filter Group Caption	<b>Filters</b>
Start Date Is between [ ] and [ ]	Forms
Surveyor Is equal to [ ]	Close
Vendor Is equal to [ ]	
Survey Interval Is equal to [ ]	
Filter Group Caption	
Start Date Is between '10/1/2013' and '12/10/2013'	
📄 📄 Filter Is Always On 🗙 🗙	
Start Date • Is Between • 10/1/2013 • iii and 12/10/2013 • iii	
Enter Custom Filter Caption	
	<u> </u>

Figure 6-18. Filters

- **12** If you want to set up additional filter criteria for the filter group:
  - a Click 🛟 Add to open another filter properties group box.
  - **b** Repeat **step 8** through **step 11** to set up filter criteria.
- **13** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

#### 14 Click 💾 Save.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **15** To apply one or more custom filter groups to the *Survey Folder Maintenance* grid (Figure 6-19, page 214):
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click the check box for each filter you want to apply to the grid.
- 16 Choose a method for sorting records in the grid. Click Oldest First or Newest First in Sort Dates to sort records with the oldest or newest inspection dates first.
- 17 Click Apply to save changes and return to the grid. If you want to cancel changes and return to the grid, click S Cancel.

Clicking the **Options** tab **Options** also allows you to save changes and return to the grid.

	Nxis Aodules Data Entry Reports / Graphs Tools Fie Survey Folder Maintenance ×	id Computer Help O Indirect Survey Manager (ISM) Welcome John Sm	ith   😶   🔀 Log Out
	CIS Continuous Survey Folder	18	15 🗲 Customize Apply   🚳 Cancel
	View Select Layout Theme My CIS Survey Folder Layo Select Form Theme Filters		•
	Filters	w New And Group       and 6/30/2014     *	• New Or Group
Selected ROWs	Surveyor is equal to Vendor is equal to Survey Interval is equal to	9	
Sele	My AND Filter Group_1     Vendor is missing	P	•
	Allegro Survey Information is missing		

Figure 6-19. Options

#### Adding an OR Filter Group

An OR filter group is a named set of one or more filters that affect the data output in the *Survey Folder Maintenance* grid. Adding an OR filter group produces a subset of records that meet any filter condition. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an OR filter group, follow these steps:

- 1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 6-3, page 197).
- 2 Click Modules > Indirect Survey Manager (ISM) to open the ISM module.
- **3** Click **Data Entry** > **Survey Folder Maintenance** to open the *Survey Folder Maintenance* window.

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

4 Click a button labeled with the type of continuous survey that you want to add an AND filter group. For example, click the CIS button crs to add a filter group for a continuous survey associated with close interval survey readings (Figure 6-8, page 202).

- 5 Select a survey in the Survey Folder Maintenance grid, then click the Customize tab Customize.
- 6 Click the Filters button Filters to open the Filters page. Then click
   (1) New 'Or' Group to open a filter properties group box (Figure 6-20).
- 7 Type a name for the filter group in the field **Include records that match any of these conditions**.
- **8** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- **9** If the OR filter group includes a date filter, such as *Start Date Is Between* shown in Figure 6-20, set a date range using a calendar or dynamic dates in the following manner:
  - To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - To set a date range using dynamic start and end dates, click the button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **10** If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the *Options* page using the filter's check box.
- **11** Type a name for the filter in the field **Enter Custom Filter Caption**.

PCS	Axis		
File			n Smith   🥹   🔀 Log Out
۹.	Survey	Folder Maintenance ×	
	_		otions 🥜 Customize
	Filter		Layouts
	_		Sorts
		Filter Group Caption	√ Filters
		Start Date is between [ ] and [ ]	Close
		• Suiveyor is equal to [ ]	Close
	L L L L	Vendor Is equal to	
		Survey Interval Is equal to [ ]	
Ŵs		Include records that match any of these conditions	
Selected ROWs		Start Date Is between '8/1/2013' and '11/30/2013'	
electe	8.	Filter Is Always On	
Ň		Start Date - Is Between - 8/1/2013 - and 11/30/2013 - and	
		Enter Custom Filter Caption	

Figure 6-20. Filters

- **12** If you want to set up additional filter criteria for the filter group:
  - a Click 🛟 Add to open another filter properties group box.
  - **b** Repeat **step 8** through **step 11** to set up filter criteria.
- **13** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

#### 14 Click 💾 Save.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **15** To apply one or more custom filter groups to the *Survey Folder Maintenance* grid (Figure 6-21, page 217):
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click the check box for each filter you want to apply to the grid.
- 16 Choose a method for sorting records in the grid. Click Oldest First or NewestFirst in Sort Dates to sort records with the oldest or newest inspection dates first.
- 17 Click Apply to save changes and return to the grid. If you want to cancel changes and return to the grid, click S Cancel.

Clicking the **Options** tab **Options** also allows you to save changes and return to the grid.

PC	S Axis												×
File	1	Data Entry Rep		Tools Fie	ld Computer	Help 🜔	) Ir	ndirect Survey N	Aanager (ISM)	Welcome Jo	hn Smith   😣	🔀 L	og Out
Q	Survey Fo	older Maintenance	×										
										(\$ C	Options 🗲 🤆		
	CIS Con	tinuous Survey Fo	lder								Apply	🕲 Can	icel
	🔡 Vie	w								🔘 📰 Grid 🔘 📋 F	orm 🔘 隋 Gri	d And F	orm
	Select	Layout Theme	My CIS Survey	r Folder Layo	ut Theme_1		-	Select Sort Theme	My CIS Survey Folde	r Sort Theme_1		*	
	Select	Form Theme					٣	Sort Dates	Oldest First O Newe	ist First			
	🍸 Filt	ters								① New 'And' G	roup 🛛 🔘 Nev	'Or' Gr	oup
	۵				]							0	
	🔲 SI	art Date is betwee	n			- 🔟	nd			- 11			
۶Ń.	_	urveyor is equal to				9							
ed R(		endor is equal to				1							
Selected ROWs		urvey Interval is eq	ual to				2						J
	lo In	clude records that	match any of t	hese conditi	ons							•	
		art Date is betwee llegro Survey Infor			3								
		legro survey infor	mation is missi	ng									J
													-
	·												inni

Figure 6-21. Options

#### Editing and Arranging Filters and Filter Groups

PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group. Filter groups are processed similarly. Information in this section explains how to edit filter property settings and how to arrange filters and filter groups.

Complete the following steps:

- 1 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 6-3, page 197).
- 2 Click Modules > Indirect Survey Manager (ISM) to open the ISM module.

- **3** Click **Data Entry** > **Survey Folder Maintenance** to open the *Survey Folder Maintenance* window.
- 4 Click a button labeled with the type of continuous survey you want to work with, such as the **CIS** button **CIS**.
- **5** Select a survey in the *Survey Folder Maintenance* grid.
- 6 Click the **Customize** tab **Customize**, then the **Filters** button **Filters** to open the *Filters* page.
- 7 Click a filter's edit icon *P* to display filter property settings (Figure 6-22).

PC:	5 Axis	
File		John Smith   🤨   🔀 Log Out
۹	Survey Folder Maintenance ×	
		Options 🥜 Customize
	Filters: CIS Continuous Survey Folder 🛛 😰 Save and Close 🛛 🖓 Revert   🚳 Cancel	E Layouts
	O     New 'And' Group        New 'Or' Group	
	Filter Group Caption	Y Filters
	Start Date Is between [ ] and [ ]	Close
	Surveyor Is equal to [ ]	Close
	Vendor Is equal to [ ]	
	Unvey interval is equal to [ ]	
Š	My Custom AND Filter Group_1	
8 i	Surveyor Is missing	
Selected ROWs 	Allegro Survey Information Is missing	
Ś	My Custom OR Filter Group_1	
	Wy Obtain Ok Hite Bloup_1	

Figure 6-22. Filters

8 To delete a filter in a filter group, click the filter's X delete button (Figure 6-23). Then click V OK when the *Delete* message displays.

PCS	Axis	
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🚫 Indirect Survey Manager (ISM) Wekome	John Smith   📵   🔀 Log Out
Q.	Survey Folder Maintenance ×	
		Options 🥜 Customize
	Filters: CIS Continuous Survey Folder   💾 Save and Close   💾 Save   🗠 Revert   🍪 Cancel	🖽 Layouts
	💿 New 'And' Group 🛛 🚥 New 'Or' Group	🛚 🖉 Sorts
	Filter Group Caption	T Filters
	Start Date Is between [ ] and [ ]	C Forms
	Surveyor Is equal to [ ]	Close
	🖋 Vendor Is equal to [ ]	
	Survey Interval Is equal to [ ]	
~		
Selected ROWs 	My Custom AND Filter Group_1	
ted F	Surveyor Is missing     Allegro Survey Information Is missing	
Selec	Allegro Survey Information Is missing	
	My Custom OR Filter Group_1	
		elete filter group?
	👷 🔄 Filter Is Always On 🗙 📉	
	Start Date V Is Not Missing V	
	Enter Custom Filter Caption	
	<u></u>	

Figure 6-23. Filters

- **9** To rename a filter, type a description in the filter's name field.
- **10** To change filter criteria, use filter selection fields to select a PCS Axis field, operator, and one or more filter conditions.
- 11 To enable a filter for all sessions of the data entry grid, click the check box Filter is Always On to place a check mark inside the check box. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- **12** Click the **2** close button to close the filter's property settings group box (Figure 6-23, page 219).
- **13** To move a filter to a different position in a filter group, or to move a filter group to a different position, follow these steps:
  - **a** Point the mouse at the handle of a filter or filter group to display a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

14 Click P Save and Close to save changes and return to the grid.

# Notes

# Using Data Entry Grids and Forms

Information in this chapter explains how to use the data entry grids and forms in *Edit* <*module* > *Data*. It explains how to add and edit facility information, inspection, and maintenance records as well as records for continuous survey data. The information is intended for all users unless noted otherwise.

Topics in this chapter include those in the following list:

- Data Entry Grid Overview
- Working with Data Entry Grids (page 227)
- Working with Data Entry Forms (page 279)
- Working with Continuous Survey Data (page 284)
- Working with Themes and Filter Groups (page 316)
- Working with Records (page 333)

## Data Entry Grid Overview

PCS Axis provides different types of data entry grids (also referred to as grids) and minigrids for organizing and managing facility data. Information in this section provides a description of these grids. Topics include those in the following list:

- Types of Data Entry Grids (page 222)
- Understanding Field Caption Colors (page 223)
- Rearranging and Resizing Grid Columns (page 224)
- Locking and Unlocking Grid Columns (page 224)
- Replacing All Values (page 225)
- Working with Derived Fields (page 226)

## Types of Data Entry Grids

PCS Axis provides the following data entry grids and mini-grids for organizing and managing facility data. These grids are similar to a spreadsheet in appearance with facility data presented in columns, rows, and individual fields. Several options are available for customizing the layout and sorting order of a grid, as well as applying data filters that allow you to work with a subset of facility records.

- Information grid: Use the Information grid to add and edit permanent facility information, such as the milepost number, location description, operating status, protection criteria, and permanent comments. The Information grid is also used for activating fields in the Inspection grid.
- *Inspection grid*: Use the *Inspection* grid to add and edit survey inspection data for facilities on a pipeline segment, such as facility inspection readings, GPS coordinates, survey folder assignment, survey remarks, technician name, and so on.
- Test Point Detail Information and Inspection mini-grids: Use the CPDM Test Point Detail mini-grids to manage multiple potential measurements for survey points linked to a test point record. These mini-grids function in a similar manner as the rectifier mini-grids when linking rectifier anodes and negatives. The potential measurement selected for compliance reporting in the Detail Inspection mini-grid copies to the linked test point record in the main Inspection grid.

**NOTE:** The *Test Point Detail* mini-grids become available for use after enabling the system option *Show Detail Inspection Entry Grid*. When using the optional *Telluric Compensation* feature, the mini-grids display by default and cannot be disabled.

- *Maintenance grid*: Use the *Maintenance* grid to add and edit maintenance and repair records for facilities on a pipeline segment.
- *Facility Level Override mini-grid:* The *Information* grid for all modules includes the *Facility Level Override* mini-grid. Scheduling properties in *Edit Schedule Settings* (page 453) can be overridden at the facility level using this mini-grid.
- *Rectifier Information mini-grids*: The CPDM Rectifier Information grid includes the Rectifier Anode Information and Rectifier Negative Information mini-grids. Use these mini-grids to add and delete records for impressed anodes and negatives linked to a rectifier information record.
- *Rectifier Inspection mini-grids*: The CPDM Rectifier Inspection grid includes the Rectifier Anode Inspection and Rectifier Negative Inspection mini-grids. Use these mini-grids to enter inspection readings for rectifier anode(s) and negatives linked to one or more pipeline segments.

## **Understanding Field Caption Colors**

PCS Axis uses a color code system in field captions throughout the system that allows you to easily identify one data type from another (Figure 7-1).

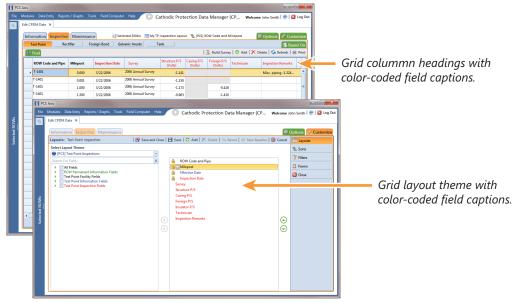


Figure 7-1. Colors in Field Captions

Field captions in column headings of a data entry grid are color-coded to help distinguish different data types, such as information, inspection, and maintenance fields. Likewise, field captions in selection lists are also color-coded when creating themes in the *Customize* tab. The following table identifies the different data types with corresponding colors.

Data Type	Color
Facility Field	Black
Facility Information Field	Blue
Inspection Field	Red
Maintenance Field	Red
ROW and Pipeline Field	Green
All Others	Black

## Rearranging and Resizing Grid Columns

Rearranging grid columns in a data entry grid is easily accomplished by dragging and dropping a grid column to a new position. Performing this function requires appropriate user permissions for modifying a data entry grid layout theme. If the data entry grid layout theme is *Public*, changes apply only to the current session of the data entry grid and are not saved in the layout theme. When the data entry grid layout theme is *Private*, the new column order is saved in the data entry grid layout theme.

To rearrange a grid column:

• Drag and drop a selected grid column to a new position in the data entry grid.

To resize a grid column:

 Place the mouse over a column boundary to change the cursor to a horizontal resize cursor I. Then click and drag the column boundary to resize the grid column.

## Locking and Unlocking Grid Columns

You can lock a group of grid columns on the left side of a data entry grid to prevent them from moving when scrolling the data entry grid. Grid columns to the right of locked columns remain scrollable.

To lock a grid column:

• Right-click a grid column and then select **Lock Column** in the shortcut menu that opens (Figure 7-2).

l	Edit C	PDM Data ×				Cathoater		ection Data	manag	jor (or in	Welcome John S	
	Info	ormation Ins	pection M	laintenance 🗈 🗈	Selected ROWs 📰 M	y Inspection Grid Layo	ut Th	eme_1 📉 My	Inspectio	n Grid Sort	Theme_1 🔅 Opti	ons 🦨 Custo
		Test Point	Rectifier	Foreign Bor	d Galvanic Anode	Tank						📑 Base
	6.5	Find						11	3. Build	Survey   😋	Add   🗡 Delete	😏 Refresh   😣
		ROW Code and Pipe	Milepost	Inspection Date	Survey	Structure P/S (Volts)	Cas	ing P/S (Volts)	Foreign I	P/S (Volts)	Insulator P/S (Volts)	Technician
		T-1401	0.000	3/22/2006	2006 Annual Survey	-1.141	Ħ	Best Fit				jsmith
		T-1401	0.001	3/22/2006	2006 Annual Survey	-1.150		Best Fit (all co	lumns)			jsmith
		T-1401	1.000	3/22/2006	2006 Annual Survey	-1.173	Q	Show Search		-0.428		jsmith
		T-1401	1.500	3/22/2006	2006 Annual Survey	-0.963		Lock Column		-1.410		jsmith
		T-1401	1.627	3/22/2006	2006 Annual Survey	-0.922		Replace All Va				jsmith
		T-1401	1.750	3/22/2006	2006 Annual Survey	-0.895		Unlock Colum	n			jsmith
		T-1401	2.000	3/22/2006	2006 Annual Survey			-0.635				jsmith
		T-1401	2.250	3/22/2006	2006 Annual Survey	-1.091						jsmith
		T-1401	2.500	3/22/2006	2006 Annual Survey	-0.996				-0.739		jsmith
		T-1401	3.000	3/22/2006	2006 Annual Survey	-0.717				-0.852		jsmith
		T-1401	3.218	3/22/2006	2006 Annual Survey	-1.492						jsmith
		T-1401	3.250	3/22/2006	2006 Annual Survey	-1.118						jsmith
		T-1401	3.500	3/22/2006	2006 Annual Survey	-0.694				-0.184		jsmith
		T-1401	4.000	3/22/2006	2006 Annual Survey	-0.686				-0.707		jsmith
		T-1401	5.000	3/22/2006	2006 Annual Survey	-1.116				-0.665		jsmith
		T-1401	5.275	3/22/2006	2006 Annual Survey	-1.451				-1.339		jsmith
		T-1401	6.000	3/22/2006	2006 Annual Survey	-1.024				-0.954		jsmith
		T-1401	7.000	3/22/2006	2006 Annual Survey	-1.094				-0.648		jsmith
		T-1401	8.000	3/22/2006	2006 Annual Survey	-0.831				-0.862		jsmith
		T-1401	8.500	3/22/2006	2006 Annual Survey	-1.020				-0.638		jsmith
		T-1401	8 717	3/22/2006	2006 Annual Survey	-1 080						irmith

Figure 7-2. Lock Grid Column

To unlock a locked grid column:

• Right-click the locked grid column and then select **Unlock Column** in the shortcut menu that opens.

## **Replacing All Values**

When you want to replace a value in all fields of a selected grid column with the same value, right-click the grid column and select **Replace All Values** in the shortcut menu. When the *Replace All Values* dialog box opens, enter the information that will be used to replace values in all fields of the selected grid column and then click **OK**.

The *Replace All Values* command is not available for read-only grid columns, fields in a mini-grid, or picklist fields.

## Working with Derived Fields

A derived field is a system calculated field with a value based on values in dependent fields. For example, PCS Axis calculates a value for the field *Effective IR Correction* based on values in the following dependent fields:

- User IR Correction
- Structure P/S
- Structure IRF
- Inspection Date

When a value for a dependent field has been updated in a data entry grid, a **(**) notification icon displays in the derived field indicating the value has changed and the data entry grid should be refreshed. Clicking the **(a) Refresh** button updates all derived values and removes the notification icon (Figure 7-3).

_	CPDM Data ×	spection		Selected POWc	My Inconction Gr	id I suput Theme 1	My Inspection Grid	1 Sort Theme 1	🛱 Options 🖌	Custo
Int	Test Point	Rectifier		10.0		id cayout meme_1	My inspection and	1 Sort meme_1		_
	_	Kecuner	Foreign Bor	Gaivanic Anode	ј тапк		1.0			Base
8	S Find						Build S	iurvey   😋 Add   🗡	Delete   😏 Ketrest	18
	ROW Code and Pipe	Milepost	Inspection Date	Survey	Effective IR Correction (Volts)	User IR Correction	Structure IRF (Volts)	Structure P/S (Volts)	Casing P/S (Volts)	Fore
	T-1401	2.000	3/22/2006	2006 Annual Survey					-0.635	
	• T-1401	2.250	3/22/2006	2006 Annual Survey	0	2.000	-0.650	-1.091		
	T-1401	2.500	3/22/2006	2006 Annual Survey				-0.996		
	T-1401	3.000	3/22/2006	2006 Annual Survey				-0.717		
	T-1401	3.218	3/22/2006	2006 Annual Survey				-1.492		
	T-1401	3.250	3/22/2006	2006 Annual Survey				-1.118		
	T-1401	3.500	3/22/2006	2006 Annual Survey				-0.694		
	T-1401	4.000	3/22/2006	2006 Annual Survey				-0.686		
	T-1401	5.000	3/22/2006	2006 Annual Survey				-1.116		
	T-1401	5.275	3/22/2006	2006 Annual Survey				-1.451		
	T-1401	6.000	3/22/2006	2006 Annual Survey				-1.024		
	T-1401	7.000	3/22/2006	2006 Annual Survey				-1.094		
	T-1401	8.000	3/22/2006	2006 Annual Survey				-0.831		
	T-1401	8.500	3/22/2006	2006 Annual Survey				-1.020		
	T-1401	8.717	3/22/2006	2006 Annual Survey				-1.080		
	T-1401	8,800	3/22/2006	2006 Annual Survey				-1.720		
	T-1401	8.830	3/22/2006	2006 Annual Survey				-1.514		
	T-1401	8.957	3/22/2006	2006 Annual Survey				-1.422		
	T-1401	8.979	3/22/2006	2006 Annual Survey				-1.409	-1.186	
	T-1401	9.000	3/22/2006	2006 Annual Survey				-1.457		

Figure 7-3. Derived Field

# Working with Data Entry Grids

Data entry grids in *Edit* <*module* > *Data* allow you to edit and manage multiple facility records linked to one or more pipeline segments. You can add and edit facility information, inspection, and maintenance records using the *Information Inspection*, and *Maintenance* data entry grids.

Although the CPDM module is used in the following examples, the information applies to all modules except Indirect Survey Manager (ISM). For information about the ISM module, begin with the section entitled *Working with Continuous Survey Data* (page 284).

Information in this section explains how to use the most common features of a data entry grid. For information about other features, see *Working with Themes and Filter Groups* (page 316) and *Working with Records* (page 333).

Topics in this section include those in the following list:

- Adding Facility Records (page 227)
- Creating History Records Using an Effective Date (page 245)
- Viewing Records in a Grid (page 249)
- Filtering Data in a Grid (page 264)
- Building a Survey in the Inspection Grid (page 270)
- Using Find to Search a Data Entry Grid (page 274)
- Printing, Exporting, or Emailing Grid Content (page 276)

## Adding Facility Records

Instructions in the following topics describe how to add facility information, inspection, and maintenance records in a data entry grid:

- Adding a Facility Information Record
- Adding a Facility Inspection Record (page 233)
- Adding a Facility Maintenance Record (page 239)

#### Adding a Facility Information Record

Use the *Information* grid to add a record for a new facility on a pipeline; add an information record for an existing facility in the grid; add a history record to maintain permanent information about a facility; and activate certain fields for data entry in the *Inspection* grid – such as *Activate Structure P/S* and *Activate Casing P/S*.

The procedure in this section covers the following scenarios for adding a record in the *Information* grid:

- adding an information record for an existing facility in the grid (step 7, page 230)
- adding a record for a new facility on a pipeline (**step f**, page 231)

Complete the following steps:

1 Click the **Select ROWs** button *P* to open the *Select ROWs* window (Figure 7-4).

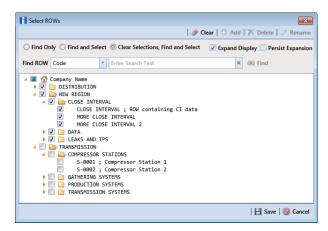


Figure 7-4. Select ROWs

2 Select one or more pipeline segments with facilities you want to work with by clicking the check box for each pipeline segment. Click Save to close the window.

**NOTE:** A check mark inside a check box indicates a selection. To clear a selection, click the check box again to remove the check mark. A shaded check box indicates selection of some, not all, child folders, ROWs, and pipelines.

**NOTE:** Although the CPDM module and test point facility type are both referenced in this procedure, instructions apply to any PCS Axis module and facility type.

Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM **Data** to open the *Edit CPDM Data* window (Figure 7-5).

	Test Point		10.4	Selected ROWs I My Te	st Point Layout_1 🛛 🛚 [PCS]	Now code and minep		Options 🖌 C	Base
	Find		oreign bond				🔿 Add 🔀 De		
	ROW Code and Pi	e Milepost	Location Description	Test Point Protection Crite	ia Activate Structure P/S	Activate Casing P/S	Activate Foreign P/S	Facility Active	_
,	T-1401	0.000	Bethel Station	100 mV	✓			7	_
	T-1401	0.001	Rectifier R-200	.85 On	1			1	
	T-1401	0.002	My Rectifier_1	.85 On	1	1		1	
	T-1401	0.003	My Rectifier_2	.85 On	V			1	
	T-1401	1.000	Alderman #1	.85 On	√		1	1	
	T-1401	1.500	Williford E #1	.85 On	1		1	1	
	T-1401	1.627	FM 321	.85 On	$\checkmark$	1		1	
	T-1401	1.750	Park Rd. 64	.85 On	1	1		1	
	T-1401	2.000	Texas 84	.85 On	1	1		1	
	T-1401	2.250	County Rd.	.85 On	1			1	
	T-1401	2.500	Fryer B	.85 On	<b>V</b>		1	1	
	T-1401	3.000	Whitaker #1	.85 On	$\checkmark$		1	1	
	T-1401	3.218	County Road	.85 On	$\checkmark$			1	
	T-1401	3.250	Old Meter Riser	.85 On	$\checkmark$			1	
	T-1401	3.500	Old Meter Riser	.85 On	$\checkmark$		<b>V</b>	1	
	T-1401	4.000	Mills #1	.85 On	V		V	1	
								📰 Row Co	unt:
	acility Level Override Selected Sc	heduling Type Nar	ne Last Inspection Dat	e Due Dates I	Delinquent Date Due Date	Calculation Method	lime Between Surveys	Target Month	Ta
	🗸 🕴 Yes 🛛 Te	st Point	1/30/2014	1/2015, 1/2016, 1/2	4/30/2015 Targets	1.	2 Months	January	Ν,
	( <u>)</u>							📆 Row Cou	) unt:

Figure 7-5. Information Grid

- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 Open the *Information* grid for a facility type. For example, click the **Information** tab <u>Information</u> and then a facility type button, such as **Test Point** <u>Test Point</u>.
- 6 Click **Click** Add to open the *Add Record* dialog box (Figure 7-6). Then continue with one of the following steps:

**HINT:** Alternatively, you can use keyboard shortcut keys to add records. Press **F4** to add an information record for an existing facility in the grid. Press **F8** to add a new facility in the grid with an information record.

- To add an information record for an existing facility in the grid, continue with step 7 (page 230).
- To add a new facility in the grid with an information record, continue with **step f** (page 231).

1	Add Record		<b>—</b> ×-
C	Test Point Facility and	d Information Record	
0	Test Point Informatio	n Record	
	ROW Code	Relative Milepost	Pipe
۲	ATMOS, TP - 1	1	1
	ATMOS, TP - 1	2	1
	ATMOS, TP - 1	3	1
	ATMOS, TP - 1	4	1
	ATMOS, TP - 1	5	1
	ATMOS, TP - 1	6	1
	ATMOS, TP - 1	7	1
	ATMOS, TP - 1	8	1
	ATMOS, TP - 1	9	1
	ATMOS, TP - 1	10	1 💌
٩			
			Row Count: 1256
			💾 Save   🚳 Cancel

Figure 7-6. Add Record

- 7 To add an information record for an existing facility in the grid:
  - **a** Click the option **Test Point Information Record**. Then select a facility by clicking on the facility's name in the *Add Record* dialog box.
  - **b** Click 💾 Save.

A new Add Record dialog box displays required field(s) for data entry (Figure 7-7).

Add Record			×
ROW Code and Pipe	ATMOS, TP - 1	-	
Milepost	8		
Effective Date	2/20/2015 *		
		💾 Save   🚳	Cancel

Figure 7-7. Add Record

**c** Type a date in the **Effective Date** field using the format MM/DD/YYYY to indicate the month, day, and year. Or click the down arrow in the field and select a date using a calendar.

*Effective Date* is the date a history record becomes effective. New history records are created with an *Effective Date* when important permanent information changes. See *Creating History Records Using an Effective Date* (page 245) for more information.

- **d** Click **Bave** to close the *Add Record* dialog box and add an information record in the grid for the existing facility.
- e Provide other facility data in the grid as needed, such as *Permanent Comments* (Figure 7-8).

lf		est Point	ction Maintenan Rectifier Fe		c Anode Tank		[PCS] ROW Code and Miles		Options 🖌 Cust	-
	55	Find						🗘 🔿 Add 🛛 🗡 De	lete   😘 Refresh   🗟	
	-	ROW Code and	Pipe Milepost	Location Description	Effective Date	Test Point Protection Crite	ia Activate Structure P/S	Activate Casing P/S	Activate Foreign P/S	F
	•	T-1401	0.000	Bethel Station	1/31/2014	100 mV	V			Т
		T-1401	0.001	Rectifier R-200		85 On	1			T
		T-1401	0.002	My Rectifier_1		85 On	<b>V</b>	V		
		T-1401	0.003	My Rectifier_2		85 On	V			
		T-1401	1.000	Alderman #1		85 On	V		V	
		T-1401	1.500	Williford E #1		85 On	7		V	
		T-1401	1.627	FM 321		85 On	<b>V</b>	<b>V</b>		
		T-1401	1.750	Park Rd. 64		85 On	<b>V</b>	1		
		T-1401	2.000	Texas 84		85 On	<b>V</b>	<b>V</b>		
		T-1401	2.250	County Rd.		85 On	$\checkmark$			
		T-1401	2.500	Fryer B		85 On	V		V	
		T-1401	3.000	Whitaker #1		85 On	$\checkmark$		V	
	4	T-1401	3 218	County Road		85 On	J			Þ
	Fa	cility Level Overri	de						TRow Count	10
		Selected	Scheduling Type Nam	e Last Inspection Date	Due Dates	Delinquent Date Due	Date Calculation Method	Time Between Surveys	Target Month T	a
		Yes	Test Point	1/30/2014	1/2015. 1/2016. 1/2.	4/30/2015 Targ	ets	12 Months	January N	) in
	٠	1							Row Count:	-

Figure 7-8. Add Record

- f Click 😏 Refresh to update the grid.
- **8** To add a record in the *Information* grid for a new facility:
  - a Click the option Test Point Facility and Information Record.
  - **b** Select the pipeline in the dialog box that you want to add a new facility and information record. For example, pipeline *T*-1401 is selected in Figure 7-9.

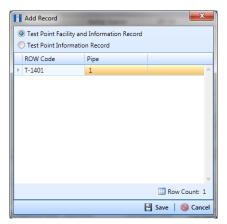


Figure 7-9. Add Record

c Click **Save** to display required field(s) for data entry. Required fields are identified with the **S** icon, such as *Milepost* (Figure 7-10).

Add Record	
ROW Code and Pipe	T-1401 ·
Milepost	8
	💾 Save   🚳 Cancel

Figure 7-10. Add Record

- **d** Type the facility milepost number in the **Milepost** field. Based on your system configuration, the *Milepost* field may have a different caption for *User Location Name*, such as *Station Number* or other type of identifier.
- e Click **Save** to close the dialog box and add the new facility record in the *Information* grid.

**f** Activate one or more fields for data entry in the *Inspection* grid. Click the check box for an "activate" field in the *Information* grid to place a check mark inside the check box.

For example, click the check box *Activate Casing P/S* for *Milepost 0.002* (Figure 7-11).

		ctifier	Foreign Bond	Galvanic Anode	Tank			10 441	🔀 Ba
88 F									
	ROW Code and Pipe -1401	Milepo	ost Location 100 Bethel St			riteria Activate Structure P/S	Activate Casing P/S	Activate Foreign P/S	5 Activate Insulator P/S
	-1401	0.0				V			
	-1401	0.0				V			
ΥT	-1401		102	.85 (	)n	V	V		
	-1401		00 Alderma			v		7	
	-1401		00 Alderna 00 Williford			V V			sing pipe-to-soil potential fi
	-1401	1.0		.85 (		V V	V		
	-1401		50 Park Rd.			×	×		
Т	-1401	2.0	00 Texas 84	.85 (	Dn	V	V		
Т	-1401	2.2	250 County F	d	Dn	1		0	
Т	-1401	2.5	00 Fryer B	.85 (	Dn	<b>V</b>		7	
Т	-1401	3.0	00 Whitaker	#1 .85 (	Dn	<b>v</b>		1	
Т	-1401	3.2	18 County F	.0ad .85 (	Dn	1			
	-1401	3.2	250 Old Mete			1			
Т	-1401	3.5	00 Old Mete			1		1	
	-1401		00 Mills #1	.85 (		<b>v</b>		$\checkmark$	
	-1401		00 Richard -			$\checkmark$		1	
T	-1401	5.3	275 Eastex Tr	ans	Dn	$\checkmark$		1	
4									
									📅 Row Cou
Fac	ility Level Override								
	Selected Sche Type	duling La	st Inspection Date	Due Dates	Delinquent Date	Due Date Calculation Method	Time Between Surveys	Target Month Target	t Year Grace Period
1	Yes Test	Point		1/2014, 1/2015, 1/2	4/1/2014	Targets	12 Months	January N/A	
							_		Row Cour

Figure 7-11. Information Grid

- **g** Provide other facility information as needed. For example, type a description of the facility location in the **Location Description** field and comments about the facility in the **Permanent Comments** field.
- h Click 😏 Refresh to update the grid.

#### Adding a Facility Inspection Record

Information in this section covers the following scenarios for adding a record in the *Inspection* grid:

- adding an inspection record for an existing facility (**step 7**, page 235)
- adding a new facility with an inspection record (**step f**, page 237)

Complete the following steps:

1 Click the **Select ROWs** button *P* to open the *Select ROWs* window (Figure 7-12).

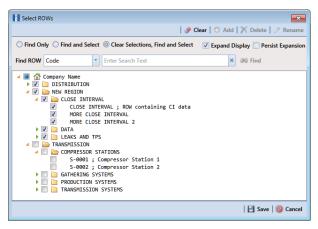


Figure 7-12. Select ROWs

- 2 Select one or more pipeline segments with facilities you want to work with, then click **Save** to close the window.
- 3 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM **Data** to open the *Edit CPDM Data* window (Figure 7-13).

_	t CPDM Data ×	spection Maint		Selected ROWs 📰 My T	est Point Inspections Layout_1	No. [PCS] ROW Code and Mi	lanart	options 🖌 Cus
ľ	Test Point	Rectifier		ic Anode Tank	est Point inspections tayoot_1	A [FC3] KOW CODE BIID MI	meposi 🚾 🖸	Bas
	•• Find	Incenter				Ruild	Survey   🗢 Add   🗡 Delet	
Γ	ROW Code and Pipe	Milepost	Inspection Date	Survey	Structure P/S	Casing P/S	Foreign P/S	Technician
	• T-1401	0.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.141			jsmith
	T-1401	0.001	3/22/2006 12:00 AM	2006 Annual Survey	-1.150			jsmith
	T-1401	0.002	1/30/2014 12:00 AM	2014 Annual Survey	-1.451	-0.509		jsmith
	T-1401	1.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.173		-0.428	; jsmith
	T-1401	1.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.963		-1.410	jsmith
	T-1401	1.627	3/22/2006 12:00 AM	2006 Annual Survey	-0.922	-0.298		jsmith
	T-1401	1.750	3/22/2006 12:00 AM	2006 Annual Survey	-0.895	-0.412		jsmith
	T-1401	2.000	3/22/2006 12:00 AM	2006 Annual Survey		-0.635		jsmith
	T-1401	2.250	3/22/2006 12:00 AM	2006 Annual Survey	-1.091			jsmith
	T-1401	2.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.996		-0.739	jsmith
	T-1401	3.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.717		-0.852	jsmith
Г	T-1401	3.218	3/22/2006 12:00 AM	2006 Annual Survey	-1.492			jsmith
	T-1401	3.250	3/22/2006 12:00 AM	2006 Annual Survey	-1.118			jsmith
	T-1401	3.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.694		-0.184	jsmith
	T-1401	4.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.686		-0.707	jsmith
	T-1401	5.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.116		-0.665	jsmith
	T-1401	5.275	3/22/2006 12:00 AM	2006 Annual Survey	-1.451		-1.339	jsmith
	T-1401	6.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.024		-0.954	jsmith
	T-1401	7.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.094		-0.648	jsmith
	T-1401	8.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.831		-0.862	jsmith
	T-1401	8.500	3/22/2006 12:00 AM	2006 Annual Survey	-1.020		-0.638	jsmith
	T-1401	8.717	3/22/2006 12:00 AM	2006 Annual Survey	-1.080			ismith

Figure 7-13. Inspection Grid

4 Open the *Inspection* grid for a facility type. For example, click the **Inspection** tab **Inspection** and then a facility type button, such as **Test Point Test Point**.

**NOTE:** Although the CPDM module and test point facility type are both referenced in this procedure, instructions apply to any PCS Axis module and facility type.

- **5** If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 6 Click **Click Add** to open the *Add Record* dialog box (Figure 7-14). Then continue with one of the following steps:

**HINT:** Alternatively, you can use keyboard shortcut keys to add records. Press **F4** to add an inspection record for an existing facility in the grid. Press **F8** to add a new facility in the grid with an inspection record.

- To add an inspection record for an existing facility in the grid, continue with **step 7**.
- To add a new facility in the grid with an inspection record, continue with step f (page 237).

î	Add Record		×
		and Inspection Record	
(	Test Point Inspect	ion Record	
	ROW Code	Relative Milepost	Pipe
۲	T-1401	0.000	1
	T-1401	0.001	1
	T-1401	0.002	1
	T-1401	1.000	1
	T-1401	1.500	1
	T-1401	1.627	1
	T-1401	1.750	1
	T-1401	2.000	1
	T-1401	2.250	1
	T-1401	2.500	1
٩	)		
			Row Count: 103
			💾 Save   🚳 Cancel

Figure 7-14. Add Record

- 7 To add an inspection record for an existing facility in the grid:
  - a Click the option Test Point Inspection Record.
  - **b** Select a pipeline with the facility you want to add an inspection record. For example, pipeline *T*-*1401* and the facility at *Relative Milepost 0.000* (Figure 7-14).

c Click 💾 Save to display required field(s) for data entry (Figure 7-15).

Add Record		×
ROW Code and Pipe	- T-1401	
Milepost	0.000	
Inspection Date	4/4/2014 -	
Effective Date	·	
	💾 Save   🚳	Cancel

Figure 7-15. Add Record

- **d** Type an inspection date in the **Inspection Date** field using the format MM/DD/YYYY to indicate the month, day, and year. Or click the down arrow in the field and select an inspection date using a calendar.
- e Click **Save** to close the dialog box and add an inspection record in the grid for the existing facility (Figure 7-16).

Edit	t CPDM Data 🗙				Cathodic Protection Da	ta manager (er owr)	Welcome John Smith	
Ir	nformation	spection Maint	tenance 📑 Selec	ted ROWs 🔠 My Test Poin	nt Inspections Layout_1 🛛 🛚 [F	CS] ROW Code and Milepos	t 🔅 Options	P Custo
	Test Point	Rectifier	Foreign Bond Galva	nic Anode Tank				Based
	ss Find					🛛 🕄 Build Survey 🖓 G	Add   🗡 Delete   😘 Refr	esh   😫
	ROW Code and Pipe	Milepost	Inspection Date	Survey	Structure P/S	Casing P/S	Foreign P/S	Technici
	T-1401	0.000	1/31/2014 12:00 AM					
	T-1401	0.001	3/22/2006 12:00 AM	2006 Annual Survey	-1.150			jsmith
	T-1401	0.002	1/30/2014 12:00 AM	2014 Annual Survey	-1.451	-0.509		jsmith
	T-1401	1.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.173		-0.428	jsmith
	T-1401	1.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.963		-1.410	jsmith
	T-1401	1.627	3/22/2006 12:00 AM	2006 Annual Survey	-0.922	-0.298		jsmith
	T-1401	1.750	3/22/2006 12:00 AM	2006 Annual Survey	-0.895	-0.412		jsmith
	T-1401	2.000	3/22/2006 12:00 AM	2006 Annual Survey		-0.635		jsmith
	T-1401	2.250	3/22/2006 12:00 AM	2006 Annual Survey	-1.091			jsmith
	T-1401	2.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.996		-0.739	jsmith
	T-1401	3.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.717		-0.852	jsmith
	T-1401	3.218	3/22/2006 12:00 AM	2006 Annual Survey	-1.492			jsmith
	T-1401	3.250	3/22/2006 12:00 AM	2006 Annual Survey	-1.118			jsmith
	T-1401	3.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.694		-0.184	jsmith
	T-1401	4.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.686		-0.707	jsmith
	T-1401	5.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.116		-0.665	jsmith
	T-1401	5.275	3/22/2006 12:00 AM	2006 Annual Survey	-1.451		-1.339	jsmith
	T-1401	6.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.024		-0.954	jsmith
	T-1401	7.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.094		-0.648	jsmith
	T-1401	8.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.831		-0.862	jsmith
	T-1401	8.500	3/22/2006 12:00 AM	2006 Annual Survey	-1.020		-0.638	jsmith
	T-1401	8.717	3/22/2006 12:00 AM	2006 Annual Survey	-1.080			jsmith
	T 1401			2006 Americal Sciences				

Figure 7-16. Inspection Grid

- **f** Provide other inspection data in remaining fields. For example, click the
   **Survey** field and select a survey folder in the selection list. Then enter a structure pipe-to-soil reading in the field **Structure P/S**.
- g Click 🔄 Refresh to update the grid.
- **8** To add a new facility with an inspection record in the *Inspection* grid:
  - a Click the option Test Point Facility and Inspection Record.

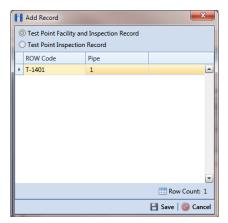


Figure 7-17. Add Record

**b** Click **Save** to display required field(s) for data entry. Required fields are identified with the **S** icon, such as *Milepost* (Figure 7-18).

Add Record			×
ROW Code and Pipe	T-1401	-	
Milepost	8		
Inspection Date	1/30/2014 12:00 AM	*	
	2 🗄	Save	S Cancel

Figure 7-18. Add Record

- **c** Type the facility milepost number in the **Milepost** field. Based on your system configuration, the *Milepost* field may have a different caption for *User Location Name*, such as *Station Number* or other type of identifier.
- **d** Type an inspection date in the **Inspection Date** field using the format MM/DD/YYYY to indicate the month, day, and year. Or click the down arrow in the field and select an inspection date using a calendar.
- e Click **Save** to close the dialog box and add the new facility with an inspection record in the grid (Figure 7-19).

Edit C	PDM Data 🗙							
Info	ormation In	spection Maint			nt Inspections Layout_1 🛛 🖉 [F	CS] ROW Code and Milepos	at 🔅 Options	🕈 Cust
	Test Point	Rectifier	Foreign Bond Galvan	ic Anode Tank				📄 Bas
6.5	Find					Build Survey   G	🕽 Add   🗡 Delete   😏 Refr	resh   🖢
	ROW Code and Pipe	Milepost	Inspection Date	Survey	Structure P/S	Casing P/S	Foreign P/S	Techni
	T-1401	0.000	1/31/2014 12:00 AM	2014 Annual Survey	-1.094			jsmith
	T-1401	0.001	3/22/2006 12:00 AM	2006 Annual Survey	-1.150			jsmith
	T-1401	0.002	1/30/2014 12:00 AM	2014 Annual Survey	-1.451	-0.509		jsmith
	• T-1401 -	0.003	1/31/2014 12:00 AM					
	T-1401	1.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.173		-0.428	jsmith
	T-1401	1.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.963		-1.410	jsmith
	T-1401	1.627	3/22/2006 12:00 AM	2006 Annual Survey	-0.922	-0.298		jsmith
	T-1401	1.750	3/22/2006 12:00 AM	2006 Annual Survey	-0.895	-0.412		jsmith
	T-1401	2.000	3/22/2006 12:00 AM	2006 Annual Survey		-0.635		jsmith
	T-1401	2.250	3/22/2006 12:00 AM	2006 Annual Survey	-1.091			jsmith
	T-1401	2.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.996		-0.739	jsmith
	T-1401	3.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.717		-0.852	jsmith
	T-1401	3.218	3/22/2006 12:00 AM	2006 Annual Survey	-1.492			jsmith
	T-1401	3.250	3/22/2006 12:00 AM	2006 Annual Survey	-1.118			jsmith
	T-1401	3.500	3/22/2006 12:00 AM	2006 Annual Survey	-0.694		-0.184	jsmith
	T-1401	4.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.686		-0.707	jsmith
	T-1401	5.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.116		-0.665	jsmith
	T-1401	5.275	3/22/2006 12:00 AM	2006 Annual Survey	-1.451		-1.339	jsmith
	T-1401	6.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.024		-0.954	jsmith
	T-1401	7.000	3/22/2006 12:00 AM	2006 Annual Survey	-1.094		-0.648	jsmith
	T-1401	8.000	3/22/2006 12:00 AM	2006 Annual Survey	-0.831		-0.862	jsmith
	T-1401	8.500	3/22/2006 12:00 AM	2006 Annual Survey	-1.020		-0.638	jsmith
	T 1401			2006 Annual Concer				

Figure 7-19. Inspection Grid

- **f** Provide other inspection data in remaining fields. For example, click the
   **Survey** field and select a survey folder in the selection list. Then enter a structure pipe-to-soil reading in the field **Structure P/S**.
- g Click 🔄 Refresh to update the grid.

#### Adding a Facility Maintenance Record

Information in this section covers the following scenarios for adding a record in the *Maintenance* grid:

- adding a maintenance record for an existing facility (step 7, page 241)
- adding a new facility with a maintenance record (**step f**, page 242)

Complete the following steps:

1 Click the **Select ROWs** button *P* to open the *Select ROWs* window (Figure 7-20).

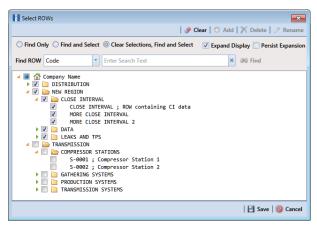


Figure 7-20. Select ROWs

2 Select one or more pipeline segments with facilities you want to work with, then click **Save** to close the window.

3 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM Data to open the *Edit CPDM Data* window (Figure 7-21).

Edit CPDM Data ×											
Information Inspection Maintenance Selected ROWs III My Test Point Maintenance Layout_1 🐁 (PCS) ROW Code and Milepost 🔅 Options 🖋 Cus											
	Test Point	Rectifier	Foreign Bond	Galvanic Anode	Tank				🔡 Bas		
💶 Find											
Γ	ROW Code and Pipe	Milepost	Repair Found Date	Test Point Repair Code	Repair Initiated Date	Repair Corrected Date	Reference Number	Repair Priority	Repair Remarks		
	• T-1403	0.000	1/5/2006	23	1/5/2006	1/5/2006	3257	Crit	Destroyed		
	T-1403	0.507	1/5/2006	4	1/5/2006	1/5/2006	3701	Crit	Destroyed		
	T-1403	0.607	1/8/2011	5			3291	Low	Needs paint		
	T-1403	1.059	3/8/2011	6	3/8/2011	3/8/2011	2621	Crit	Destroyed		
	T-1403	2.703	3/8/2011	6			1032	Low	Needs paint		
	T-1403	2.753	3/8/2011	24	3/8/2011	3/8/2011	9925	Med	Needs calibration		
	T-1403	2.798									
Γ	T-1403	5.869	3/8/2011	36	3/8/2011	3/8/2011	433	Med	Needs calibration		
	T-1403	7.872	1/5/2006	5	1/5/2006	1/5/2006	6529	Low	Needs paint		
	T-1403	8.877	1/5/2006	20	2/9/2006	2/9/2006	2114	Med	Needs calibration		
	T-1403	10.190									
	T-1403	10.191									
	T-1403	12.850	3/8/2011	5	3/8/2011	3/8/2011	5797	Low	Leads are loose		
	T-1403	15.000									
	T-1403	20.990	3/8/2011	5	3/8/2011	3/8/2011	3033	Low	Needs paint		
	T-1403	20.995									
	T-1403	23.762									
	T-1403	25.778									
	T-1403	25.779									
	T-1403	29.812									
	T-1403	32,490									

Figure 7-21. Maintenance Grid

4 Open the *Maintenance* grid for a facility type. For example, click the Maintenance tab Maintenance and then a facility type button, such as Test Point Test Point

**NOTE:** Although the CPDM module and test point facility type are both referenced in this procedure, instructions apply to any PCS Axis module and facility type.

- 5 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 6 Click **•** Add to open the *Add Record* dialog box (Figure 7-22). Then continue with one of the following steps:

**HINT:** Alternatively, you can use keyboard shortcut keys to add records. Press **F4** to add an maintenance record for an existing facility in the grid. Press **F8** to add a new facility in the grid with an maintenance record.

- To add a maintenance record for an existing facility in the grid, continue with **step 7**.
- To add a new facility in the grid with a maintenance record, continue with **step f** (page 242).

0	Test Point Ma	aintenance Record		
F	ROW Code	Relative Milepost	Pipe	
1	Г-1403	0.000	1	4
1	Г-1403	0.507	1	
1	Г-1403	0.607	1	
1	Г-1403	1.059	1	
1	Г-1403	2.703	1	
	Г-1403	2.753	1	
1	Г-1403	5.869	1	
1	Г-1403	7.872	1	
1	Г-1403	8.877	1	
1	Г-1403	12.850	1	
1	Г-1403	20.990	1	
			-	

Figure 7-22. Add Record

- 7 To add a maintenance record for an existing facility in the grid:
  - **a** Click the option **Test Point Maintenance Record**. Then select a facility in the list of facilities. For example, the facility at *Milepost 2.753* (Figure 7-22).
  - **b** Click **Save** to display required field(s) for data entry (Figure 7-23). Required fields are identified with the **S** icon, such as *Test Point Repair Code*.

Add Record	×
ROW Code and Pipe	T-1403 -
Milepost	2.753
Repair Found Date	4/4/2014 *
Test Point Repair Code	$\mathbf{S}$
Effective Date	3/23/2005 👻
	💾 Save   🚳 Cancel

Figure 7-23. Add Record

- **c** Type a date in the field **Repair Found Date** using the format MM/DD/YYYY to indicate the month, day, and year. Or click the down arrow in the field and select a date using a calendar.
- **d** Type a repair code in the field **Test Point Repair Code**. Repair code is a designation used by your company to identify the type of repair. The field accepts up to 15 alphanumeric characters including special characters such as the pound sign (#), asterisk (\*), or hyphen (-).
- e Click **Save** to close the dialog box and add a maintenance record in the grid for the existing facility (Figure 7-24).

Inf	Information Inspection Maintenance										
	Test Point	Rectifier	Foreign Bond		Tank		in coac and intepos		Ba		
	Ind   ♦ Add   ★ Delete   ♀ Refresh   ₽										
	ROW Code and Pipe	Milepost	Repair Found Date	Test Point Repair Code	Repair Initiated Date	Repair Corrected Date	Reference Number	Repair Priority	Repair Remarks		
	T-1403	0.000	1/5/2006	23	1/5/2006	1/5/2006	3257	Crit	Destroyed		
	T-1403	0.507	1/5/2006	4	1/5/2006	1/5/2006	3701	Crit	Destroyed		
	T-1403	0.607	1/8/2011	5			3291	Low	Needs paint		
	T-1403	1.059	3/8/2011	6	3/8/2011	3/8/2011	2621	Crit	Destroyed		
	T-1403	2.703	3/8/2011	6			1032	Low	Needs paint		
	T-1403	2.753	3/8/2011	24	3/8/2011	3/8/2011	9925	Med	Needs calibratio		
	• T-1403	2.798	1/31/2014	#123-A							
	T-1403	5,869	3/8/2011	36	3/8/2011	3/8/2011	433	Med	Needs calibratio		
	T-1403	7.872	1/5/2006	5	1/5/2006	1/5/2006	6529	Low	Needs paint		
	T-1403	8.877	1/5/2006	20	2/9/2006	2/9/2006	2114	Med	Needs calibration		
	T-1403	10.190									
	T-1403	10.191									
	T-1403	12.850	3/8/2011	5	3/8/2011	3/8/2011	5797	Low	Leads are loose		
	T-1403	15.000									
	T-1403	20.990	3/8/2011	5	3/8/2011	3/8/2011	3033	Low	Needs paint		
	T-1403	20.995									
	T-1403	23.762									
	T-1403	25.778									
	T-1403	25.779									
	T-1403	29.812									
	T-1403	32,490									

Figure 7-24. Maintenance Grid

- **f** Provide other maintenance data as needed, such as *Repair Initiated Date*, *Repair Corrected Date*, *Repair Priority*, and *Repair Remarks*.
- g Click 🔄 **Refresh** to update the grid.
- **8** To add a new facility in the grid with a maintenance record:
  - **a** Click the option **Test Point Facility and Maintenance Record** in the *Add Record* dialog box (Figure 7-25).

Add Record	×								
Test Point Facility and Maintenance Record									
O Test Point Maintenan	ice Record								
ROW Code	Pipe								
T-1403	1								
	Ţ								
	Row Count: 1								
	💾 Save   🚳 Cancel								

Figure 7-25. Add Record

- **b** Select a pipeline in the dialog box that you want to add a new facility and maintenance record. For example, pipeline *T-1403* (Figure 7-25).
- c Click Save to display required field(s) for data entry (Figure 7-26).
   Required fields are identified with the sicon, such as *Milepost* and *Test Point Repair Code*.

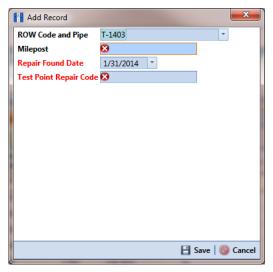


Figure 7-26. Add Record

- **d** Type the facility milepost number in the **Milepost** field. Based on your system configuration, the *Milepost* field may have a different caption for *User Location Name*, such as *Station Number* or other type of identifier.
- e Type a date in the field **Repair Found Date** using the format MM/DD/YYYY to indicate the month, day, and year. Or click the down arrow in the field and select a date using a calendar.
- f Type a repair code in the field Test Point Repair Code. Repair code is a designation used by your company to identify the type of repair. The field accepts up to 15 alphanumeric characters including special characters such as the pound sign (#), asterisk (\*), or hyphen (-).
- **g** Click **Bave** to close the dialog box and add the new facility with an maintenance record in the grid (Figure 7-27).

	Information Inspection Maintenance 📄 Selected ROWs 🏢 My Test Point Maintenance Layout_1 🐁 [PCS] ROW Code and Milepost 🕸 Options 🗲 Cus										
		Test Point	Rectifier	Foreign Bond	Galvanic Anode	[ank				Basec	
	💶 Find										
Ì	_	ROW Code and Pipe	Milepost	Repair Found Date	Test Point Repair Code	Repair Initiated Date	Repair Corrected Date	Reference Number	Repair Priority	Repair Remarks	
		T-1403	0.000	1/5/2006	23	1/5/2006	1/5/2006	3257	Crit	Destroyed	
		T-1403	0.507	1/5/2006	4	1/5/2006	1/5/2006	3701	Crit	Destroyed	
		T-1403	0.607	1/8/2011	5			3291	Low	Needs paint	
	•	T-1403	0.800	1/31/2014	#552-C						
		T-1403	1.059	3/8/2011	6	3/8/2011	3/8/2011	2621	Crit	Destroyed	
		T-1403	2.703	3/8/2011	6			1032	Low	Needs paint	
		T-1403	2.753	3/8/2011	24	3/8/2011	3/8/2011	9925	Med	Needs calibration	
		T-1403	2.798	1/31/2014	#123-A	1/31/2014	1/31/2014	3214	Low	Needs paint	
		T-1403	5.869	3/8/2011	36	3/8/2011	3/8/2011	433	Med	Needs calibration	
		T-1403	7.872	1/5/2006	5	1/5/2006	1/5/2006	6529	Low	Needs paint	
		T-1403	8.877	1/5/2006	20	2/9/2006	2/9/2006	2114	Med	Needs calibration	
		T-1403	10.190	1/31/2014	#234-B	1/31/2014	1/31/2014	1219	Med	Needs calibration	
		T-1403	10.191								
		T-1403	12.850	3/8/2011	5	3/8/2011	3/8/2011	5797	Low	Leads are loose	
		T-1403	15.000								
		T-1403	20.990	3/8/2011	5	3/8/2011	3/8/2011	3033	Low	Needs paint	
		T-1403	20.995								
		T-1403	23.762								
		T-1403	25.778								
		T-1403	25.779								
		T-1403	29.812								

Figure 7-27. Maintenance Grid

- **h** Provide other maintenance data as needed, such as *Repair Initiated Date*, *Repair Corrected Date*, *Repair Priority*, and *Repair Remarks*.
- i Click 😏 Refresh to update the grid.

# Creating History Records Using an Effective Date

A history record is a record that identifies changes in facility information, such as the operating status changing from active to inactive. Instead of deleting a facility record, create a history record.

History records help ensure compliance reports are accurate and other reports include correct facility data. For example, information for inactive facilities does not appear in a compliance or scheduling report. Other reports provide an optional filter for excluding inactive facilities. Because information for the time period prior to deactivating a facility is still valuable and is often needed for compliance reports, creating a history record helps ensure facility reporting is accurate.

Other scenarios describing when to create a history record include those in the following list:

- A facility is deactivated for a period of time and you want to ensure records exist showing when the facility was first activated, then deactivated, and finally reactivated again. By creating history records for each of these events, a complete history is available showing (1) when the facility was first active; (2) when the facility was deactivated; and (3) when the facility was reactivated.
- When a change is made to the protection criteria value, such as changing the value from .85 On to 100 mV, creating a history record with an *Effective Date* identifying when the change occurred allows you to maintain a history for all readings with .85 On prior to the *Effective Date*, as well as all readings with 100 mV after the *Effective Date*. Creating a history record in this case is important because the facility may meet the 100mV criterion but fail the .85 On criterion. If history records do not exist, changing the criteria may show readings that were previously within criteria, are now out of criteria.
- You remove a casing and want to document that you are no longer recording *Casing P/S* inspection readings. Instead of disabling the *Activate Casing P/S* field in the *Information* grid, create a history record instead. History records provide useful data for an audit or compliance review.

The following list identifies other considerations when creating a history record:

- When you create a history record, all fields in the original record copy to the new record. Both records are initially the same except for the *Effective Date*. This allows you to change only the field(s) that are different in the new record and also create a history trail that includes the previous record.
- When the operating status of a facility changes from active to inactive or vice versa, do not use the original information record to change the operating status. Doing so causes information for the original record to be excluded in reports, such as compliance and delinquency reports. Create a history record to document this type of change instead.

- Do not enter the date a facility was put into service as the *Effective Date*. Use the *Effective Date* field to enter a date when a facility is taken out of service; when a change is made to the protection criteria; or when a facility is made inactive. *Effective Date* is used only with history records; it is empty in the original facility record. When a facility is put into service, add the date in the field labeled *Installation Date*.
- To help with using history records consistently, enable the field labeled *Warn Before Permanent History Record Changed Option* in Options (Tools > Options). When enabled, PCS Axis displays a warning message stating a history record should first be created before making changes.

#### To create a history record

Complete the following steps:

 Select one or more pipeline segments in the Select ROWs window (Figure 7-28). Select pipeline segments with facilities you want to work with, then click Save to close the window.

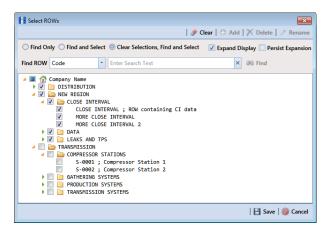


Figure 7-28. Select ROWs

Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM **Data** to open the *Edit CPDM Data* window (Figure 7-29).

Inf	ormation Ins	spection Main		Selected ROW	is 📰 My TP Info	ormation Layout	🐁 (PCS) ROW	Code and Mile	post	Coptions	🕈 Cus
	Test Point	Rectifier	Foreign Bond	ialvanic Anode	Tank						📄 Bas
51	Find								🛛 🗘 🗘	🗡 Delete   😏 Rel	iresh   🔅
	ROW Code and Pipe	Milepost	Location Description	Test Point Protection Criteria	Activate Structure P/S	Activate Casing P/S	Activate Structure IRF	Activate Foreign P/S	Facility Active	Effective Date	Perm
	• T-1401	0.000	Bethel Station	.85 On	V						
	T-1401	0.001	Rectifier R-200	.85 On	V		V		$\checkmark$		
	T-1401	1.000	Alderman #1	.85 On	1		1	1	1		
	T-1401	1.500	Williford E #1	.85 On	V		<b>V</b>	V	V		
	T-1401	1.627	FM 321	.85 On	1	1	1		1		
	T-1401	1.750	Park Rd. 64	.85 On	V	V	V		1		
	T-1401	2.000	Texas 84	.85 On	1	1	1		1		
	T-1401	2.250	County Rd.	.85 On	V		V		1		
	T-1401	2.500	Fryer B	.85 On	1		V	1	1		
	T-1401	3.000	Whitaker #1	.85 On	V		V	V	1		
I I I	Facility Level Ov	erride		_			_	_	_	E Ro	w Count
	Selected	Scheduling Typ	e Name Last Inspecti	on Date Due Dates			Delinquent Date	e Due Date (	Calculation Metho	od Time Between Si	urveys
	🗸 ) Yes	Test Point	3/22/2006	12/2013 [[	Del 06/22/2007], 1	/2014, 1/2015	6/22/2007	Targets		12 Months	
	•		н							TT Rov	)

Figure 7-29. Test Point Information Grid

- **3** Open the *Information* grid for a facility type. For example, click the **Information** tab **Information** and then a facility type button, such as **Test Point Test Point**.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 Click Add to open the *Add Record* dialog box. (Figure 7-30). You can also use the F4 keyboard shortcut key after selecting the facility record.

(	Test Point Inform	nation Record		
	ROW Code	Relative Milepost	Pipe	
	T-1401	1.222	1	
	T-1401	1.500	1	
Þ	T-1401	1.627	1	
	T-1401	1.750	1	
	T-1401	2.000	1	
	T-1401	2.250	1	
	T-1401	2.500	1	
	T-1401	3.000	1	
	T-1401	3.218	1	
	T-1401	3.250	1	
4				•

Figure 7-30. Add Record

- 6 Click the option **Test Point Information Record**.
- 7 Select a facility record in the *Add Record* dialog box that you want to create a history record. For example, the facility record with *Relative Milepost 1.627*.
- 8 Click 💾 Save to close the dialog box and return to the *Information* grid.

PCS Axis adds a new record in the *Information* grid for the selected facility with today's date showing in the *Effective Date* field. The *Facility Active* check box is also enabled by default in order for the facility to be included in facility survey schedules. The original record becomes the history record (Figure 7-31).

Int			pection Mair			16.4	elected ROWs	My TP Informatio	on Layout 🔌	[PCS] ROW Code	and Milepost		_	🕈 Custor
		Point	Rectifier	Foreign	Bond	Galvani	Anode	Tank				0	Delete   😏 Refr	Based
	S Fir		1			_							Delete   😘 Kefr	
		OW Code nd Pipe	Milepost	Effective	Date	Locati	on Description	Test Point Protection Criteria	Activate Structure P/S	Activate Casing P/S	Activate Structure IRF	Activate Foreign P/S	Facility Active	Perman Comme
	T-	1401	0.000			Bethel	Station	.85 On	4		1		V	-
	T-	1401	0.001			Rectifi	er R-200	.85 On	1		1		<b>V</b>	
	T-	L401	1.000			Aldern	nan #1	.85 On	1		1	1	1	
	T-	1401	1.500			Willifo	rd E #1	.85 On	V		1	7	V	
	T-	L401	1.627			FM 32	L L	.85 On	1	1	1		V	
	• T-	L401	1.627	12/10/201	3	<ul> <li>FM 32</li> </ul>	1	.85 On	V	V	V		V	
	T-	L401	1.750			Park R	d. 64	.85 On	1	1	1		V	
	T-	1401	2.000			Texas	84	.85 On	1	<b>V</b>	1		V	
	T-	1401	2.250			Count	y Rd.	.85 On	1		1		1	
	T-	1401	2.500			Fryer E		.85 On	1		1	1	V	
	T-	1401	3.000			Whital	ker #1	.85 On	7		1	7	V	
	T-	L401	3.218			Count	y Road	.85 On	1		1		1	
4														)
													ttt Row	v Count: 1
F	Facil	ty Level Ove	rride											_
ſ		Selected	Scheduling Ty	pe Name	.ast Insp	ection Dat	e Due Dates		Delin	quent Date	Due Date Calculat	ion Method	Time Between Su	irveys
	1	Yes	Test Point		3/22/20	06	12/2013 [Del	06/22/2007], 1/2014,	1/2015 6/22	/2007 7	argets	1	2 Months	-
	4													

Figure 7-31. Test Point Information Grid

- **9** Change information in the new record as needed. For example, to document when the facility was taken out of service:
  - Enter the out-of-service date in the *Effective Date* field (Figure 7-31).
  - Click the *Facility Active* check box to remove the check mark and subsequently deactivate the facility.
  - As a recommendation, enter a comment in the *Permanent Comments* field about the record change.

## Viewing Records in a Grid

By default PCS Axis displays records in a data entry grid based on the selected ROW(s) and in alphanumeric order by *ROW Code and Pipe* and then *Milepost*. As an option you can choose to display records based on a route or schedule instead (Figure 7-32).

Topics in this section include those in the following list. Examples are based on the CPDM module, however the information applies to all PCS Axis modules.

- Viewing Records Based on Selected ROWs (page 250)
- Viewing Records Based on a Route (page 253)
- Viewing Records Based on a Schedule (page 257)

A status line near the top of the data entry grid identifies the mode for displaying records (by route, schedule, or selected ROWs); the currently selected layout and sort theme; and a filter icon indicating grid data is filtered. Hover the mouse over the filter icon to display a tool tip with a description for currently selected filters. For example, the filter *Active Facilities Only* is applied in the data grid shown in the following example (Figure 7-32).

	CPDM Data ×	Reports / Gra	Tools Field Con		~	ection Data Ma			e John Smith   🖲	
Ir		pection Main	he	Selected ROWs		Layout Theme_1 🦞	My Inspection Grid Sc	rt Theme_1	🗘 Options 🖌 C	-
	Test Point	Rectifier	Foreign Bond	<ol> <li>Active Facilit</li> </ol>	ties Only k		1.0		E 6	
	Find						Build Surv	ey   🗢 Add   🗡 [	Delete   😘 Refresh	18
	ROW Code and Pipe	Milepost	Relative Milepost	Effective Date	Survey	Inspection Date	Structure P/S (Volts)	Casing P/S (Volts)	Foreign P/S (Volts)	Tec
	• T-1401	0.000	0.000		2006 Annual Survey	3/22/2006	-1.141			jsm
	T-1401	0.001	0.001		2006 Annual Survey	3/22/2006	-1.150			jsm
	T-1401	1.000	1.000		2006 Annual Survey	3/22/2006	-1.173		-0.428	jsm
	T-1401	1.500	1.500		2006 Annual Survey	3/22/2006	-0.963		-1.410	jsm
	T-1401	1.627	1.627		2006 Annual Survey	3/22/2006	-0.922	-0.298		jsm
	T-1401	1.750	1.750		2006 Annual Survey	3/22/2006	-0.895	-0.412		jsm
	T-1401	2.000	2.000		2006 Annual Survey	3/22/2006		-0.635		jsm
	T-1401	2.250	2.250		2006 Annual Survey	3/22/2006	-1.091			jsm
	T-1401	2.500	2.500		2006 Annual Survey	3/22/2006	-0.996		-0.739	jsm
	T-1401	3.000	3.000		2006 Annual Survey	3/22/2006	-0.717		-0.852	jsm
	T-1401	3.218	3.218		2006 Annual Survey	3/22/2006	-1.492			jsm
	T-1401	3.250	3.250		2006 Annual Survey	3/22/2006	-1.118			jsm
	T-1401	3.500	3.500		2006 Annual Survey	3/22/2006	-0.694		-0.184	jsm
	T-1401	4.000	4.000		2006 Annual Survey	3/22/2006	-0.686		-0.707	jsm
	T-1401	5.000	5.000		2006 Annual Survey	3/22/2006	-1.116		-0.665	jsm
	T-1401	5.275	5.275		2006 Annual Survey	3/22/2006	-1.451		-1.339	jsm
	T-1401	6.000	6.000		2006 Annual Survey	3/22/2006	-1.024		-0.954	jsm
	T-1401	7.000	7.000		2006 Annual Survey	3/22/2006	-1.094		-0.648	jsm
	T-1401	8.000	8.000		2006 Annual Survey	3/22/2006	-0.831		-0.862	jsm
	T-1401	8.500	8.500		2006 Annual Survey	3/22/2006	-1.020		-0.638	jsm
	T-1401	8.717	8.717		2006 Annual Survey	3/22/2006	-1.080			jsm
	T-1401	8,800	8,800		2006 Annual Survey	3/22/2006	-1.720			jsm

Figure 7-32. Status Line

### Viewing Records Based on Selected ROWs

To display records in a data entry grid based on pipeline segments selected in the *Select ROWs* window, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-33). Select pipeline segments with facilities you want to work with, then click Save to close the window.

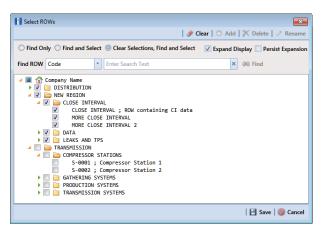


Figure 7-33. Select ROWs

- Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM **Data** to open the *Edit CPDM Data* window.
- 3 Select a data entry grid. For example, click the **Inspection** tab **Inspection** and then the **Test Point** button **Test Point** to display the *Test Point Inspection* data entry grid (Figure 7-34).

IPipe         Milepost           10         10           10         10	Effective Date	3/4/1331 12.00.00	Survey 1981 - 1990 Ten Year S 1991 - 2000 Ten Year S	-1.030	Casing P/S	Foreign P/S	Insulator P/S	Technician EL	Inspe
10		3/4/1991 12:00:00						EL	
		3/4/1331 12.00.00							
10			2001 - 2010 Ten Year S	-1.050				DM	
10		5/10/2001 12/00/0///	1981 - 1990 Ten Year S	-1.080					
		5/10/1502 12/00/011							
								FI	
			1991 - 2000 Ten Year S						
10		3/12/2003 12:00:0	2001 - 2010 Ten Year S	-1.190					
10		3/15/1984 12:00:0	1981 - 1990 Ten Year S	-1.110				DW	
10		3/22/1994 12:00:0	1991 - 2000 Ten Year S	-1.090				A	
10		3/12/2004 12:00:0	2001 - 2010 Ten Year S	-1.030					
10		3/14/1985 12:00:0	1981 - 1990 Ten Year S	-1 540				p	
	10 10 10	10 10 10 10 10 10 10 10	10         3/12/2002 (2:060           10         3/10/198 (1:2600           10         3/19/198 (1:2000           10         3/12/2003 (2:060           10         3/12/2003 (2:060           10         3/12/2003 (2:060           10         3/12/2004 (2:060           10         3/12/2004 (2:060           10         3/12/2004 (2:060           10         3/12/2004 (2:060	10         31/12/2002 12:00-0         2001 - 2010 Ten Year S           10         31/01/0188 12:00-0         11890 - Ten Year S           10         55/1981 12:00-0         1901 - Ten Year S           10         31/12/2013 12:00-0         2001 - 2010 Ten Year S           10         31/12/2013 12:00-0         2001 - 2010 Ten Year S           10         31/12/2013 12:00-0         2001 - 2010 Ten Year S           10         31/12/2013 12:00-0         1001 - 2010 Ten Year S           10         31/12/2014 12:00-0         1001 - 2010 Ten Year S           10         31/12/2014 12:00-0         1201 - 2010 Ten Year S	International         International         International         International           10         3/10/2002 120000.         2001 - 2001 Ten Years         1.200           10         3/01/2003 120000.         1981 - 1900 Ten Years         1.200           10         3/01/2003 120000.         1991 - 2000 Ten Years         1.200           10         3/01/2003 120000.         2001 Ten Years         1.200           10         3/02/2003 12000.         2001 Ten Years         1.100           10         3/02/2004 12000.         1991 - 2000 Ten Years         1.100           10         3/02/2004 12000.         1991 - 2000 Ten Years         1.100           10         3/02/2004 12000.         2001 Ten Years         1.100           10         3/02/2004 12000.         2001 Ten Years         1.100           10         3/02/2004 12000.         2001 - 2001 Ten Years         1.100	International         International         International         International           10         3/11/2020 12:000         2001 - 2010 Ten Year 5         -1.280           10         3/01/0933 12:000         1991 - 2000 Ten Year 5         -1.280           10         3/01/0933 12:000         1991 - 2000 Ten Year 5         -1.280           10         3/01/2020 12:000         2001 - 2010 Ten Year 5         -1.190           10         3/01/2020 12:000         1901 Ten Year 5         -1.110           10         3/02/2049 12:000         1901 - 2000 Ten Year 5         -1.100           10         3/02/2040 12:000         1901 - 2000 Ten Year 5         -1.100	International         Control         Control         Control           10         3/12/2021 22:000         2001 - 2001 Ten Year 5         -1.280           10         3/01/0933 12:000         1901 - 1900 Ten Year 5         -1.280           10         3/01/0933 12:000         1901 - 2000 Ten Year 5         -1.280           10         3/12/2021 12:000         2001 - 2010 Ten Year 5         -1.190           10         3/12/2021 12:000         2001 - 2010 Ten Year 5         -1.190           10         3/12/2024 12:000         1901 - 1900 Ten Year 5         -1.100           10         3/12/2024 12:000         1901 - 2010 Ten Year 5         -1.100	int         int         int         int         int           10         3/10/2021 20000.         2001 - 2001 Ten Year 5         -1.20           10         3/10/2021 20000.         1901 Ten Year 5         -1.20           10         3/10/2021 20000.         1901 Ten Year 5         -1.20           10         3/10/2001 20000.         1901 Ten Year 5         -1.20           10         3/10/2001 20000.         2001 Ten Year 5         -1.20           10         3/10/2001 20000.         1901 Ten Year 5         -1.100           10         3/10/2004 120000.         1901 - 2001 Ten Year 5         -1.100           10         3/10/2004 120000.         1901 - 2001 Ten Year 5         -1.100           10         3/10/2004 120000.         2001 - 2001 Ten Year 5         -1.100           10         3/10/2004 120000.         2001 - 2001 Ten Year 5         -1.100	Add         Add Add Add Add Add Add Add Add Add Add

Figure 7-34. Test Point Inspection Grid

- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- **5** Complete either **step a** or **b** to display records in the grid based on selected ROWs:
  - a Click the **Based On** tab **Based On** to open the Based On panel (Figure 7-35) and then complete the following steps:
    - 1) Click the option Selected ROWs, then click 💾 Apply.
    - 2) Click 🔀 Close to close the Based On panel.

	on Maintenance			)	θ 📰	N				🌣 Options 🦨 Cu
Test Point	lectifier Foreig	gn Bond Galvanic A	node Tank							B B
3.0										💾 Apply   🕻
Based On     Based On     Gelected ROWs										
O O Route										
Schedule										
💶 Find 🛛 Telluri								🔂 Build Sur	rvey   🔿 Add   🏅	🗡 Delete   😘 Refresh
ROW Code and Pip	e Milepost	Effective Date	Inspection Date	Survey	Structure P/S	Casing P/S	Foreign P/S	Insulator P/S	Technician	Inspection Remarks
ATMOS, TP - 1	18		5/5/1994 12:00:00	1994 Annual Survey	-0.993					
ATMOS, TP - 1	18		5/4/1995 12:00:00	1995 Annual Survey	-0.994					
ATMOS, TP - 1	18		5/1/1996 12:00:00	1996 Annual Survey	-0.992					
ATMOS, TP - 1	18		5/1/1997 12:00:00	1997 Annual Survey	-0.958					
ATMOS, TP - 1	18		5/19/1998 12:00:0	1998 Annual Survey	-0.981					silver-silver chloride
ATMOS, TP - 1	18		5/24/1999 12:00:0	1999 Annual Survey	-0.978					silver-silver chlorid.
ATMOS, TP - 1	18		6/20/2000 12:00:0	2000 Annual Survey	-0.976					silver silver-chlorid.
ATMOS, TP - 1	18		4/17/2001 12:00:0	2001 Annual Survey	-0.996					
ATMOS, TP - 1	18		4/10/2002 12:00:0	2002 Annual Survey	-0.993					
ATMOS, TP - 1	18		4/22/2003 12:00:0	2003 Annual Survey	-0.993					
ATMOS, TP - 1	18		6/4/2004 12:00:00	2004 Annual Survey	-0.987					
ATMOS, TP - 1	18		4/15/2005 12:00:0	2005 Annual Survey	-0.991					
ATMOS, TP - 1	18		6/10/200612:00:0	2005 Annual Survey	-0.983				SHPFFK	SILVER-SILVER CHI
										Row Count
· · · ·										-   0
Name	PCS Held Name	Selected Reading	On	0#	On Date and Time	Compensation Ru	n Is Gps Time	Off Date and Time	: Latitude	Longitude
Test Point Detail Inspe	tion									
Name	PCS Field Name	Selected Reading	On	Off	On Date and Time	Compensation Ru	n Is Gps Time	Off Date and Time	Eatitude	Longitude

Figure 7-35. Based On Selected ROWs

**b** Click the **Options** tab **Options** to open the options page. Then click the option **Selected ROWs** in the *Based On* group box (Figure 7-36).

PCS	PCS Auis	- • •
File	e Modules Data Entry Reports / Graphs Tools Field Computer Help / 🔘 Cathodic Protection Data Manager (CPDM) 🤒 🥨 🥨 😵	hn Smith 🛛 🔨 🔀 Log Out
Q	Edit CPDM Data 🗴	
_	Information Inspection Maintenance	ptions 🕂 Customize
	Test Point Inspection	🗄 Apply 🚳 Cancel
	🗈 Based On	
	© ♥ Sekcte8 R0Ws ● ♥ Sekcte8 R0Ws ● ♥ Schedule	
	🕃 View 🛞 🖼 Grid 🔘 📮 Form	🔍 🖺 Grid And Form 🙇
	Select Layout Theme 💿 (PCS) Test Point Inspections 🔹 Select Sort Theme 🐨 (PCS) ROW Code and Milepost 🔹	
	Select Form Theme Sort Dates ③ Oldest First	
	③ Options	
Selected ROWs	Only include facilities with inspections during the reporting time period     Filter Options     All inspections that meet the filter criteria     All inspections that meet the filter criteria     Apply shot filters to the most resent inspection for administration report timeframe     The most scent inspection after the filter criteria has been met	
Sele	Y Filters         Image: Comparison of C	🔘 🔘 New 'Or' Group
		•
	Currently Active Facilities Only     Currently Inactive Facilities on Currently Inactive ROWs	
	Relative Milepost is between	
	Inspection Date is between and a grant and	
	Survey is equal to	
	Periodic Survey is equal to 🔹	
	Periodic Survey Year is equal to 🔹	
	Technician is equal to	
	<u>C</u>	
		Ľ

Figure 7-36. Based On Options

- **6** If you want to change the grid layout, sorting theme, or apply one or more filters to the grid, complete the following steps:
  - **a** To change the grid layout theme, click the down arrow in the field **Select Layout Theme** and select a theme in the selection list.
  - **b** To change the grid sorting method, click the down arrow in the field **Select Sort Theme** and select a theme in the selection list.
  - **c** To apply a filter to the grid, click the check box for a filter listed in the *Filters* group box (Figure 7-37). You can select more than one.

٥		(
Currently Active Facilities Only Currently Inactive Facilities and Facilities on Curre	the Investion ROWe	
Relative Milepost is between	and g	
Inspection Date is between	- iii and	
Survey is equal to	*	
Periodic Survey is equal to	*	
Periodic Survey Year is equal to	×	
Technician is equal to	9	

Figure 7-37. Filters Group Box

For example, to include only currently active facilities in the grid, click the **Currently Active Facilities Only** check box. A check mark inside the check box indicates a selection. To remove a filter from the grid, clear the check mark by clicking the check box.

**NOTE:** To add a new *AND* or *OR* filter group, refer to *Adding an AND Filter Group* (page 324).

- **d** When applying a date filter to the grid, such as *Inspection Date is between*, set a date range using a calendar or dynamic dates in the following manner:
  - 1) To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - 2) To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- e Click 💾 Apply to save and apply changes.

Records display in the grid based on selected options.

#### Viewing Records Based on a Route

Information in this section explains how to display records in a data entry grid based on a route. A route is a user-created list of facilities for inspection arranged in a particular order. For example, if a route has previously been set up with facilities arranged in survey order, you can work with records in a data entry grid using the same route to display the grid in survey order.

**NOTE:** To perform the following procedure, one or more routes must first be set up. For information about how to set up a route, see *Using a Route* (page 381).

To view records in a grid based on a route, follow these steps:

 Select one or more pipeline segments in the Select ROWs window (Figure 7-38). Select pipeline segments with facilities in a route, then click Save to close the window.

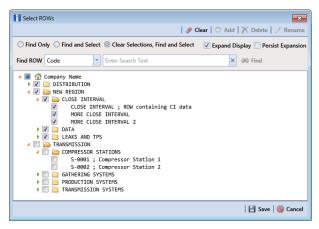


Figure 7-38. Select ROWs

- Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM Data to open the *Edit CPDM Data* window.
- 3 Select a data entry grid. For example, click the Inspection tab Inspection and then the Test Point button Test Point to display the Test Point Inspection data entry grid (Figure 7-39).

8-0937-01         10         3/5/1981 120000.         1981 - 1980 Ten Year \$         -1.030         E         E           8-0937-01         10         3/6/1991 120000.         1991 - 200 Ten Year \$         -1.050         DM           5-0937-01         10         3/6/1991 12000.0.         1991 - 200 Ten Year \$         -1.050         DM           5-0937-01         10         3/6/1991 12000.0.         1991 - 200 Ten Year \$         -1.050         E           5-0937-07         10         3/6/1992 12000.0.         1991 - 200 Ten Year \$         -1.320         E         E           5-0937-07         10         3/16/1992 12000.0.         1991 - 200 Ten Year \$         -1.320         E         E           5-0937-07         10         3/12/2002 12000.0.         1991 - 200 Ten Year \$         -1.320         E         E           5-1447-12         10         3/12/2003 12000.0.         1991 - 200 Ten Year \$         -1.320         TM         E           5-1447-12         10         3/12/2003 12000.0.         1991 - 200 Ten Year \$         -1.300         TM         E           5-1447-12         10         3/12/2003 12000.0.         1991 - 200 Ten Year \$         -1.300         TM         UW         UW         UW         UW         UW				F#			Structure P/S	Casing P/S	Foreign P/S	1.1.1.000	
Bornor All         100         1100000         1991 - 2000 Ten Years         1.050         DM           5-0067-01         10         3/16/2001 120000.         2001 - 2000 Ten Years         1.060         DM           5-0067-01         10         3/16/2001 12000.         2001 - 2000 Ten Years         1.060         P           5-0067-07         10         3/16/2001 22000.         1901 - 2000 Ten Years         1.120         P         P           5-0067-07         10         3/16/1982 122000.         1901 - 2000 Ten Years         1.120         P         P         P           5-0067-07         10         3/12/2002 12000.         2001 - 2000 Ten Years         1.120         E         E         E           5-1447-12         10         3/12/2002 12000.         2001 - 2000 Ten Years         1.120         E         E         E           5-1447-12         10         3/12/2003 12000.         2001 - 2000 Ten Years         1.130         UV         V         V           5-1447-12         10         3/12/2003 12000.         2001 - 2000 Ten Years         1.130         UV         V         V           5-1447-12         10         3/12/2003 12000.         2001 - 2000 Ten Years         1.130         UV         V         V <th></th> <th></th> <th></th> <th>Effective Date</th> <th>Inspection Date</th> <th></th> <th></th> <th>Casing P/S</th> <th>Foreign P/S</th> <th>Insulator P/S</th> <th>Technician</th>				Effective Date	Inspection Date			Casing P/S	Foreign P/S	Insulator P/S	Technician
B-0067-01         10         0.11/0/2001 12/000.         2001 - 2010 Ten Year \$         1.000         0.001           B-0067-07         10         0.11/0/2001 12/000.         1001 - 1001 Ten Year \$         1.100	. 1	S-0767-01									
5-0867-07         10         3/18/1982 12000.         1981 - 1900 Ten Yeers         -1.170           5-0867-07         10         3/18/1992 12000.         1991 - 2000 Ten Yeers         -1.200           5-0867-07         10         3/18/1992 12000.         1991 - 2000 Ten Yeers         -1.200           5-0867-07         10         3/18/1992 12000.         1991 - 2000 Ten Yeers         -1.200           5-1447-12         10         3/19/1992 12000.         1991 - 2000 Ten Yeers         -1.100           5-1447-12         10         3/19/1992 12000.         1991 - 2000 Ten Yeers         -1.100           5-1447-12         10         3/19/1992 12000.         1991 - 2000 Ten Yeers         -1.100           5-1467-12         10         3/19/1992 12000.         1991 - 2000 Ten Yeers         -1.100           5-1467-13         10         3/19/1992 12000.         1991 - 2000 Ten Yeers         -1.100           5-1366-13         10         3/12/2004 12000         1991 - 2000 Ten Yeers         -1.100           5-1366-13         10         3/12/2004 12000         1991 - 2000 Ten Yeers         -1.100           5-1366-13         10         3/12/2004 12000         1991 - 2000 Ten Yeers         -1.100           5-1366-13         10         3/12/2004120000						2001 - 2010 Ten Year S					DIVI
5-097-07         10         3/18/1992 12000         1991 - 2000 Ten Year S         -1,320           5-097-07         10         3/12/2002 12000         2001 - 2000 Ten Year S         -1,320           5-097-07         10         3/12/2002 12000         2001 - 2000 Ten Year S         -1,200           5-1447-12         10         3/12/2003 12000         1991 - 2000 Ten Year S         -1,100           5-1467-12         10         3/12/2003 12000         2001 - 2000 Ten Year S         -1,100           5-1467-12         10         3/12/2003 12000         2001 - 2000 Ten Year S         -1,100           5-1466-13         10         3/12/2004 1200         2001 - 2000 Ten Year S         -1,100           5-1466-13         10         3/12/2004 1200         2001 - 2000 Ten Year S         -1,000           5-1466-13         10         3/12/2004 1200         2001 - 2000 Ten Year S         -1,000           5-1866-13         10         3/12/2004 1200	Ľ	5-0967-07				1981 - 1990 Ten Year S					
B:447-12         10         3/10/383 12000         1981 - 1990 Ten Year S         1.120         EL           D:447-12         10         3/0/1983 12000         1981 - 1990 Ten Year S         -1.230         TM           D:447-12         10         3/0/1993 12000         1981 - 2000 Ten Year S         -1.230         TM           D:447-12         10         3/0/1993 12000         1981 - 2000 Ten Year S         -1.130         TM           D:4467-12         10         3/0/1993 12000         1981 - 1900 Ten Year S         -1.100         TM           D:1866-13         10         3/0/12000         1981 - 2000 Ten Year S         -1.030         A           D:1866-13         10         3/0/22004 12000         1991 - 2000 Ten Year S         -1.030         A           D:1866-13         10         3/0/22004 12000         2001 - 2000 Ten Year S         -1.030         A           D:1867-130         10         3/0/22004 12000         2001 - 2000 Ten Year S         -1.030         A           D:1867-130         10         3/0/22004 12000         1001 - 3/0/1900 Ten Year S         -1.030         A	Ľ	S-0967-07				1991 - 2000 Ten Year S					
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5:1467-12         10         3/12/2003 12:000         2001 - 2010 Ten Years         1.130           5:1866-13         10         3/12/2003 12:000         2001 - 2010 Ten Years         1.130           5:1866-13         10         3/12/2003 12:000         2001 - 2010 Ten Years         1.100           5:1866-13         10         3/12/2003 12:000         2001 - 2010 Ten Years         1.090           5:1866-13         10         3/12/2004 12:000         2001 - 2010 Ten Years         1.090           5:1867-130         10         3/12/2004 12:000         2001 - 2010 Ten Years         1.030	Ľ	5-1447-12	10		3/10/1983 12:00:0	1981 - 1990 Ten Year S	-1.120				EL
S1866-13         10         3/12/1000 110000         1981 - 1990 Ten Year S         -1.10         DW           S1866-13         10         3/22/1941 12000         1981 - 1990 Ten Year S         -1.100         A           S1866-13         10         3/22/1941 12000         1981 - 1000 Ten Year S         -1.090         A           S1866-13         10         3/12/2004 12000         2001 - 2000 Ten Year S         -1.090         A           S1866-13         10         3/12/2004 12000         2001 - 2000 Ten Year S         -1.090         A	1	S-1447-12	10		3/5/1993 12:00:00	1991 - 2000 Ten Year S	-1.290				TM
B-1866-13         10         3/2/2199 12000			10		3/12/2003 12:00:0		-1.190				
IS-1886-13         10         3/1/2/2041 2000         2001 - 2010 Ten Years         1.030           IS-1887-140         10         3/1/2/2041 2000         10.139 Ten Years         1.030			10		3/15/1984 12:00:0		-1.110				DW
IS-1867-10         10         2/16/1086 12/00/01         1981 - 1990 Ten Year S         1 sund           4			10		3/22/1994 12:00:0		-1.090				A
		5-1867-10	10		3/14/1085 12:00:0	1981 - 1990 Ten Year S	.1 540				P
											TRow Count
	-										

Figure 7-39. Test Point Inspection Grid

- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 Complete either **step a** or **b** to display records in the grid based on a route:

- a Click the **Based On** tab **Based On** to open the based on panel and then complete the following steps:
  - **1)** Click the **Route** option. Then select a route in the adjacent group box (Figure 7-40).

In	formation Inspectio	_	e Galvanic	Anode Tank	ə 📰 %		Ø	Options 🖌 Cu	
-			eign bond Carvanic			 		Apply	
	elected ROWs	Route_215 Route_216							
	🕫 Find 📓 Telluric					🔒 🕄 Build Sur	vey   O Add   🗙 De	lete   'Gi Refresh	9
1									
								III Row Co	unt: :

Figure 7-40. Based On Route

- 2) Click 💾 Apply, and then click 🔀 Close to close the based on panel.
- **b** Click the **Options** tab **Options** to open the options page and then complete the following steps:
  - **1)** Click the **Route** option. Then select a route in the adjacent group box (Figure 7-41).

	5 Axis							- •
File	Modules Data Entry Rep	orts / Graphs Tools Fi	eld Computer Help	Cathodi	c Protection Data Man	ager (CPDM)		Welcome John Smith   🔨   🔀 Log
۹.	Edit CPDM Data ×							
	Information Inspect	on Maintenance						🔅 Options 🖌 Customiz
	Test Point Inspection							💾 Apply   🚳 Cance
	🗄 Based On							
	<ul> <li>e Selected ROWs</li> <li>Route</li> </ul>	Route_215 Route 216			_			
	Schedule	KOULE_210						
	🗃 View							💿 🌐 Grid 🔘 🚨 Form 🔘 🖺 Grid And Form
	Select Layout Theme	[PCS] Test Point Inspectio	ns	* Select S	Sort Theme 🐨 (PCS) Route O	rder	-	
	Select Form Theme			* Sort Da		Newest First		
	Options							
2		meet the filter criteria						
elected RO	O Apply other filters	meet the filter criteria to the most recent inspection spection after the filter crite		imeframe				
Selected ROWs	O Apply other filters	o the most recent inspectio		imeframe				① New 'And' Group 1 ② New 'Or' Group
Selected RO	<ul> <li>Apply other filters t</li> <li>The most recent in</li> </ul>	o the most recent inspectio		imeframe				New 'And' Group     New 'Or' Group
Selected RO	Apply other filters     The most recent in     Filters     Currently Active Fac	to the most recent inspection spection after the filter crite spection after the filter crite spection after the filter crite spectra	zria has been met	imeframe				
Selected RO	Apply other filters     The most recent in     Filters     Currently Active Fac	to the most recent inspection spection after the filter crite ilities Only icilities and Facilities on Cu	zria has been met	imeframe Ø and				
Selected RO	Apply other filters     The most recent in     Filters      Currently Active Fac     Currently Inactive Fac	o the most recent inspecti spection after the filter crit lifties Only criticies and Facilities on Cu between	zria has been met					
Selected RO 	Apply other filters     The most recent in     Filters      Co     Currently Active Fac     Currently Inactive Filters      Relative Milepost is	o the most recent inspecti spection after the filter crit lifties Only criticies and Facilities on Cu between	zria has been met	P and				
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Selected RO	Apply other filters     The most recent in     Filters     Filters     Currently Active Fac     Currently Inactive Fi     Relative Milepost is     Inspection Date is b     Survey is equal to	to the most recent inspecti spection after the filter critu- lifties Only cilities and Pacilities on Cu between utween	zria has been met	and and				
Selected RO	Apply other filters     The most recent in     The most recent in     Filters     Filters     Currently Active Fac     Currently Inactive Fi     Relative Milepost is     Inspection Date is b     Survey is equal to     Periodic Survey is equal to	o the most recent inspectii spection after the filter onto lifties Only cilities Only cilities and Facilities on Cu between ual to is equal to	zria has been met	and and				

Figure 7-41. Based on Route

- 2) Click 💾 Apply to save and apply changes.
- **6** If you want to change the grid layout theme, sort theme, or apply one or more filters to the grid, complete the following steps:
  - **a** To change the grid layout theme, click the down arrow in the field **Select Layout Theme** and select a theme in the selection list (Figure 7-41).
  - **b** To change the grid sort theme, click the down arrow in the field **Select Sort Theme** and select a theme in the selection list.
  - c Select a method for sorting records in the data entry grid. Click **Oldest First** or **Newest First** in *Sort Dates* to sort records with the oldest or newest inspection dates first.
  - **d** To apply a filter to the grid, click the check box for a filter listed in the *Filters* group box.

For example, to only include active facilities in the grid, click the *Active Facilities Only* check box. A check mark inside the check box indicates a selection. To remove a filter from the grid, clear the check mark by clicking the check box.

**NOTE:** To add a new *AND* or *OR* filter group, refer to *Adding an AND Filter Group* (page 324).

- **e** When applying a date filter to the grid, such as *Inspection Date is between*, set a date range using a calendar or dynamic dates in the following manner:
  - To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - 2) To set a date range using dynamic start and end dates, click the according to the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **f** Click **H Apply** to save and apply changes.

Records display in the grid based on selected options.

### Viewing Records Based on a Schedule

Information in this section explains how to display records in a data entry grid based on a schedule. Examples are based on the CPDM module, however the information applies to all modules. Topics in this section include those in the following list:

- Using the Based On Tab to View Records Based on a Schedule
- Using the Options Page to View Records Based on a Schedule (page 260)

**NOTE:** Scheduling criteria must first be set up as well as a schedule definition to perform the procedure in this section. For more information see *Using a Schedule* (page 453).

#### Using the Based On Tab to View Records Based on a Schedule

Complete the following steps using the *Based On* tab to view records in a grid based on a schedule:

Select one or more pipeline segments in the Select ROWs window (Figure 7-42). Select pipeline segments with facilities included in a schedule, then click Save to close the window.

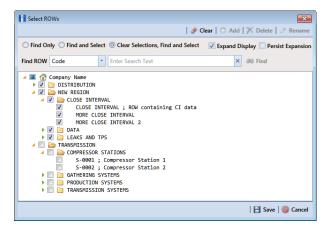


Figure 7-42. Select ROWs

2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data** to open the *Edit CPDM Data* window (Figure 7-43).

	Find M Tellurio		511 - D -			Structure P/S			Build Survey   😋 Add		
	ROW Code and Pip	e Milepost 10	Effective Date	Inspection Date 3/5/1981 12:00:00	Survey 1981 - 1990 Ten Year S		Casing P/S	Foreign P/S	Insulator P/S	Technician EL	Inspect
Ľ	IS-0767-01	10		3/4/1991 12:00:00	1991 - 2000 Ten Year S	-1050				DM	
	IS-0767-01	10		3/4/1991 12:00:00	2001 - 2010 Ten Year S	-1,050				UM	
	15-0967-07	10		3/18/2001 12:00:0	1981 - 1990 Ten Year S						
	IS-0967-07	10		3/18/1992 12:00:0	1991 - 2000 Ten Year S						
	IS-0967-07	10		3/12/2002 12:00:0	2001 - 2010 Ten Year S						
	IS-1447-12	10			1981 - 1990 Ten Year S					EL	
	IS-1447-12	10		3/5/1993 12:00:00	1991 - 2000 Ten Year S					TM	
	IS-1447-12	10		3/12/2003 12:00:0	2001 - 2010 Ten Year S						
	IS-1866-13	10		3/15/1984 12:00:0	1981 - 1990 Ten Year S					DW	
	IS-1866-13	10		3/22/1994 12:00:0	1991 - 2000 Ten Year S	-1.090				A	
	IS-1866-13	10		3/12/2004 12:00:0	2001 - 2010 Ten Year S	-1.030					
•	IS-1867-10	10		3/14/1985 12:00:0	1981 - 1990 Ten Year S	-1 540				P	Þ
											Row Count: 3

Figure 7-43. Test Point Inspection Grid

- 3 Select a data entry grid. For example, click the **Inspection** tab **Inspection** and then the **Test Point** button **Test Point** to display the *Test Point Inspection* data entry grid.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 Click the **Based On** tab Based On and then select **Schedule** (Figure 7-44).

e	Modules Data Entry Reports / Graphs Tools Field Computer Help 🛛 🚫 Cathodic Protection Data Manager (CPDM)	Welcome John Smith   🕑   🔀 La
ľ	Edit CPDM Data 🗴	
	Information Inspection Maintenance	🔅 Options 🖌 Custom
	Test Point Inspection	🗎 Apply   🚳 Can
	🗈 Based On	
	●         € Selected ROWs         Selected ROWs         Ford Date           ●         Ø Row         [PCS] Email Installed Schedule Uptes         ■         0.001/2015 ■         ■           ●         © Schedule         Calculate XVMS years based on selected ROWs only.         ■         0.001/2015 ■         ■	
	🗑 View	💿 🖽 Grid 🔘 🚨 Form 🔘 👫 Grid And Form
	Select Layout Theme 🕏 [PCS] Test Point Inspections 🔹 Select Sort Theme 🕏 [PCS] Due Date from Schedule ROW Code and Milepost	•
	Select Form Theme Sort Dates @ Oldest First @ Newest First	
	(2) Options	
	Only include facilities with inspections during the reporting time period	
	Y Filters	💿 New 'And' Group 🛛 💿 New 'Or' Group
		0
	Currently Active Facilities Only	
	Currently Inactive Facilities and Facilities on Currently Inactive ROWs	
	Relative Milepost is between	
	Inspection Date is between	
	🔲 Survey is equal to 👻	
	Periodic Survey is equal to 👻	
	Periodic Survey Year is equal to	

Figure 7-44. Based On Schedule

6 Select a schedule definition. Click the down arrow in the field **Select Schedule Definition** and select an item in the list.

Complete **step 7** to set up a schedule date range using a calendar or **step 8** (page 259) to set up a schedule date range using dynamic dates.

- 7 To set up a schedule date range using a calendar:
  - **a** Set a schedule start date. Type a date in the **Start Date** field or click the down arrow and select a date using a calendar (Figure 7-45).

Modules Data Entry Rep	orts / Graphs Too	ols Field Compute	er Help	🔘 Cathodi	c Pro	tection	Data	Mai	nager	r (CP	DM)			
Edit CPDM Data 🗙														
Information Inspecti	on Maintenanc	e												
Test Point Inspection														
🗈 Based On														
Gelected ROWs	Select Schedule D				_	Start Dat			nd Dat					
O Boute O Chedule		ed Schedule Types			-	01/16/2	_	-	01/31/2	_				
	Calculate X/Y%						Thu		Februa		2015			
🔛 View						Su	Mo	Tu	uary, 2 We	Th	Fr	Sa		
Select Layout Theme	[PCS] Test Point In	spections		* Select	Sort Th	e 28	29	30	31	1	2	3	and Milepost	
Select Form Theme				* Sort Da	ates	4	5 12	6 13	7 14	8 15	9	10 17		
Options						18	19 26	20 27	21 28	22 29	23 30	24 31		
Only include facilities w	ith inspections duri	ng the reporting tir	me period			25 1	20	3	4	5	30 6	7		

Figure 7-45. Start Date Field Calendar

**b** Set a schedule end date. Type a date in the **End Date** field or click the down arrow and select a date using a calendar.

**NOTE:** When typing a date, use the format MM/DD/YYYY to indicate the month, day, and year.

- c Click Apply and then click Close to close the based on panel. Records display in the data entry grid based on the selected schedule definition and date range.
- 8 To set a schedule date range using dynamic start and end dates, follow these steps:
  - **a** Click the **Start Date** a calculator to open dynamic start date fields. Set properties in these fields in the following manner:

1) Click the down arrow in the **Start Date** field (Figure 7-46) and select one of the following options: *Today, End Of Month, Beginning Of Year*, or *End Of Year*.

Modules Data Entry Rep	oorts/Graphs Tools Field Computer Help 🛛 🌈	Cathodic Pro	tection Data Ma	nager (CPDM)		Welcome John Smith   🕑   🔀 Log
Edit CPDM Data ×		, cathoaic i i c		iager (er eni)		
Edit CPDIVI Data X						
Information Inspect	on Maintenance					🙁 Options 🥜 Customiz
Test Point Inspection						🛛 🖂 Apply
☑ (i) It appears that you	have some invalid options, please correct the following (1)					
O O Selected ROWs	Select Schedule Definition		Start Date		End Date	
O O Route	[PCS] Email Installed Schedule Types	*	-	•	• 🥜 01/31/2015 • 🗔	
Schedule	Calculate X/Y% years based on selected ROWs only.		Today			
			Beginning Of Month			
🔡 View			End Of Month			🌀 🔠 Grid 🔘 📮 Form 🔍 🐂 Grid And Form
Select Layout Theme	[PCS] Test Point Inspections	Select Sort Th	Beginning Of Year End Of Year	e from Schedule R	OW Code and Milepost 🔹	
Select Form Theme		* Sort Dates	Oldest First	Mourant First		

Figure 7-46. Start Date Options

- 2) In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the pencil button to close dynamic start date fields.
- **b** Click the **End Date** i calculator to open dynamic end date fields. Set properties in these fields in the following manner:
  - 1) Click the down arrow in the **End Date** field and select one of the following options: *Today*, *End Of Month*, *Beginning Of Year*, or *End Of Year*.
  - 2) In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the pencil button to close dynamic end date fields.
- c Click **Apply** and then click **Close** to close the based on panel. Records display in the data entry grid based on the selected schedule definition and dynamic date range.

#### Using the Options Page to View Records Based on a Schedule

Complete the following steps using the *Options* page to view records in a grid based on a schedule:

Select one or more pipeline segments in the Select ROWs window (Figure 7-47). Select pipeline segments with facilities included in a schedule, then click Save to close the window.

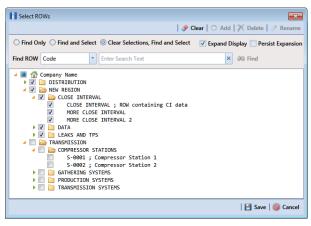


Figure 7-47. Select ROWs

2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data** to open the *Edit CPDM Data* window (Figure 7-48).

	OW Code and Pipe		Effective Date	Inspection Date	Survey	Structure P/S	Casing P/S	Foreign P/S	Build Survey C Add	Technician	Inspect
	-0767-01	10		3/5/1981 12:00:00	1981 - 1990 Ten Year S	-1.030				EL	
IS-	0767-01	10		3/4/1991 12:00:00	1991 - 2000 Ten Year S	-1.050				DM	
IS-	0767-01	10		3/18/2001 12:00:0	2001 - 2010 Ten Year S	-1.080					
IS-	0967-07	10			1981 - 1990 Ten Year S	-1.170					
IS-	0967-07	10		3/18/1992 12:00:0	1991 - 2000 Ten Year S	-1.320					
IS-	0967-07	10		3/12/2002 12:00:0	2001 - 2010 Ten Year S	-1.280					
IS-	1447-12	10		3/10/1983 12:00:0	1981 - 1990 Ten Year S	-1.120				EL	
IS-	1447-12	10		3/5/1993 12:00:00	1991 - 2000 Ten Year S	-1.290				TM	
	1447-12	10		3/12/2003 12:00:0	2001 - 2010 Ten Year S	-1.190					
	1866-13	10		3/15/1984 12:00:0	1981 - 1990 Ten Year S	-1.110				DW	
	1866-13	10		3/22/1994 12:00:0	1991 - 2000 Ten Year S	-1.090				A	
	1866-13	10		3/12/2004 12:00:0	2001 - 2010 Ten Year S	-1.030					
IS-	1867-10	10		3/14/1985 12:00:0	1981 - 1990 Ten Year S	-1 540				P	

Figure 7-48. Test Point Inspection Grid

- 3 Select a data entry grid. For example, click the **Inspection** tab **Inspection** and then the **Test Point** button **Test Point** to display the *Test Point Inspection* data entry grid.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.

5 Click the **Options** tab **Options** to open the options page and then selectSchedule (Figure 7-44).

PC	IS Axis	
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🛛 🚫 Cathodic Protection Data Manager (CPDM)	Welcome John Smith   🥹   🔀 Log Out
Q	Edit CPDM Data 🗙	
	Information Inspection Maintenance	🔅 Options 🥜 Customize
	Test Point Inspection	🛛 🔁 Apply 🛛 🚳 Cancel
	값 Based On	
	●         Ø sketcel Øket/alle Øket/alle         Start Date         Fnd Date           ●         Ø Roku         IPCSI Brail Installed Schedule Øket/alle         € Øket/alle         Øket/alle         € Øket/alle         Øket/alle         € Øket/alle         € Øket/alle         Øket/alle         € Øket/alle	
	2 View	💿 🎹 Grid 🔘 🚨 Form 🔘 🐂 Grid And Form 🛋
	Select Layout Theme 🕏 [PCS] Test Point Inspections 🔹 Select Sort Theme 🕏 [PCS] Due Date from Schedule ROW Code and Milepost	
	Select Form Theme Sort Dates	
ŝ	② Options	
NON ::	Only include facilities with inspections during the reporting time period	
Selected ROWs 	7 Filters	New 'And' Group     New 'Or' Group
Sele		•
	Currently Active Facilities Only Currently Inactive Facilities and Facilities on Currently Inactive ROWs	
	Relative Milepost is between	
	Inspection Date is between and	
	Survey is equal to	
	Periodic Survey is equal to	
	Periodic Survey Year is equal to	
	Technician is equal to	

Figure 7-49. Based On Schedule

**6** Click the down arrow in the **Select Schedule Definition** field and select an item in the list.

Complete either **step 7** to set up a schedule date range using a calendar or **step 8** to set up a schedule date range using dynamic dates (page 263).

- 7 To set up a schedule date range using a calendar:
  - **a** Set a schedule start date. Click the down arrow in the **Start Date** field and select a date in the calendar.
  - **b** Set a schedule end date. Click the down arrow in the **End Date** field and select a date in the calendar.
  - c If you want to set additional property settings in the options page, continue with step 9 (page 263). Otherwise, click Apply to apply changes and return to the data entry grid.

- **8** To set a schedule date range using dynamic start and end dates, follow these steps:
  - **a** Click the **Start Date** a calculator to open dynamic start date fields. Set properties in these fields in the following manner:
    - 1) Click the down arrow in the **Start Date** field and select one of the following options: *Today, End Of Month, Beginning Of Year,* or *End Of Year.*
    - 2) In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the pencil button to close dynamic start date fields.
  - **b** Click the **End Date** aclculator to open dynamic end date fields. Set properties in these fields in the following manner:
    - 1) Click the down arrow in the **End Date** field and select one of the following options: *Today*, *End Of Month*, *Beginning Of Year*, or *End Of Year*.
    - 2) In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the pencil button to close dynamic end date fields.
  - c If you want to set additional property settings in the options page, continue with step 9. Otherwise, click Apply to apply changes and return to the data entry grid.
- **9** To change the grid layout, sorting method, or apply one or more filters to the grid, follow these steps:
  - a To change the grid layout theme, click the down arrow in the field Select
     Layout Theme and select a layout theme in the selection list.
  - **b** To change the grid sorting method, click the down arrow in the field **Select Sort Theme** and select a sorting theme in the selection list.
  - **c** To apply a filter to the grid, click the check box for a filter listed in the *Filters* group box.

For example, to only include active facilities in the grid, click the *Active Facilities Only* check box. A check mark inside the check box indicates a selection. To remove a filter from the grid, clear the check mark by clicking the check box.

**NOTE:** For more information related to filters (*New 'And' Group* or *New 'Or' Group*), refer to *Adding an AND Filter Group* (page 324).

- **d** When applying a date filter to the grid, such as *Inspection Date is between*, set a date range using a calendar or dynamic dates in the following manner:
  - 1) To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - 2) To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- e Click 💾 Apply to apply changes and return to the data entry grid

Records display in the grid based on selected options.

## Filtering Data in a Grid

Information in this section explains how to filter the data output in any data entry grid in *Edit <module > Data, such as Edit CPDM Data.* It includes a description of the options and filters available in the *Options* page when working with the *Information, Inspection,* and *Maintenance* grids. Filtering data allows you to work with only those records you are interested seeing in the grid.

Topics in this section include those in the following list:

- Filtering Data in the Information Grid
- Filtering Data in the Inspection Grid (page 265)
- Filtering Data in the Maintenance Grid (page 268)

#### Filtering Data in the Information Grid

To filter the data output in the *Information* grid of *Edit <module > Data*, complete the following steps. The placeholder *<module >* refers to any module, such as *Edit CPDM Data*.

- 1 Click Data Entry > Edit < module > Data.
- 2 Open the *Information* grid for a facility type. For example, click the **Information** tab **Information** and then a facility type button, such as **Test Point Test Point**.

3 Click the **Options** tab **Options** to open the **Options** page (Figure 7-50).

PCS		O Cathodic Protec	tion Data Manager (CPDM)	Welcome John Smith   🕑 🔀 Log (
	Edit CPDM Data ×		ction bata manager (CPDM)	welcome John Smith   🕑   🖬 cog v
	Information Maintenance			😟 Options 🖌 Customize
	Test Point Information			💾 Apply   🚳 Cancel
	🗈 Based On			
	<ul> <li>Selected ROWs</li> <li>Route</li> <li>Schedule</li> </ul>			
	🗄 View		(	🖲 🖽 Grid 🔘 📮 Form 🔍 🐂 Grid And Form 🖕
2	Select Layout Theme 💿 [PCS] Test Point Information	Select Sort Theme	😵 [PCS] ROW Code and Milepost	•
·····	Select Form Theme	* Sort Dates	Oldest First O Newest First	
	Options			
	Only the most recent information record for each facility			
	🝸 Filters			O New 'And' Group ONew 'Or' Group
				0
	Currently Active Facilities Only     Currently Inactive Facilities and Facilities on Currently Inactive ROWs			
	Relative Milepost is between	🥖 and	9	

Figure 7-50. Options/Information Grid

4 To include only the most recent information record, select the check box **Only the most recent information record for each facility**. This option uses the *Effective Date* to filter the data output.

**NOTE:** When using the *Filters* group box to apply additional filters to the data output, the most recent information record is found first, and then all other filters are applied to the data output. For more information about filters, see *Adding an AND Filter Group* (page 324) and *Adding an OR Filter Group* (page 327).

5 Click Apply to save and apply changes and then return to the *Information* grid. To cancel changes, click the **Options** tab Options to return to the grid.

#### Filtering Data in the Inspection Grid

To filter the data output in the *Inspection* grid of *Edit < module > Data*, complete the following steps. The placeholder *< module >* refers to any module, such as *Edit CPDM Data*.

- 1 Click Data Entry > Edit <module > Data.
- 2 Open the *Inspection* grid for a facility type. For example, click the **Inspection** tab **Inspection** and then a facility type button, such as **Test Point Test Point**.
- **3** Click the **Options** tab **Options** to open the **Options** page (Figure 7-51).

Modules Data Entry Reports / Graphs Tools Field Computer Help 🚫 Cathodic Protection Data Manager (CPDM) Edit CPDM Data ×	
	Welcome John Smith   🕑   🔀
Information Inspection Maintenance	🧐 Options 🗲 Cust
Test Point Inspection	🖪 Apply   🚳 C
🗈 Based On	
O P Selected ROWs     O Route	
Schedule	
	💿 🏥 Grid 🔘 🖺 Form 🔍 👫 Grid And Fo
Select Layout Theme PICS] Test Point Inspections Select Sort Theme PICS] ROW Code and Milepost	*
Select Form Theme Sort Dates Oldest First Newest First	
(i) Options	
Only include facilities with inspections during the reporting time period Filter Options: @ All inspections that meet the filter criteria	
Only include facilities with inspections during the reporting time period Filter Options: All inspections that meet the filter criteria () Apply other filters to the most recent inspection found within report timeframe () The most recent inspection after the filter criteria has been met	
Only include facilities with inspections during the reporting time period Filter Options: © All impections that meet the filter criteria Ø Apply other filters to the most recent impaction found within report timeframe	① New 'And' Group   ⑧ New 'Or' Gro
Only include facilities with inspections during the reporting time period Filter Options: All inspections that meet the filter criteria All inspections that meet the filter criteria O Apply other filters to the most recent inspection found within report timeframe The most recent inspection after the filter criteria has been met	🕐 New 'And' Group   💿 New 'Or' Gr
City include facilities with inspections during the reporting time period Filter Options: Apply other filters to the most recent inspection found within report timeframe The most recent inspection after the filter citeria has been met Filters Filters Communication Co	① New 'And' Group   ④ New 'O' Gr
Chy include facilities with inspections during the reporting time period Filter Options: C All inspections that meet the filter criteria C Apply other filters to the most recent inspection found within report timeframe T The most recent inspection after the filter criteria has been met Filters Filters C Currently Active Facilities only C Currently Active Facilities and Facilities on Currently Inactive ROWs	① New 'And'Group   ② New 'Or' Gro
Chyl include facilities with inspections during the reporting time period Filter Options: Constraint of the filter criteria Constraint of the filter criteria Constraint of the filter criteria has been met Filters Filters Constraint of the filter criteria has been met Filters	① New 'And' Group   ③ New 'Qr' Gr
Chy include facilities with inspections during the reporting time period Filter Options Constraint of the filter criteria Constraint of the filter criteria Constraint of the filter criteria has been met  Filters Filters Filters Constraint of the facilities only Constraint facilities only Constraint facilities only Constraint facilities on Cons	I New And' Group I I New 'Or' Gr
Only include facilities with inspections during the reporting time period Filter Options:	① New 'And' Group   ④ New 'Or' Gr
Only include facilities with inspections during the reporting time period Filter Options Only index facilities on the matrix reset inspection found within report timeframe Only other filters to the matrix reset inspection found within report timeframe Tenses O O Currently Active Facilities only Currently Inscribe Tables and Facilities on Currently Inscribe ROWs Relative Milepast is between Filters Filters O Periodic Survey is equal to Periodic S	① New 'And' Group   ④ New 'Or' Gr
Only include facilities with inspections during the reporting time period Filter Options:	(D) New 'And' Group   (B) New 'Or' Gro

Figure 7-51. Options/Inspection Grid

**4** Review the following descriptions and then select one or more filter options as required:

- Only include facilities with inspections during the reporting time period: The data output for this option only includes those inspection records that meet the filter criteria defined for a particular date or date range. Filter criteria is defined by filter settings in the *Filters* group box for any of the following time period fields: *Inspection Date is between*, *Survey is equal to*, *Periodic Survey is equal to*, and *Periodic Survey Year is equal to*.
- All inspections that meet the filter criteria: This option includes all inspection records in the data output that meet filter criteria based on filter settings in the *Filters* group box.
- Apply other filters to the most recent inspection found within the report timeframe: This option finds the most recent inspection record within the reporting time frame first, and then applies other filter settings to the data output. Filter criteria for both of these are defined in the *Filters* group box. Use any of the following fields when defining filter criteria for the reporting time frame: *Inspection Date, Survey, Periodic Survey, and Periodic Survey Year.*
- The most recent inspection after the filter criteria has been met: The data output for this option includes the most recent inspection record only for those facilities that meet all other filter criteria first. Filter criteria for both of these are defined in the *Filters* group box. Use any of the following fields when defining a time period for the most recent maintenance record: *Inspection Date, Survey, Periodic Survey, and Periodic Survey Year.*
- **5** When applying a time period filter to the grid, such as *Inspection Date is between*, set a date range using a calendar or dynamic dates in the following manner:
  - To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - To set a date range using dynamic start and end dates, click the button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- 6 Click Apply to save and apply changes and then return to the *Inspection* grid.
   To cancel changes, click O Cancel or the Options tab Options to return to the grid.

**NOTE:** For more information about filters, see *Working with Themes and Filter Groups* (page 316).

### Filtering Data in the Maintenance Grid

To filter the data output in the *Maintenance* grid of *Edit < module > Data*, complete the following steps. The placeholder *< module >* refers to any module, such as *Edit CPDM Data*.

- 1 Click Data Entry > Edit <module> Data.
- Open the *Maintenance* grid for a facility type. For example, click the
   Maintenance tab Maintenance and then a facility type button, such as Test Point
   Test Point
- **3** Click the **Options** tab **Options** to open the **Options** page (Figure 7-52).

PC	Axis	
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🚺 Cathodic Protection Data Manager (CPDM	) Welcome John Smith   🕘   🔀 Log Out
Q	Edit CPDM Data 🗙	
	Information Inspection Maintenance	Options 🗲 Customize
	Test Point Maintenance	💾 Apply   🎯 Cancel
	🗈 Based On	
	<ul> <li>Selected ROWs</li> <li>Ø Route</li> </ul>	
	🔛 View	💿 🖽 Grid 🔘 📮 Form 🔍 晴 Grid And Form 🛋
	Select Layout Theme 🐨 [PCS] Test Point Maintenance 🔹 Select Sort Theme 🕏 [PCS] ROW Code and Milepost	-
	Select Form Theme Sort Dates Oldest First Newest First	
12	(2) Options	
Selected ROWs	Only include facilities with maintenance during the reporting time period	
: چ	Filter Options:	
elect	An maintenance that meet the meet criteria Apply other filters to the most recent maintenance found within report timeframe	
S	The most recent maintenance after the filter criteria has been met	
	Y Filters	O New 'And' Group O New 'Or' Group
	٥	•
	Currently Active Facilities Only	
	Currently Inactive Facilities and Facilities on Currently Inactive ROWs	
	Relative Milepost is between	
	Repair Found Date is between and and and	-
	Test Point Repair Code is equal to	

Figure 7-52. Options/Maintenance Grid

**4** Review the following descriptions and then select one or more filter options as required:

- Only include facilities with maintenance during the reporting time period: The data output for this option only includes those maintenance records that meet the filter criteria defined for a particular date or date range. Filter criteria is defined by filter settings in the *Filters* group box for any of the following time period fields: *Effective Date, Repair Found Date, Repair Initiated Date,* and *Repair Corrected Date.*
- All maintenance that meet the filter criteria: This option includes all maintenance records in the data output that meet filter criteria based on filter settings in the *Filters* group box.
- Apply other filters to the most recent maintenance found within the report timeframe: This option finds the most recent maintenance record within the reporting time frame first, and then applies other filter settings to the data output. Filter criteria for both of these are defined in the *Filters* group box. Use any of the following fields when defining filter criteria for the reporting time frame: *Effective Date, Repair Found, Repair Initiated,* and *Repair Complete.*
- The most recent maintenance after the filter criteria has been met: The data output for this option includes the most recent maintenance record only for those pipeline records that meet all other filter criteria first. Filter criteria for both of these are defined in the *Filters* group box. Use any of the following fields when defining a time period for the most recent maintenance record: *Effective Date, Repair Found, Repair Initiated,* and *Repair Complete.*
- 5 Click Apply to save and apply changes and then return to the Maintenance grid. To cancel changes, click Cancel or the Options tab control to return to the grid.

**NOTE:** For more information about filters, see *Working with Themes and Filter Groups* (page 316).

# Building a Survey in the Inspection Grid

Building a survey in the inspection grid based on a schedule allows PCS Axis to automatically add empty inspection records in the grid ready for data entry. This feature saves time by eliminating the need to manually add empty inspection records in the grid, one-by-one.

To build a survey in the *Inspection* grid based on a schedule, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-53). Select pipeline segments with facilities you want to work with, then click Save to close the window.

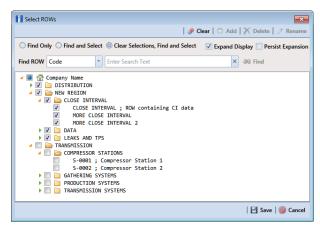


Figure 7-53. Select ROWs

2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data** to open the *Edit CPDM Data* window (Figure 7-54).

Find         Tell           ROW Code and         IS-0767-01           IS-0767-01         IS-0767-01           IS-0767-01         IS-0967-07		Effective Date	Inspection Date				10	Build Survey   😋 Add	1 ×	
<ul> <li>IS-0767-01</li> <li>IS-0767-01</li> <li>IS-0767-01</li> <li>IS-0967-07</li> </ul>	10	Effective Date	Inspection Date				100	Build Survey   👽 Add	з   🔨 Delete   🈏 к	efresh   🙁
IS-0767-01 IS-0767-01 IS-0967-07				Survey	Structure P/S	Casing P/S	Foreign P/S	Insulator P/S	Technician	Inspec
IS-0767-01 IS-0967-07	10		3/5/1981 12:00:00	1981 - 1990 Ten Year S	-1.030				EL	
IS-0967-07			3/4/1991 12:00:00	1991 - 2000 Ten Year S	-1.050				DM	
	10		3/18/2001 12:00:0	2001 - 2010 Ten Year S	-1.080					
	10		3/18/1982 12:00:0	1981 - 1990 Ten Year S	11170					
IS-0967-07	10		3/18/1992 12:00:0	1991 - 2000 Ten Year S	-1.320					
IS-0967-07	10		3/12/2002 12:00:0	2001 - 2010 Ten Year S	-1.280					
IS-1447-12	10		3/10/1983 12:00:0	1981 - 1990 Ten Year S	-1.120				EL	
IS-1447-12	10		3/5/1993 12:00:00	1991 - 2000 Ten Year S	-1.290				TM	
IS-1447-12	10		3/12/2003 12:00:0	2001 - 2010 Ten Year S	1.1.50					
IS-1866-13	10		3/15/1984 12:00:0	1981 - 1990 Ten Year S	-1.110				DW	
IS-1866-13	10		3/22/1994 12:00:0	1991 - 2000 Ten Year S	-1.030				Α	
IS-1866-13	10		3/12/2004 12:00:0	2001 - 2010 Ten Year S	21050					
IS-1867-10	10		3/14/1985 12:00:0	1981 - 1990 Ten Year S	-1 540				P	
									<b></b>	Row Count:

Figure 7-54. Test Point Inspection Grid

- 3 Select the *Inspection* data entry grid for a facility type. For example, click the **Inspection** tab **Inspection** and then the **Test Point** button **Test Point** to display the *Test Point Inspection* data entry grid.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.

5 Click the Based On tab Based On to open the based on panel. Then select the Schedule option (Figure 7-55).

0	Based On Selected ROWs Route Schedule	Select Schedul My Schedule_2	ected ROWs only.	Int Date End D	Date 1/2013 💌 🛄		💾 Apply   🔀 Ci
4				11			
	ROW Code and Pipe	Milepost					

Figure 7-55. Based On Schedule Option

6 Select a schedule definition. Click the down arrow in the field **Select Schedule Definition** and select an item in the list.

Complete **step 7** to set up a schedule date range using a calendar or **step 8** (page 272) to set up a schedule date range using dynamic dates.

- 7 To set up a schedule date range using a calendar:
  - **a** Set a schedule start date. Click the down arrow in the **Start Date** field and select a date in the calendar.
  - **b** Set a schedule end date. Click the down arrow in the **End Date** field and select a date in the calendar.
  - c Click Apply to apply changes and display the data entry grid. To hide the based on panel, click Close or click the Based On Based On Based On tab. Continue with step 9.
- 8 To set a schedule date range using dynamic start and end dates, follow these steps:
  - a Click the Start Date a calculator to open dynamic start date fields (Figure 7-56).

	ormation Inspec					ons 🛛 [PCS] Due Date	e trom Schedule ROW (	ode and Milepost	Coption 0	ns 🖌 Cust
	Test Point	Rectifier	Foreign Bond	Galvanic Anode	Tank					📑 Base
									18	Apply   🔀 🤇
-	Based On									
		select Schedul				itart Date	1 Month(s)	End Date		
	Schedule	My Schedule_1			•	Today -	1 Month(s)	12/31/2014		
		Calculate X/								
	Find						ß	Build Survey   🔿 A	dd   📉 Delete   😏	Refresh
	Due Date from	ROW Coo and Pipe		Effective Date	Inspection Date	Survey	Structure P/S (Volts)	Casing P/S (Volts)	Foreign P/S (Volts)	Insulator P/:
,	1/1/2014	LG567-A	0+00							
	1/1/2014	LG567-A	0+10							
	1/1/2014	LG567-A	0+20							
	1/1/2014	LG567-A	0+30							
	1/1/2014	LG567-A	0+40							
	1/1/2014	LG567-A	0+50							
•					18					

Figure 7-56. Based On Schedule

- **b** Set properties in these fields in the following manner:
  - 1) Click the down arrow in the **Start Date** field and select one of the following options: *Today, End Of Month, Beginning Of Year,* or *End Of Year.*
  - 2) In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the pencil button to close dynamic start date fields.
- c Click the **End Date** i calculator to open dynamic end date fields. Set properties in these fields in the following manner:
  - 1) Click the down arrow in the **End Date** field and select one of the following options: *Today, End Of Month, Beginning Of Year,* or *End Of Year.*
  - 2) In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the pencil button to close dynamic end date fields.
- d Click Apply to apply changes and display the data entry grid. To hide the based on panel, click Close or click the Based On Based On tab. Continue with step 9 (page 274).

9 Click **Build Survey** to open the *Build Survey* dialog box (Figure 7-57).

Build Survey	
No Assignments	
Assign Survey	
Survey	
2013 Annual Survey	
Periodic Survey Vear	
Auto Assignment	
Assign Survey	
Assign Periodic Survey And Year	
	🖒 Build   🚳 Car

Figure 7-57. Build Survey

- **10** Select one of the following options in the *Build Survey* dialog box to assign inspection records to a survey folder:
  - *No Assignments*: Select this option if you do not want to assign inspection records to a survey folder.
  - Assign Survey: Select this option to assign inspection records to an annual or multi-year survey folder. Then click the down arrow in the Survey field and select a survey folder in the selection list.
  - Assign Periodic Survey: Select this option to assign inspection records to a
    periodic survey. Click the down arrow in the Periodic Survey field and select
    a survey folder in the selection list. Then click the down arrow in the Year field
    and select the survey year.
  - Auto Assignment: Select this option and then click either Assign Survey or Assign Periodic Survey and Year to have PCS Axis automatically assign inspection readings to a survey folder based on the schedule date range.
- 11 Click 🕑 Build. Then click OK when the Build Survey message displays "Build Survey Completed."

The data entry grid now includes blank inspection records ready for data entry.

### Using Find to Search a Data Entry Grid

To search the content of a data entry grid, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-58). Select pipeline segments with facilities you want to work with, then click Save to close the window.

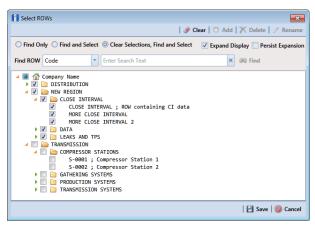


Figure 7-58. Select ROWs

- 2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data** to open the *Edit CPDM Data* window.
- Select a data entry grid. For example, click the Inspection tab Inspection and then the Test Point button Test Point to display the Test Point Inspection data entry grid.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.

	ules Data Entry CPDM Data ×	Reports 7 Grapi	ns Tools Field Co	mputer Help	Cathodic Pr	otection Data Ma	anager (CPDM)		Welcome	: John Smith   😁   🖺
Tend		pection Main		Selected ROW	My Inspection	Grid Layout Theme_1	W. My Inspertion G	rid Sort Theme 1		Options 📌 Cus
	Test Point	Rectifier	Foreign Bond	Galvanic Anode	Tank					
	_	Necunei	roleigii boliu	Galvanic Anode	Тапк		10			elete   😏 Refresh   🕯
0	Find						10	Build Survey   😈		elete   🍮 kerresh   (
Fir	nd Operator:	⊚ AND OR				👒 Reset Find	I   🛟 Add Field   🤇	Find Next Match		
	Milepost		<ul> <li>Is equal to</li> </ul>	•	19.070	g/		×		
Γ	ROW Code and Pipe	Milepost	Effective Date	Survey	Inspection Date	Structure P/S (Volts)	Casing P/S (Volts)	Foreign P/S (Volts)	Technician	Inspection Remark
	• T-1401	0.000		2006 Annual Survey	3/22/2006	-1.141			jsmith	Misc. piping -1.324
	T-1401	0.001		2006 Annual Survey	3/22/2006	-1.150			jsmith	
	T-1401	1.000		2006 Annual Survey	3/22/2006	-1.173		-0.428	jsmith	
	T-1401	1.500		2006 Annual Survey	3/22/2006	-0.963		-1.410	jsmith	
	T-1401	1.627		2006 Annual Survey	3/22/2006	-0.922	-0.298		jsmith	
	T-1401	1.750		2006 Annual Survey	3/22/2006	-0.895	-0.412		jsmith	
	T-1401	2.000		2006 Annual Survey	3/22/2006		-0.635		jsmith	No TP.
	T-1401	2.250		2006 Annual Survey	3/22/2006	-1.091			jsmith	
	T-1401	2.500		2006 Annual Survey	3/22/2006	-0.996		-0.739	jsmith	
	T-1401	3.000		2006 Annual Survey	3/22/2006	-0.717		-0.852	jsmith	
	T-1401	3.218		2006 Annual Survey	3/22/2006	-1.492			jsmith	
	T-1401	3.250		2006 Annual Survey	3/22/2006	-1.118			jsmith	
	T-1401	3.500		2006 Annual Survey	3/22/2006	-0.694		-0.184	jsmith	
	T-1401	4.000		2006 Annual Survey	3/22/2006	-0.686		-0.707	jsmith	Isolated at main -
	T-1401	5.000		2006 Annual Survey	3/22/2006	-1.116		-0.665	jsmith	
	T-1401	5.275		2006 Annual Survey	3/22/2006	-1.451		-1.339	jsmith	Meter needs paint
	T-1401	6.000		2006 Annual Survey	3/22/2006	-1.024		-0.954	jsmith	
	T-1401	7.000		2006 Annual Survey	3/22/2006	-1.094		-0.648	jsmith	Rd casing abandor
	T-1401	8.000		2006 Annual Survey	3/22/2006	.0.831		-0.862	icmith	Mainline tie in
F.,										Row Coun

**5** Click the **Find** tab **Second** to open the search properties panel (Figure 7-59).

Figure 7-59. Find

- 6 Select a *Find Operator* option. If you want search results to meet *all* search criteria, select the **AND** operator. If you want search results to meet *any* search criteria, select the **OR** operator.
- 7 Set up search criteria. Select a PCS Axis field, operator, and value using the selection fields. To add another row of selection fields, click Add Field and then select a PCS Axis field, operator and a value using the added row of selection fields.
- 8 Click *P* Find Next Match to search the grid. Click the button again to find the next match.
- 9 Click a Reset Find to clear and reset search selection fields. If you want to search for another item in the data entry grid, repeat step 6 through step 8.
- **10** Click the **Find** tab **Example** to close the search properties panel.

## Printing, Exporting, or Emailing Grid Content

The following information explains how to print and export a report with content in a data entry grid. Supported file formats for exporting a report include PDF, HTML, MHT, RTF, XLS, XLSX, CSV, TXT, and Image (BMP, EMF, WMF, GIF, JPEG, PNG, and TIFF).

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-60). Select pipeline segments with facilities you want to work with, then click Save to close the window.

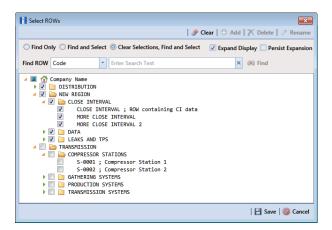


Figure 7-60. Select ROWs

Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM **Data** to open the *Edit CPDM Data* window (Figure 7-61).

_	Find 🛛 Telluric							ß	Build Survey
_	ROW Code and Pipe	Milepost	Effective Date	Inspection Date	Survey	Structure P/S	Casing P/S	Foreign P/S	Insulator
· 1	IS-0767-01	10		3/5/1981 12:00:00	1981 - 1990 Ten Year S	-11030			
	IS-0767-01	10		3/4/1991 12:00:00	1991 - 2000 Ten Year S	-1,000			
	IS-0767-01	10		3/18/2001 12:00:0	2001 - 2010 Ten Year S	-1.000			
1	IS-0967-07	10		3/18/1982 12:00:0	1981 - 1990 Ten Year S	-1.170			
1	IS-0967-07	10		3/18/1992 12:00:0	1991 - 2000 Ten Year S	-1.520			
1	IS-0967-07	10		3/12/2002 12:00:0	2001 - 2010 Ten Year S	-1.280			
1	IS-1447-12	10		3/10/1983 12:00:0	1981 - 1990 Ten Year S	-1.120			
1	IS-1447-12	10		3/5/1993 12:00:00	1991 - 2000 Ten Year S	-1.290			
3	IS-1447-12	10		3/12/2003 12:00:0	2001 - 2010 Ten Year S	-1.190			
1	IS-1866-13	10		3/15/1984 12:00:0	1981 - 1990 Ten Year S	-1.110			
3	IS-1866-13	10		3/22/1994 12:00:0	1991 - 2000 Ten Year S	-1.090			
1	IS-1866-13	10		3/12/2004 12:00:0	2001 - 2010 Ten Year S	-1.030			
	IS-1867-10	10		3/14/1985 12:00:0	1981 - 1990 Ten Year S	-1 540			

Figure 7-61. Test Point Inspection Grid

- Select a data entry grid. For example, click the Inspection tab Inspection and then the Test Point button Test Point to display the Test Point Inspection data entry grid.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- **5** Click **Print** to open a print preview window (Figure 7-62).

View Background				-					
🖻 🗄 🕹 🕹 📑	13 9 9 1	105% 🔹 🔍 🖂 🖡 🕨	N 1 8º 🌇 🔯	l <u>⊜</u> + ⊠	- 🛛 -				
		My Pip	eline Company						
		Test Poin	nt Inspection Grid	ł					
	Se	elected ROWs: Northwest Re			EMS: T-14	101			
Ontio	ns: Based On: Sel	lected ROWs: Only include f	acilities with ins	nertions r	luring the	reporting tim	e neriod:		
		ptions: The most recent ins					- /,		
		Effective	Inspection			Foreign			
ROW Code and Pipe T-1401	Milepost 0.000	Date Survey	Date	P/S 0	Casing P/S	P/S	Technician	Inspection Remarks	Facility ID
1-1401	0.000	2006 Annual Surve	y 3/22/2006	-1.141		i smith		Misc. piping-1.324 (Paint good)	
	0.001	2006 Annual Surve	y 3/22/2006	-1.150		i smith			
	1.000	2006 Annual Surve	y 3/22/2006	-1.173		-0.428jsmith			
	1.500	2006 Annual Surve		-0.963		-1.410j smith			
	1.627	2006 Annual Surve		-0.922	-0.298	i smith			
	1.750	2006 Annual Surve		-0.895	-0.412	i smith			
	2.000	2006 Annual Surve			-0.635	i smith		No TP.	
	2.250	2006 Annual Surve				i smith			
	2.500	2006 Annual Surve				-0.739jsmith			
	3.000	2006 Annual Surve				-0.852jsmith			
	3.218	2006 Annual Surve				i smith			
	3.250	2006 Annual Surve		-1.118		ismith			
	3.500	2006 Annual Surve		-0.694		-0.184ismith			
	4.000	2006 Annual Surve	y 3/22/2006	-0.686		-0.707ismith		I sol ated at main - Bare line	
	5.000	2006 Annual Surve	y 3/22/2006	-1.116		-0.665i smith			
	5.275	2006 Annual Surve	y 3/22/2006	-1.451		-1.339ismith		Meter needs painting County Road	
	6.000	2006 Annual Surve	y 3/22/2006	-1.024		-0.954) smith			
	7.000	2006 Annual Surve	y 3/22/2006	-1.094		-0.648i smith		Rd casing abandoned	
	8.000	2006 Annual Surve	y 3/22/2006	-0.831		-0.862i smith		Mainlinetie in	
	8.500	2006 Annual Surve	y 3/22/2006	-1.020		-0.638ismith			
	8.717	2006 Annual Surve	y 3/22/2006	-1.080		ismith		East edge of Big Brown (Needs paint). BV-F76B	
	8.800	2006 Annual Surve	y 3/22/2006	-1.720		i smith		KWA meter #bad.	
	8.830	2006 Annual Surve	y 3/22/2006	-1.514		-0.700j smith		paint OK, plant side needs painting	
	8.957	2006 Annual Surve	y 3/22/2006	-1.422		i smith		West of Big Brown tie in. BV-F76.	
	8.979	2006 Annual Surve		-1.409	-1.186	i smith			
	9.000	2006 Annual Surve	y 3/22/2006	-1.457		-1.110 i smith		Sta. 115V 3C/6F 12V/22A (Paint good)	
		12/10/2013	Page 1/8						

Figure 7-62. Print Preview

- **6** To print the report using the default Windows printer, click the **Quick Print** button.
- **7** To open a print dialog box and select a printer to print the report, click the **Print** button.
- 8 To select a file format and export the report, follow these steps:
  - **a** Click the down arrow in **Export Document** and select a file format in the selection list.
  - **b** When the *Options* dialog box opens, set up optional property settings and then click **OK** to close the dialog box.
  - **c** When the *Save As* dialog box opens, type a name for the report in the **File name** field and then navigate to a location on your computer to save the report.
  - **d** Click **Save**. When the message *Do you want to open this file* displays, click **Yes** or **No**.

- **9** To select a file format and send the report as an attachment in an email, follow these steps:
  - a Click the down arrow in **Send via E-mail** and select a file format in the selection list.
  - **b** When the *Options* dialog box opens, set up optional property settings and then click **OK** to close the dialog box.
  - c When the *Save As* dialog box opens, type a name for the report in the **File name** field and then navigate to location on your computer to save the report.
  - **d** When an email message opens with the report as an attachment, select an email recipient and then click **Send**.
- **10** Click the **3 Exit** button to close the print preview window and return to the data entry grid.

# Working with Data Entry Forms

A data entry form (also referred to as "form") provides a single record view of facility information. All fields related to a single facility record display in one page of a form. Using this feature allows you to display large amounts of information and data entry fields for one facility record on one form page.

A PCS Axis form typically resembles a familiar paper-based form used by field technicians or data entry personnel. It can also be used as an inspection report or a compliance report when the selected *Form Theme* includes the appropriate PCS Axis fields. For example, a field technician can use a form to enter survey data when inspecting points along a pipeline segment.

**IMPORTANT:** Using a data entry form in PCS Axis requires that the form be created and designed in PCS v7.5 or higher and then imported in PCS Axis. Creating and designing forms in PCS Axis is not currently supported but will be in a future software release. Importing a form in PCS Axis requires the assistance of PCS Technical Services. Contact information for PCS Technical Services is available in the section entitled *Technical Support* (page 25).

Other topics related to forms in PCS Axis include those in the following list:

- Viewing a Form or Grid and Form (page 280)
- Navigating a Form or Grid and Form (page 282)

• Arranging a Grid and Form (page 283)

# Viewing a Form or Grid and Form

Information in this section explains how to view a form by selecting the option labeled *Form* or *Grid And Form* in the *Options* page of a data entry grid.

To view a form, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-63). Select pipeline segment(s) with facilities you want to view in a form. Click Save to close the window.

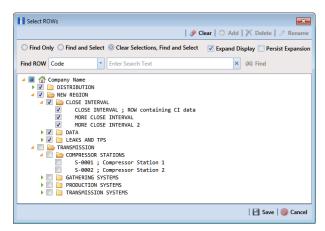


Figure 7-63. Select ROWs

- Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM **Data** to open the *Edit CPDM Data* window.
- **3** Open the *Inspection* grid for a facility type. For example, click the **Inspection** tab and then a facility type button, such as **Test Point** (Figure 7-64).

e	Modules	Data Entry	Reports / Graphs	Tools Field Comp	uter Help 🚺	Cathodic Prot	ect
	Edit CPD	OM Data 🗙					
	Infor	mation Ins	pection Mainte	nance 📑 Selec	ted ROWs 📑 My Ins	pection Grid Layout	The
	Те	st Point	Rectifier	Tank			
	615 F	ind					
		ROW Code and Pipe	Milepost	Effective Date	Survey	Inspection Date	SI
	• L	.G567-A	0+00		2013 Annual Survey	12/10/2013	
	L	G567-A	0+10		2013 Annual Survey	12/10/2013	
	L	G567-A	0+20		2013 Annual Survey	12/10/2013	
	L	G567-A	0+30		2013 Annual Survey	12/10/2013	
					2013 Annual Survey		

Figure 7-64. Test Point Tab

4 Click the **Options** tab Options to open the options page (Figure 7-65). In the *View* group box, click the option labeled **Form** or **Grid And Form** and then click **Apply**.

	Axis									
	Modules Data Entry I	Reports / Graphs	Tools	Field Computer	Help	0	Cathodic Protect	tion Data Manager (CPDM	) Welcome John Smith	🥹   🔀 Log C
٤.	Edit CPDM Data ×									
	Information Inspe	ction Mainter	nance							🕈 Customize
	Test Point Inspection								💾 App	ly 🔘 Cancel
	Based On     Selected ROWs									
	Route									
	Schedule									
	🗄 View								🛅 Grid 🔘 📋 Form 🔘 🖡	Grid And Forn
	Select Layout Theme	📢 My TP Inspect	tion Grid L	Layout_1			* Select Sort Theme	PCS] ROW Code and Milepost		•
	Select Form Theme						* Sort Dates	Oldest First O Newest First		
	Options									
	<ul> <li>All inspections t</li> <li>Apply other filte</li> <li>The most recent</li> </ul>	rs to the most reco	ent inspec			timeframe				
6	7 Filters								( New 'And' Group	Now 'Or' Grou
'n	Y Filters								The run and p	New Or Group
	Y Hiters								Context raid cloup   Co	
	Active Facilities C									
	Active Facilities C     Inactive Facilities	and Facilities on I	nactive R0	OWs			🖉 and			
	Active Facilities C     Inactive Facilities     Relative Milepost	and Facilities on Ii is between	nactive RC	DWs			/ and			
	Active Facilities C     Inactive Facilities     Relative Milepost     Inspection Date is	and Facilities on In is between s between	inactive RC	DWs	¥	-		- 6		
	Active Facilities     Active Facilities     Inactive Facilities     Relative Milepost     Inspection Date is     Survey is equal to	and Facilities on In is between s between	inactive RC	DWs	×	-				
	Active Facilities C     Inactive Facilities C     Inactive Facilities     Relative Milepost     Inspection Date is     Survey is equal to     Periodic Survey is	and Facilities on Is is between s between s equal to	inactive RC	DWs	Ŧ					
	Active Facilities C     Inactive Facilities     Relative Milepost     Inspection Date is     Survey is equal te     Periodic Survey is     Periodic Survey Y	and Facilities on Is is between s between s equal to ear is equal to	inactive RC	DWs	v			19		
	Active Facilities C     Inactive Facilities C     Inactive Facilities     Relative Milepost     Inspection Date is     Survey is equal to     Periodic Survey is	and Facilities on Is is between s between s equal to ear is equal to	inactive RC	DWs	v					

Figure 7-65. Options

Based on your selection earlier, a form or grid and form display after clicking *Apply*. The following figure shows an example of a grid and form (Figure 7-66).

		pection Mainte				ion Grid Layout_1 🛛 📉	[PCS] ROW Code and I	Milepost	🛱 Opti	ons 📌 Custon
	Test Point	Rectifier	Foreign Bond	Galvanic Anode	Tank					📑 Based
	Find						Build S	urvey   🕻	🕽 Add   🗡 Delete	😏 Refresh   😫 I
Gri			1			Form			~ ~	
	ROW Code and Pipe	Milepost	Inspection Date	Survey	Structure (Volts)		of	6	$\mathbf{O}$	😓 P
	LG123-A	0+00	5/16/2014	2014 Annual Survey	. 🗠	ROW Code and Pipe			*	
	LG123-A	0+10	5/16/2014	2014 Annual Survey		Milepost Inspection Date	0+00			
	LG123-A	0+20	5/16/2014	2014 Annual Survey		Effective Date	5/16/2014 *			
	LG123-A	0+30	5/16/2014	2014 Annual Survey						
	LG123-A	0+40	5/16/2014	2014 Annual Survey						
	LG123-A	0+50	5/16/2014	2014 Annual Survey						

Figure 7-66. Grid and Form

# Navigating a Form or Grid and Form

PCS Axis displays data in a grid and form at the same time. The grid and form synchronize when browsing records or entering data in a record. When editing a record in a grid, the same record displays and updates in the form. The same is true for the grid when editing a record in a form. In the following example, the facility record for milepost 0+20 is selected in both the grid and form (Figure 7-67).

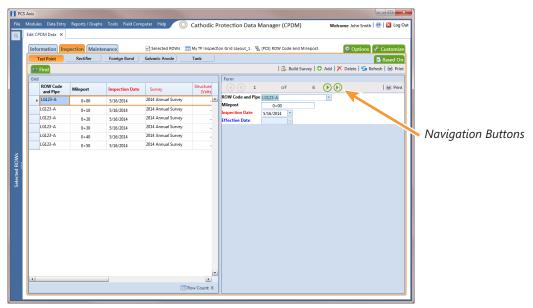


Figure 7-67. Grid and Form

Navigation buttons at the top of a form allow you to view the first  $(\mathbf{N})$ , previous  $(\mathbf{N})$ , next  $(\mathbf{N})$ , and last  $(\mathbf{N})$  facility record for a selected pipeline segment.

Functions performed with the *Based On* and *Find* tabs as well as command buttons (such as *Build Survey*, *Add*, *Delete*, and *Refresh*) perform the same as those previously described when working in a grid. See *Viewing Records in a Grid* (page 249) and *Using Find to Search a Data Entry Grid* (page 274) for more information.

### Arranging a Grid and Form

When the option *Grid And Form* is selected in the *Options* window, you can arrange the grid and form using any of the following methods:

- Right-clicking the title bar in the *Form* or *Grid* panel opens a shortcut menu allowing you to select the **Dock** or **Float** command. Selecting *Dock* docks a floating panel while selecting *Float* floats a docked panel.
- Double-clicking the title bar in the *Form* or *Grid* panel floats these panels when they are docked. Likewise, when the form or grid panel is floating, double-clicking the respective title bar docks the panel.
- Selecting the title bar of a form or grid and then dragging the panel displays a guide diamond. Drag the form or grid panel to the guide diamond to select where you want the panel to dock in the window. In the following example, the right guide in the diamond is selected for the new docking position as indicated by the yellow highlight color in both the guide diamond and window (Figure 7-68).

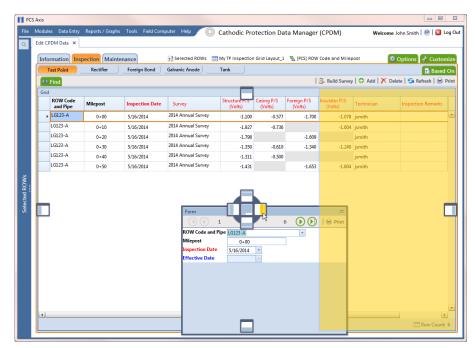


Figure 7-68. Arranging a Grid and Form

# Working with Continuous Survey Data

Information in this section explains how to manage survey readings and other data associated with a continuous survey using the Indirect Survey Manager (ISM) module.

Data entry grids in ISM are organized based on the following continuous survey methods: CIS (Close Interval Survey), AC CIS (AC Close Interval Survey), DCVG (DC Voltage Gradient), ACVG (AC Voltage Gradient), ACCA (AC Current Attenuation), Soil Resistivity, and Pearson. For a description of these survey methods, see *Appendix B* (page 845).

Topics in this section include those in the following list:

- Adding or Deleting a Record in a Continuous Survey
- Working with Survey Maintenance (page 288)
- Printing, Exporting, or Emailing a Continuous Survey (page 313)

**IMPORTANT:** Survey readings must be assigned to a survey folder in *Survey Folder Maintenance* before working with data in ISM. If needed, refer to *Adding a Continuous Survey Folder* (page 197) for more information.

### Adding or Deleting a Record in a Continuous Survey

To add or delete a record in a continuous survey, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-69).
 Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

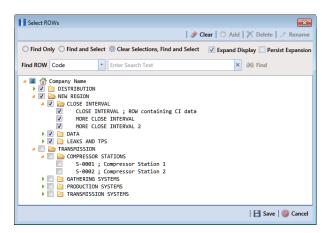


Figure 7-69. Select ROWs

- 2 If the ISM module is not open, click Modules > Indirect Survey Manager (ISM).
- **3** Open the ISM data entry grid. Click **Data Entry** > **Edit ISM Data** (Figure 7-70).

PCS	5 Axis									
- 1		_	Reports / Graphs	i Tools Field C	omputer Help		Indirect	Survey Manage	r (ISM)	Welcome John Smith   😢   🔀 Log C
Q	Edit ISM Da	ta ×								
						CIS Survey				🔯 Options 👉 Customize
	( a	s (	AC CIS	DCVG	ACVG		ACCA	Soil Resistivity	Pearson	
	Selected	Continuous	Survey Sel	ect Survey					•	

Figure 7-70. Edit ISM Data

4 Click the button labeled with the type of continuous survey data you want to work with, such as the **CIS** button **CIS** (Figure 7-71).

Sel	ected Continuous Surv	ey LG123-A 12/10/	2014 My CI Surve	y Dec 2014	•			
6	• Find				16	🖁 Survey Maintenance   🗘 A	dd   🗡 Delete   🌀 Re	efresh   🖢
	Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point	
•	10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	1	
	10+12	-0.570	-0.685	B2 - moderate	2000		7	
	16+00	-0.869	-0.671	C3 - severe	3000		1	
	22+00	-0.970	-0.685	D4 - immediate	4000		1	
	28+00	-0.673	-0.675	E5 - scheduled		CL Station Rd	1	
	34+00	-0.764	-0.678	F6 - monitored	6000		1	
	40+00	-0.967	-0.679				1	
	46+00	-0.855	-0.439				1	
	52+00	-0.623	-0.349			Line PI	1	
	58+00	-0.945	-0.723				1	
	64+00	-0.855	-0.624			N side Bradley Station Fence	V	
	70+00	-0.540	-0.354				1	

Figure 7-71. Edit ISM Data

- **5** Select a survey folder with survey readings you want to modify. Click the down arrow in **Selected Continuous Survey** and select a survey folder from the list.
- 6 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 7 To add a record in a survey, follow these steps:
  - a Click 🛟 Add to open the Add Record dialog box (Figure 7-72).
  - **b** Type a survey location in the **Station Number** field. This field is required.

Add Record	<b></b> )
Station Number 😣	
	🗄 Save 🛛 🚳 Cancel
	a save w cancer

Figure 7-72. Add Record

**c** Click **Save** to add the record in the grid. For example, a record for station number 10712+56 has been added in the next figure (Figure 7-73).

	lules Data Entry Re	ports / Graphs Tools	Field Computer H	elp 🔘 Indirect	Survey Manag	er (ISM)	Welcome John Smith	🖲   🔀 La
			My CIS Layou	t_1 🛚 📉 [PCS] CIS Survey			🔅 Options 🚽	Custom
	CIS	AC CIS DCV			Soil Resistivity	Pearson		
s	elected Continuous Sur	vey LG123-F 2/10/2	014 CIS Feb 20	014 LG123-F		•		
	IS Find				🔀 Surv	ey Maintenance	🔿 Add   🗡 Delete   😏 Refre	esh   😫 F
	Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Plot This Point	Survey Remarks	
	10712+35	-2.365	0.000	A1 - minor	1000	V	N side Wrigley station fence	
	10712+37	-2.350	0.000	B2 - moderate	2000	1		
	10712+40	-2.333	0.000	C3 - severe	3000	1	CL station road	
	10712+42	-2.239	0.000	D4 - immediate	4000	1		
	10712+45	-2.325	0.000	E5 - scheduled	5000	V		
	10712+47	-2.297	0.000	F6 - monitored	6000	1	Line PI	
	10712+50	-2.240	0.000			1		
	10712+52	-2.305	0.000			$\checkmark$		
	10712+55	-1.162	0.000			$\checkmark$	Line marker fence	
	10712+56					V		
	10712+57	-1.143	0.000			1		
	10712+60	-2.291	0.000			1		
	10712+62	-2.308	0.000			1		
	10712+65	-2.383	0.000			1		
	10712+67	-2.355	0.000			V	CL B/V 29	
	10712+70	-2.302	0.000			$\checkmark$		
	10712+72	-2.326	0.000			$\checkmark$		
	10712+75	-2.429	0.000			1		
	10712+77	-2.436	0.000			1		
	10712+80	-2.479	0.000			1		
	10712+82	-2.477	0.000			V	Uncut row tree line	
	10712+85	-2.426	0.000			V		
							Row C	

Figure 7-73. Edit ISM Data

- **d** Provide survey data as needed. For example, type a survey reading in the *CIS Structure P/S* field and remarks in the *Survey Remarks* field.
- e Click 😏 Refresh to update the grid.
- 8 To delete a record in a survey:
  - **a** Click a station number to select a row of records in the *Edit ISM Data* grid.
  - **b** Click **X** Delete.
  - c When the *Delete Record* message opens, click **➤ Delete** to delete the selected record. Clicking **S Cancel** cancels the operation.
  - **d** When the following *Warning* message displays, click **Yes** to delete the survey record:

Delete selected survey reading record? This action cannot be undone?

e Click 🧐 Refresh to update the grid.

## Working with Survey Maintenance

*Survey Maintenance* provides several functions that simultaneously change a group of records. For example, instead of editing one record at a time to reverse the order of survey readings, use *Reverse* to change a range of survey records all at the same time.

Topics in this section explain how to perform the following tasks:

- Reversing Survey Readings (page 289)
- Shifting Station Numbers (page 292)
- Copying Station Numbers to a New Survey (page 295)
- Appending a Survey (page 297)
- Deleting a Range of Station Numbers (page 301)
- Using Spike Filtering (page 303)
- Using Rubber Band (page 306)
- *Resetting Station Numbers* (page 310)

### **Reversing Survey Readings**

Use *Reverse* to reverse the order of survey readings so that the first reading becomes the last and the last reading becomes the first. Station numbers for all other survey readings are changed so that the survey is reversed or "flipped". This function is typically used when survey readings were taken in an upstream direction instead of downstream, or vice versa.

To reverse the order of survey readings, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-74). Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

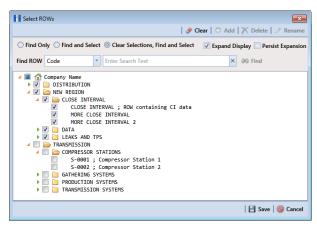


Figure 7-74. Select ROWs

- 2 If the ISM module is not open, click **Modules** > **Indirect Survey Manager** (**ISM**).
- 3 Open the ISM data entry grid. Click Data Entry > Edit ISM Data. Then click a button labeled with the type of continuous survey you want to work with, such as the CIS button cis (Figure 7-75).

		es Data Entry	Reports / Graphs Tools F	ield Computer Help	Indirect Surve	ey Manager (ISN	)	Welcome John Smith   😁   🛛
				[PCS] CIS Survey 🛛	[PCS] CIS Survey			🕸 Options 🖌 Cus
ſ		CIS	AC CIS DCVC	G ACVG	ACCA So	oil Resistivity	Pearson	
F	_							
	Selec	ted Continuous	Survey LG123-E 4/1/201	2 NE Paddock #5 L1	23	-		
	815	Find				🔀 Survey Main	tenance   🛟 Ac	dd   🗡 Delete   😏 Refresh   🔅
Ī		Station Number	CIS Structure P/S (Volts)	CIS Structure IRF (Volts)	Indication Classification	Indication Score	Plot This Point	Survey Remarks
	•	10712+32	-2.363	0.000	A1 - minor	1000	V	N side Wrigley station fence
		10712+35	-2.365	0.000	B2 - moderate	2000	1	
		10712+37	-2.350	0.000	C3 - severe	3000	1	
		10712+40	-2.333	0.000	D4 - immediate	4000	1	CL station road
		10712+42	-2.239	0.000	E5 - scheduled	5000	1	
		10712+45	-2.325	0.000	F6 - monitored	6000	1	
		10712+47	-2.297	0.000			1	
		10712+50	-2.240	0.000			1	
		10712+52	-2.305	0.000			1	
		10712+55	-1.162	0.000			1	Line PI
		10712+57	-1.143	0.000			$\checkmark$	
		10712+60	-2.291	0.000			1	
		10712+62	-2.308	0.000			V	
		10712+65	-2.383	0.000			$\checkmark$	Line marker Fence
1		10712+67	-2.355	0.000			$\checkmark$	
		10712+70	-2.302	0.000			1	
		10712+72	-2.326	0.000			1	
1		10712+75	-2.429	0.000			V	
		10712+77	-2.436	0.000			1	
		10712+80	-2.479	0.000			7	
		10712+82 10712+85	-2.477	0.000			V	
		10712+85 10712+87	-2.426	0.000			✓ ✓	
l		10/12+8/ 10712+90	-2.452	0.000			V V	
		10/12+90	-2.459	000.0			V	

Figure 7-75. Edit ISM Data

4 Select a survey folder with survey readings you want to reverse. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

5 Click Survey Maintenance to open the Survey Maintenance dialog box.
 Then click Reverse if the tab is not selected (Figure 7-76).

Survey Maintenance	_		- 5-	and the second sec			
🗠 Reverse 🛛 🥓 Shi	ft 🗍 Copy	/ 🔁 Append	🗡 Delete	🔓 SpikeFiltering	😐 RubberBand	🚦 Reset	
							🛛 🗄 Appl
Enter starting and end	ding Station N	lumbers.					
The order of all readin	ngs between (	and including) th	ese Station Nu	mbers will be reverse	ed.		
Starting Station Nun	nber						10712+32
Ending Station Num	ber						11372+78

Figure 7-76. Reverse Survey Readings

**6** Type a starting station number in the field **Starting Station Number** and an ending station number in the field **Ending Station Number**.

**NOTE:** Clicking the Windows close button **EXE** cancels the operation and closes the dialog box.

7 Click 💾 Apply to reverse survey readings and update the data entry grid.

#### Shifting Station Numbers

Use *Shift* to shift a range of station numbers by a specified number of feet (or meters) or in the direction of an existing facility. Use the option labeled *Distance* when shifting station numbers by feet or meters. To shift a range of station numbers in the direction of an existing facility, use the option labeled *Shift To Facility*.

Using *Shift* allows you to add or subtract a fixed distance to station numbers for a range of readings in a survey. This function is typically used when station numbers are not known when performing the survey and they need to be shifted to correct station numbers.

To shift station numbers, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-77). Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

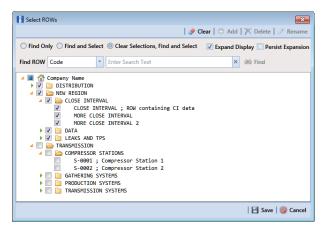


Figure 7-77. Select ROWs

- 2 If the ISM module is not open, click Modules > Indirect Survey Manager (ISM).
- **3** Click **Data Entry** > **Edit ISM Data** to open the ISM data entry grid. Then click a button labeled with the type of continuous survey data you want to work with, such as the **CIS** button **CIS** (Figure 7-78).

	ed Continuous Surve	NC CIS DCV			Soil Resistivity	Pearson		
		y LG123-A 12/10/2	014 My CI Survey					
SS Fi				/ Dec 2014	*			
	ind				10	🕽. Survey Maintenance   😋 A	dd   🗡 Delete   🈘 R	efresh   😫
S	Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point	
•	10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	1	
	10+12	-0.570	-0.685	B2 - moderate	2000		1	
	16+00	-0.869	-0.671	C3 - severe	3000		1	
	22+00	-0.970	-0.685	D4 - immediate	4000		1	
	28+00	-0.673	-0.675	E5 - scheduled	5000	CL Station Rd	1	
	34+00	-0.764	-0.678	F6 - monitored	6000		$\checkmark$	
	40+00	-0.967	-0.679				$\checkmark$	
	46+00	-0.855	-0.439				$\checkmark$	
	52+00	-0.623	-0.349			Line PI	V	
	58+00	-0.945	-0.723				$\checkmark$	
	64+00	-0.855	-0.624			N side Bradley Station Fence	1	
	70+00	-0.540	-0.354				$\checkmark$	

Figure 7-78. Edit ISM Data

4 Select a survey folder with survey readings you want to shift. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

5 Click Survey Maintenance to open the Survey Maintenance dialog box.
 Then click Shift (Figure 7-79).

Survey Maintenance						×
🖘 Reverse 🛛 🧈 Shift	🗍 Copy 🛛 🔁 Append	🗡 Delete	SpikeFiltering	😐 RubberBand	🚦 Reset	
						🛛 💾 Apply
Enter starting and ending	Station Number and amo	ount of shift.				
The shift distance may be	plus or minus indicating	the direction of	shift.			
Starting Station Number						0+00
Ending Station Number						90+10
		(	Distance (feet)			\$
		(	Shift To Facility			00 Find

Figure 7-79. Shift Station Numbers

- **6** Type a starting station number in the field **Starting Station Number** and an ending station number in the field **Ending Station Number**.
- 7 Select the **Distance** option if it is not selected.
- Specify a shift distance. Type or select the number of feet (or meters) in the
   Distance field. Clicking the A up arrow increases the value; clicking the V down arrow decreases it.
- **9** If you want to shift station numbers in the direction of an existing facility location, follow these steps:
  - a Select the option Shift To Facility.
  - Type a facility location in the Shift To Facility field or select one in the Select Facility dialog box. To select a facility location, click a Find to open the Select Facility dialog box and select a facility in the grid. Then click Save (Figure 7-80).

23A-0 23A-1 23A-2 23A-3 23A-4 2
23A-2 23A-3
23A-3
23A-4
23A-5
23A-6
23A-7
23A-8
23A-6 23A-7

Figure 7-80. Select Facility

**NOTE:** Clicking the Windows close button **EXE** cancels the operation and closes the dialog box.

**10** Click **H Apply** to shift station numbers and update the data entry grid.

#### Copying Station Numbers to a New Survey

To copy a range of station numbers with survey readings to a new survey, complete the following steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-81).
 Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

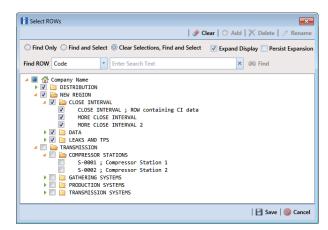


Figure 7-81. Select ROWs

- 2 If the ISM module is not open, click Modules > Indirect Survey Manager (ISM).
- 3 Click Data Entry > Edit ISM Data to open the ISM data entry grid. Then click a button labeled with the type of continuous survey data you want to work with, such as the CIS button CIS (Figure 7-82).
- 4 Select a survey folder with survey readings you want to copy. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

Continuous Surve	y LG123-A 12/10/2	014 My CI Survey	y Dec 2014	•			
				1.0			
tion Number				10	🛃 Survey Maintenance   🛟 A	dd 🛛 🟋 Delete 🛛 😏 Ri	efresh   😸 F
	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point	
10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	1	
10+12	-0.570	-0.685	B2 - moderate	2000		1	
16+00	-0.869	-0.671	C3 - severe	3000		1	
22+00	-0.970	-0.685	D4 - immediate	4000		1	
28+00	-0.673	-0.675	E5 - scheduled	5000	CL Station Rd		
34+00	-0.764	-0.678	F6 - monitored	6000			
40+00	-0.967	-0.679				1	
46+00	-0.855	-0.439				1	
52+00	-0.623	-0.349			Line PI	1	
58+00	-0.945	-0.723				1	
64+00	-0.855	-0.624			N side Bradley Station Fence	1	
70+00	-0.540	-0.354				1	
	10+12 16+00 22+00 28+00 34+00 40+00 46+00 52+00 58+00 64+00	10+12         -0.570           16+00         -0.889           22+00         -0.970           28+00         -0.673           34+00         -0.764           40+00         -0.985           52+00         -0.623           52+00         -0.635           58+00         -0.945           64+00         -0.855	10+12         -0.570         -0.685           16-00         -0.869         -0.671           22-00         -0.970         -0.685           28-00         -0.673         -0.673           34-00         -0.674         -0.675           40+00         -0.957         -0.685           52-00         -0.653         -0.393           52-00         -0.623         -0.349           58-00         -0.945         -0.723           64+00         -0.855         -0.623	10+12         -0.570         -0.685         B2-moderate           16-00         -0.269         -0.671         C3-servet           22-00         -0.970         -0.665         D4-immediate           28-00         -0.673         -0.675         D5-scheduled           34-00         -0.767         -0.675         F5-scheduled           40-00         -0.957         -0.678         F6-monitored           40+00         -0.955         -0.439         -0.273           52-00         -0.623         -0.349         -0.723           64-00         -0.955         -0.624         -0.723	10+12         -0.570         -0.685         B2 - moderate         2000           16-00         -0.669         -0.671         C3 - servet         3000           22-00         -0.670         -0.685         B2 - moderate         4000           28-00         -0.671         -0.675         D4 - immediate         4000           40-00         -0.076         -0.677         F5 - scheduled         5000           40-00         -0.067         -0.679         66         60           46-00         -0.055         -0.439         52-00         -0.643         -0.723           58-00         -0.0455         -0.624         -0.723         -	10+12         -0.570         -0.685         82 - moderate         2000           16-00         -0.666         -0.671         C3 - severe         3000           22-00         -0.070         -0.685         N2 - were         3000           28-00         -0.673         -0.675         S - icheduled         5000           28-00         -0.673         -0.676         F6 - monitored         6000           40-00         -0.067         F6 - monitored         6000           46-00         -0.685         -0.079         E           52-00         -0.682         -0.349         Line PI           52-00         -0.642         -0.723         High           64-00         -0.652         -0.349         Line PI	10+12         -0.570         -0.685 B2 - moderate         2000         ✓           15-00         -0.689         -0.671 C3 - severe         3000         ✓           22-00         -0.070         -0.685 B4 - immediate         4000         ✓           28-00         -0.673         -0.675 B5 - scheduled         5000         ✓           28-00         -0.674         -0.675 F5 - scheduled         5000         ✓           40-00         -0.957         -0.678         ✓         ✓           22-00         -0.623         -0.439         ✓         ✓           25-00         -0.623         -0.349         ✓         ✓           25-00         -0.623         -0.723         ✓         ✓           64-00         -0.955         -0.723         ✓         ✓

Figure 7-82. Edit ISM Data

- 5 Click Survey Maintenance to open the Survey Maintenance dialog box.
   Then click Copy (Figure 7-83).
- **6** Type a starting station number in the field **Starting Station Number** and an ending station number in the field **Ending Station Number**.
- 7 Type a name for the new survey in the field **New Survey Name**.
- 8 Click the down arrow in the field **New Survey Date** and select a survey date using a calendar.

**NOTE:** Clicking the Windows close button **EXE** cancels the operation and closes the dialog box.

**9** Click **Apply** to copy the range of station numbers with survey readings to a new survey. The new survey is available for selection in the *Selected Continuous Survey* field.

li	Survey Mai	ntenance				and the second s			×
	🖘 Reverse	🥜 Shift	🗍 Сору	C Append	🗡 Delete	🔓 SpikeFiltering	😐 RubberBand	🚦 Reset	
									🛛 🕒 Apply
	Enter starting	g and ending	station Nu	mbers and the i	name of the n	ew survey to create.			
	The new sun	vey will be cr	eated using	points between	(and includin	g) the range entered			
	Starting Sta	tion Numbe	r						10712+32
	Ending Stat	ion Number							11372+78
	New Survey	/ Name						NE Pade	dock #5 L123 Copy 1
	New Survey	/ Date							-

Figure 7-83. Copy to New Survey

#### Appending a Survey

To append a survey with a range of station numbers from another survey (including associated survey readings), complete the following steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-84).
 Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

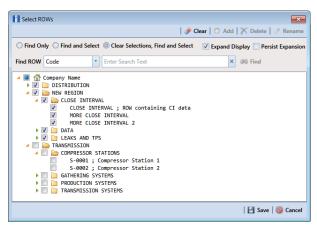


Figure 7-84. Select ROWs

- 2 If the ISM module is not open, click **Modules** > **Indirect Survey Manager** (**ISM**).
- 3 Click Data Entry > Edit ISM Data to open the ISM data entry grid. Then click a button labeled with the type of continuous survey data you want to work with, such as the CIS button CIS (Figure 7-85).
- 4 Select the survey folder you want to append with survey readings from another survey. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

		IC CIS DCV	G ACVG	ACCA	Soil Resistivity	Pearson		
Select	ted Continuous Surve	y LG123-A 12/10/2	014 My CI Surve	y Dec 2014	*			
<b>65</b>					10	🖁 Survey Maintenance   😋 A	dd   🗙 Delete   😏 R	efresh 🛛 😖 Pri
	Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point	
	10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	√	
	10+12	-0.570	-0.685	B2 - moderate	2000		1	
	16+00	-0.869	-0.671	C3 - severe	3000		√	
	22+00	-0.970	-0.685	D4 - immediate	4000		V	
	28+00	-0.673	-0.675	E5 - scheduled	5000	CL Station Rd	1	
	34+00	-0.764	-0.678	F6 - monitored	6000		1	
	40+00	-0.967	-0.679				$\checkmark$	
	46+00	-0.855	-0.439				$\checkmark$	
	52+00	-0.623	-0.349			Line PI	<b>V</b>	
	58+00	-0.945	-0.723				$\checkmark$	
	64+00	-0.855	-0.624			N side Bradley Station Fence	$\checkmark$	
	70+00	-0.540	-0.354				$\checkmark$	

Figure 7-85. Edit ISM Data

- 5 Click Survey Maintenance to open the Survey Maintenance dialog box. Then click C Append (Figure 7-87).
- 6 Select a survey with station numbers you want to add (append) to the survey currently displayed in the ISM data entry grid. Click the down arrow in field Survey To Append From and select a survey in the selection list.
- 7 Identify a range of station numbers you want to append to the survey currently displayed in the ISM data entry grid. Type a starting station number in the field Starting Station Number and an ending station number in the field Ending Station Number.

**NOTE:** Clicking the Windows close button **EXE** cancels the operation and closes the dialog box.

**8** If duplicate station numbers do exist, a message displays requiring you to make one of the following selections:

Survey Maintenance	-			and the second	_	_	×
🖘 Reverse 🛛 🥔 Shift	🗍 Сору	Append	🗡 Delete	SpikeFiltering	😶 RubberBand	🐮 Reset	
							Apply
Appending readings to t	he selected sur	vey will perm	anently alter t	he survey.			
You should make a back	up copy of the	survey before	appending b	y using the 'Copy' tal	<b>)</b> .		
Survey To Append From	,			LC	5123-D 12/10/2013	My Continu	ous Survey Folder 🔹
Starting Station Number	r						0+00
Ending Station Number							0+20

Figure 7-86. Append Survey

**9** Click **Apply**. If no duplicate station numbers exist, PCS Axis adds the range of appended station numbers with survey readings to the survey currently displayed in the ISM data entry grid.

If duplicate station numbers do exist, the *Append Duplicates* message displays requiring you to select one of options shown in the following figure. Select an option and then click  $\checkmark$  **OK** to close the message.

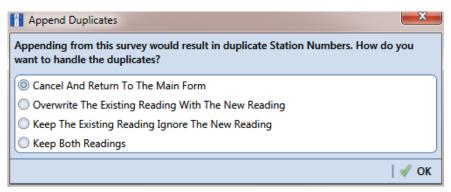


Figure 7-87. Append Duplicates

### Deleting a Range of Station Numbers

Information in this section explains how to delete a range of station numbers in a survey. Survey readings associated with the range of station numbers are also deleted. Deleting all station numbers in a survey also deletes the survey.

To delete a range of station numbers in a survey, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-88). Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

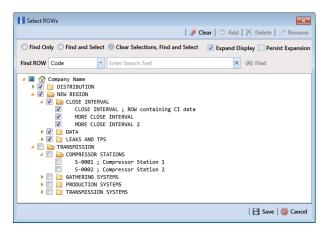


Figure 7-88. Select ROWs

- 2 If the ISM module is not open, click Modules > Indirect Survey Manager (ISM).
- 3 Click Data Entry > Edit ISM Data to open the ISM data entry grid. Then click a button labeled with the type of continuous survey data you want to work with, such as the CIS button CIS (Figure 7-89).
- 4 Select a survey folder with station numbers you want to delete. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

	AC CIS DCV			Soil Resistivity	Pearson		
_	LG123-A 12/10/2	2014 My CI Surve	y Dec 2014	•			
Find					🖁 Survey Maintenance   😳 A		efresh   😸 Pri
Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point	
10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	<b>V</b>	6
10+12	-0.570	-0.685	B2 - moderate	2000		1	
16+00	-0.869	-0.671	C3 - severe	3000		<b>V</b>	
22+00	-0.970	-0.685	D4 - immediate	4000		$\checkmark$	
28+00	-0.673	-0.675	E5 - scheduled	5000	CL Station Rd	$\checkmark$	
34+00	-0.764	-0.678	F6 - monitored	6000		1	
40+00	-0.967	-0.679				$\checkmark$	
46+00	-0.855	-0.439				$\checkmark$	
52+00	-0.623	-0.349			Line PI	$\checkmark$	
58+00	-0.945	-0.723				$\checkmark$	
64+00	-0.855	-0.624			N side Bradley Station Fence	$\checkmark$	
70+00	-0.540	-0.354				$\checkmark$	

Figure 7-89. Edit ISM Data

- 5 Click Survey Maintenance to open the Survey Maintenance dialog box.
   Then click X Delete (Figure 7-90).
- 6 Identify the range of station numbers you want to delete (includes associated survey readings). Type a starting station number in the field Starting Station Number and an ending station number in the field Ending Station Number.

**NOTE:** Clicking the Windows close button **EXE** cancels the operation and closes the dialog box.

7 Click 💾 Apply.

H	Survey Mai	ntenance							×
	🖘 Reverse	🥜 Shift	🗍 Сору	G Append	X Delete	🔓 SpikeFiltering	🖸 RubberBand	🚦 Reset	
									Apply
	Enter starting	g and ending	3 Station Nu	mber.					
	All readings	between (an	d including)	these Station N	umbers will b	e deleted.			
	Starting Sta	tion Numbe	er						10712+32
	Ending Stat								11372+78

Figure 7-90. Delete Range of Station Numbers

8 When the message *Delete Survey Readings* displays, click **OK** to delete station numbers and associated survey readings. Clicking **Cancel** cancels the operation (Figure 7-91).

Delete Survey Readings
Delete 4 survey readings. Continue?
🖋 OK 🛛 🚳 Cancel

Figure 7-91. Delete Survey Readings

#### **Using Spike Filtering**

Spike filtering is available only when working with a close interval survey (CIS). Use spike filtering to exclude inaccurate survey readings in graphs and reports that are typically due to poor contact between the soil and reference electrode. Using this feature allows you to consider only those survey readings that are accurate when analyzing survey data.

Inaccurate readings are excluded based on a percentage value you specify for the filter. PCS Axis compares the on/off values of the current reading with the on/off values of the previous and next reading. If the current survey reading differs from the previous and next survey reading by more than the percentage allowed, PCS Axis disables the option *Plot This Point* for the current survey reading and also excludes it in the *CIS Survey Graph* report. To apply spike filtering to a range of station numbers, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-92). Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

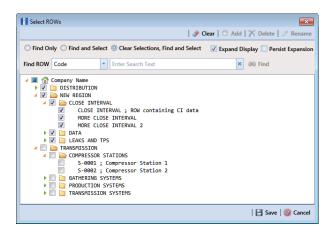


Figure 7-92. Select ROWs

- 2 If the ISM module is not open, click Modules > Indirect Survey Manager (ISM).
- 3 Click Data Entry > Edit ISM Data to open the ISM data entry grid. Then click the CIS button cis to work with a close interval survey (Figure 7-93, page 305).
- 4 Select a survey folder with station numbers you want to apply *Spike Filtering*. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

85	Find		2014 My CI Surve	y Dec 2014	10	🕽 Survey Maintenance   😋 A	dd   🗡 Delete   🈘 R	lefresh   😫 Pi
	Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point	
•	10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	V	
	10+12	-0.570	-0.685	B2 - moderate	2000		1	
	16+00	-0.869	-0.671	C3 - severe	3000		1	
	22+00	-0.970	-0.685	D4 - immediate	4000		<b>V</b>	
	28+00	-0.673	-0.675	E5 - scheduled	5000	CL Station Rd	1	
	34+00	-0.764	-0.678	F6 - monitored	6000		1	
	40+00	-0.967	-0.679				1	
	46+00	-0.855	-0.439				$\checkmark$	
	52+00	-0.623	-0.349			Line PI	1	
	58+00	-0.945	-0.723				$\checkmark$	
	64+00	-0.855	-0.624			N side Bradley Station Fence	$\checkmark$	
	70+00	-0.540	-0.354				$\checkmark$	

Figure 7-93. Edit ISM Data

- 5 Click Survey Maintenance to open the Survey Maintenance dialog box.
   Then click SpikeFiltering (Figure 7-94, page 306).
- **6** Type a starting station number in the field **Starting Station Number** and an ending station number in the field **Ending Station Number**.
- 7 Type a value in the **Spike Percentage** field. Valid entries are in a range of 1-99.

**NOTE:** Clicking the Windows close button **EX** cancels the operation and closes the dialog box.

8 Click 💾 Apply and then click 🗹 OK when a status message displays.

The option *Plot This Point* is disabled in the data entry grid only for station numbers that meet *Spike Filtering* criteria.

🚹 Survey Maintenanc	2			and the second			×
🗠 Reverse 🛛 🥔 Sł	ift 🗍 Copy	🔓 Append	🗡 Delete	SpikeFiltering	RubberBand	🚦 Reset	
							🗎 Apply
Enter starting and er	ding Station N	umbers and spik	e percentage.				
Set the percent diffe	rence allowed b	petween readings	before the di	fference is considere	d a 'spike'.		
Starting Station Nu	mber						10712+52
Ending Station Nun	nber	_					11372+78
Spike Percentage		%					

Figure 7-94. Spike Filtering

### Using Rubber Band

Use *Rubber Band* to adjust a range of station numbers by stretching or shrinking sections of a survey so that station numbers line up with known points along the survey or existing facilities.

Using *Rubber Band* allows you to re-align station numbers for a selected survey. After entering known station numbers for the first, last, and any other station numbers in between, *Rubber Band* adjusts remaining station numbers in a linear manner between known station numbers. Station numbers are then listed in ascending order (lowest to highest).

When you first use *Rubber Band*, the fields labeled *Original* and *Target* include two match point records by default. These match point records are the first and last station numbers in the selected survey. Station numbers in the *Original* field are the original station numbers initially stored in PCS Axis as a result of importing survey data, entering survey data manually, or receiving survey data from the Allegro Field PC. Station numbers in the *Target* field are the corrected or adjusted station numbers that you enter or are entered as a result of the *Rubber Band* feature.

To adjust a range of station stations using the Rubber Band function, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-95). Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

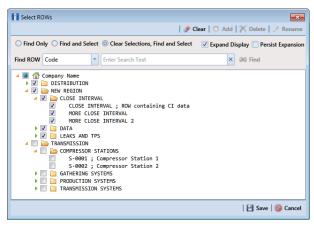


Figure 7-95. Select ROWs

- 2 If the ISM module is not open, click Modules > Indirect Survey Manager (ISM).
- 3 Click Data Entry > Edit ISM Data to open the ISM data entry grid. Then click a button labeled with the type of continuous survey data you want to work with, such as the CIS button CIS (Figure 7-96).
- 4 Select a survey folder with station numbers you want to apply the *Rubber Band* function. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

Find				10	🔒 Survey Maintenance   🔿 Ad	dd   🗡 Delete   😏 R	efresh   😸 P
Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point	
10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	V	
10+12	-0.570		B2 - moderate	2000		×	
16+00	-0.869	-0.671	C3 - severe	3000		<b>v</b>	
22+00	-0.970	-0.685	D4 - immediate	4000		2	
28+00	-0.673	-0.675	E5 - scheduled	5000	CL Station Rd	1	
34+00	-0.764	-0.678	F6 - monitored	6000		1	
40+00	-0.967	-0.679				<b>V</b>	
46+00	-0.855	-0.439				1	
52+00	-0.623	-0.349			Line PI	1	
58+00	-0.945	-0.723				1	
64+00	-0.855	-0.624			N side Bradley Station Fence	1	
70+00	-0.540	-0.354				1	

Figure 7-96. Edit ISM Data

- 5 Click Survey Maintenance to open the Survey Maintenance dialog box.
   Then click RubberBand (Figure 7-97, page 309).
- 6 Complete the following steps to re-align station numbers in a survey:
  - **a** To re-align the first station number in the survey, type a new station number in the **Target** field of the first station number.

If you want to re-align the first station number to an existing facility instead, click and the find button to open the *Select Facility* dialog box and select a facility in the grid. Then click **Save**.

**b** To re-align the last station number in the survey, type a new station number in the **Target** field of the last station number.

If you want to re-align the last station number to an existing facility instead, click and the find button to open the *Select Facility* dialog box and select a facility in the grid. Then click **Save**.

c To add new match points for known station numbers, click New to add empty *Original* and *Target* match point fields. Then type the station number you want to re-align in the **Original** field and the adjusted (or corrected) station number in the **Target** field.

If you want to re-align the adjusted station number to an existing facility instead, click and the find button to open the *Select Facility* dialog box and select a facility in the grid. Then click **Save**.

**d** To delete a row of match points, select the row and then click  $\bigwedge$  **Delete**.

**NOTE:** Clicking **Seset** before clicking *Apply* resets station numbers to their original values.

- e Click Apply. When the *Apply* message displays, click **V** to continue or **O** Cancel to cancel the operation.
- 7 Click 🧐 Refresh to update data in the grid.

Survey Main	tenance							_
🖘 Reverse	🥜 Shift	🗍 Сору	G Appe	nd 🗡 Delete	SpikeFiltering	RubberBand	🚦 Reset	
						🗘 New	😏 Reset   🏹	Delete 🛛 💾 Apply
This option al	lows you to	stretch your	survey aga	inst matchpoints	defined in the grid.			
This could be	used with a	alignment she	ets agains	t your comments	to ensure your survey	accurately depicts	the big picture	e of your pipe.
Original		Target						
Original	10+00	10+	00 00					l.
_	70+00	70+	00 00					
								Row Count: 2

Figure 7-97. Rubber Banding

#### **Resetting Station Numbers**

Use *Reset* to return all station numbers in the selected survey to original station numbers that were collected when the survey was first entered in the ISM data entry grid.

To reset station numbers, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-98).
 Select the pipeline segment(s) with the facilities you want to work with, then click
 Save to close the window.

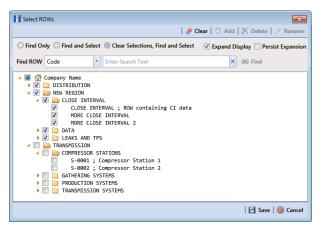


Figure 7-98. Select ROWs

- 2 If the ISM module is not open, click Modules > Indirect Survey Manager (ISM).
- 3 Click Data Entry > Edit ISM Data to open the ISM data entry grid. Then click a button labeled with the type of continuous survey data you want to work with, such as the CIS button CIS (Figure 7-99).
- 4 Select a survey folder with survey readings you want to shift. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

	ected Continuous Surve	y LG123-A 12/10/	1014 My CI Surve	y Dec 2014	10	🕽. Survey Maintenance   🔿 A	dd   🗡 Delete   🈏 R	lefresh   😖 F
	Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point	
•	10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	7	
	10+12	-0.570	-0.685	B2 - moderate	2000		1	
	16+00	-0.869	-0.671	C3 - severe	3000		7	
	22+00	-0.970	-0.685	D4 - immediate	4000		1	
	28+00	-0.673	-0.675	E5 - scheduled	5000	CL Station Rd	1	
	34+00	-0.764	-0.678	F6 - monitored	6000		7	
	40+00	-0.967	-0.679				1	
	46+00	-0.855	-0.439				$\checkmark$	
	52+00	-0.623	-0.349			Line PI	1	
	58+00	-0.945	-0.723				V	
	64+00	-0.855	-0.624			N side Bradley Station Fence	$\checkmark$	
	70+00	-0.540	-0.354				$\checkmark$	

Figure 7-99. Edit ISM Data

**5** Click **Survey Maintenance** to open the *Survey Maintenance* dialog box. Then click **Reset** (Figure 7-100).

1	🚹 Survey Mai	ntenance		10 Mar 10 Mar		Contraction of the local division of the loc			×
	🖘 Reverse	🥜 Shift	🗍 Сору	G Append	🗡 Delete	ያ SpikeFiltering	RubberBand	🚦 Reset	
									Apply
	Clicking the	Apply butto	n will revert a	all of your Static	on Numbers to	their original values			

Figure 7-100. Reset

6 Click Apply. When the *Reset Station Numbers* message displays, click **V** OK to reset all station numbers or **O** Cancel to cancel the operation (Figure 7-101).

The data entry grid now displays original station numbers.

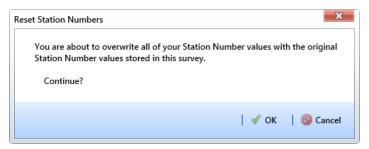


Figure 7-101. Reset Station Numbers

## Printing, Exporting, or Emailing a Continuous Survey

The following information explains how to print, export, or email a report for a continuous survey displaying in the *Edit ISM Data* grid. Supported file formats for exporting a report include PDF, HTML, MHT, RTF, XLS, XLSX, CSV, TXT, and Image (BMP, EMF, WMF, GIF, JPEG, PNG, and TIFF).

Complete the following steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-102). Select the pipeline segment(s) with the facilities you want to work with, then click Save to close the window.

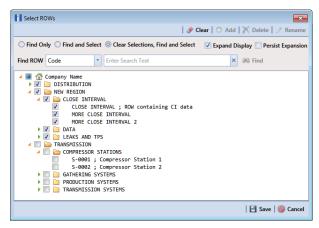


Figure 7-102. Select ROWs

- 2 If the ISM module is not open, click **Modules** > **Indirect Survey Manager** (ISM).
- 3 Click **Data Entry** > **Edit ISM Data** to open the ISM data entry grid. Then click a button labeled with the type of continuous survey data you want to work with, such as the **CIS** button **CIS** (Figure 7-103).
- 4 Select a survey folder with survey readings you want to print or export. Click the down arrow in **Selected Continuous Survey** and select a survey folder in the selection list.

	CIS	■ MyCl Survey Layout Theme_1 M MyCl Survey Sort Theme_1         Ø Options           AC CDS         DCVG         ACCA         Soil Resistivity         Pearson										
		ey LG123-A 12/10/	2014 Nr. CT. Summa	v Doc. 2014								
		ey [10123-A 12/10/.	2014 Hy CI Surve	y Dec 2014								
61	Find				10	🖁 Survey Maintenance   🗘 A	🕽 Add   🗡 Delete   😏 Refresh   😓					
	Station Number	CIS Structure P/S	CIS Structure IRF	Indication Classification	Indication Score	Survey Remarks	Plot This Point					
•	10+00	-0.760	-0.670	A1 - minor	1000	Line marker Fence	V					
	10+12	-0.570	-0.685	B2 - moderate	2000		V					
	16+00	-0.869	-0.671	C3 - severe	3000		1					
	22+00	-0.970	-0.685	D4 - immediate	4000		1					
	28+00	-0.673	-0.675	E5 - scheduled	5000	CL Station Rd	1					
	34+00	-0.764	-0.678	F6 - monitored	6000		1					
	40+00	-0.967	-0.679				V					
	46+00	-0.855	-0.439				1					
	52+00	-0.623	-0.349			Line PI	1					
	58+00	-0.945	-0.723				V					
	64+00	-0.855	-0.624			N side Bradley Station Fence	V					
	70+00	-0.540	-0.354				V					

Figure 7-103. Edit ISM Data

- 5 Click 🚔 **Print** to open a print preview window (Figure 7-104).
- 6 To print the report using the default Windows printer, click 昌 Quick Print.
- 7 To open a print dialog box and select a printer to print the report, click **Print**.

				My Pipe	Bas Cas								
					Survey								
		C - 1	ted ROWs: No				(m. 2. D)						
	0-1												
	Options: Baser	d Un: selecte	d ROWS; Selec		ious sur Folder	vey: LG123-L	12/10	/2013 N	ay contin	iudus surv	ey		
					order								
				Plot									
Stati on Numbe	CIS Structure CIS r P/S		Survey Remarks	This Point		Indication Classification							
10712+52	-2.305	0.000	sarrey memorianis	Yes	veore	0.0201100001							
10712+55	-1.162	0.000Line P	2	Yes									
10712+57	-1.143	0.000		Yes									
10712+60	-2.291	0.000		Yes									
10712+62	-2.308	0.000		Yes									
10712+65	-2.383		narker Fence	Yes									
10712+67	-2.355	0.000		Yes									
10712+70	-2.302	0.000		Yes									
10712+72	-2.326	0.000		Yes									
10712+75	-2.429	0.000		Yes									
10712+77	-2.436	0.000		Yes									
10712+80	-2.479	0.000		Yes									
10712+82	-2.477	0.000		Yes									
10712+85	-2.426	0.000		Yes									
10712+87	-2.452	0.000		Yes									
10712+90 10712+92	-2.459	0.000		Yes Yes									
10712+92	-1.270	0.000		Yes									
10712+95	-1.195	0.000		Yes									
10713+00	-1.183	0.000		Yes									
10713+02	-1.149	0.000		Yes									
10713+05	-1.136	0.000		Yes									
10713+07	-1.135	0.000		Yes									
10713+10	-1.134	0.000		Yes									
10713+12	-1.629	0.000		Yes									
10713+15	-2.377	0.000		Yes									
10713+17	-2.409	0.000		Yes									
10713+20	-2.430	0.000		Yes									
10713+22	-2.445	0.000		Yes									
			12/10/20	13	Pa	ge 1/735							

Figure 7-104. Print Preview

- **8** To select a file format and export the report, follow these steps:
  - a Click the down arrow in **Export Document** and select a file format in the selection list.
  - **b** When the *Options* dialog box opens, set up optional property settings and then click **OK** to close the dialog box.
  - **c** When the *Save As* dialog box opens, type a name for the report in the **File name** field and then navigate to a location on your computer to save the report.
  - **d** Click **Save**. When the message *Do you want to open this file* displays, click **Yes** or **No**.
- **9** To send the report as an attachment in an email, follow these steps:
  - a Click the down arrow in **► •** Send via E-mail and select a file format in the selection list.
  - **b** When the *Options* dialog box opens, set up optional property settings and then click **OK** to close the dialog box.
  - c When the *Save As* dialog box opens, type a name for the report in the **File name** field and then navigate to location on your computer to save the report. Click **Save**.
  - **d** When an email message opens with the report as an attachment, select an email recipient and then click **Send**.
- **10** Click 🐼 **Exit** to close the print preview window and return to the data entry grid.

# Working with Themes and Filter Groups

A theme is a group of named settings saved for later use, such as a grid layout or sort theme. Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

Several installed themes are provided with the PCS Axis software installation. PCS Axis installed themes are public themes available to all PCS Axis users. These themes are identified with a globe icon and PCS in brackets [PCS], such as **(PCS) Test Point Inspections**.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

A filter group is a named set of one or more filters that affect the data output in the *Define Routes* grid and subsequently the route itself. PCS Axis provides two types of filter groups you can define. These include the AND and OR filter groups.

When you add a filter group, you define filter conditions that determine which records to include or exclude in the *Define Routes* grid and the route. Adding an AND filter group produces a subset of records that meet *all* filter conditions. Adding an OR filter group produces a subset of records that meet *any* filter condition. When you apply a filter group, PCS Axis processes filters in descending order beginning with the filter at the top of the group.

The following sections describe how to add a layout theme, sort theme, and one or more optional filter groups. Topics include those in the following list:

- Adding a Data Grid Layout Theme
- Adding a Sort Theme (page 320)
- Adding an AND Filter Group (page 324)
- Adding an OR Filter Group (page 327)
- Editing and Arranging Filters and Filter Groups (page 330)

### Adding a Data Grid Layout Theme

A layout theme is a group of fields in a grid layout. Adding a new layout theme allows you to select which fields you want to include in the grid layout and then save the layout as a theme for later use. The following procedure applies to the grid layout for any data entry grid in PCS Axis.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-105).
 Click Save to close the window.

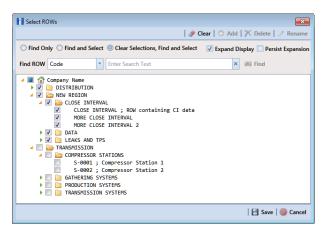


Figure 7-105. Select ROWs

- 2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data** to open the *Edit CPDM Data* window.
- Open the data entry grid that you want to add a new grid layout theme. For example, click the Inspection tab Inspection and then the Test Point button Test Point to display the Test Point Inspection grid.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 Click the Customize tab *Customize* then the Add button to open the *New Layout Theme* dialog box (Figure 7-106).

New Layout Theme
Enter Theme Name:
8
Public V Copy Content
Copy Fields From Theme:
[PCS] Test Point Information
Fields in the Selected Theme:
ROW Code and Pipe Milepost Location Description Effective Date Facility Active Test Point Protection Criteria Activate Foreign P/S Activate Casing P/S Activate Foreign P/S Activate Insulator P/S Permanent Comments
🛷 OK   🚳 Cancel

Figure 7-106. New Layout Theme

- 6 Type a name for the layout theme in the field **Enter Theme Name** (required).
- 7 If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

8 If you want to copy fields from an existing layout theme, click the **Copy Content** check box to place a check mark inside the check box. Then click the down arrow in the field **Copy Fields From Theme** and select a theme in the selection list.

If you do not want to copy fields from an existing layout theme, remove the check mark inside the *Copy Content* check box by clicking the check box.

**9** Click **V OK** to save changes and return to the *Layouts* page (Figure 7-107).

A kis Module: Data fruy Reports / Graph: Tools Field Computer Edd CPDM Data x  Information Inspection Maintenance Layouts: rest Point Inspection Generation Gid Layout Theme.1  Select A for Field.  Multiple Comparison of Layout Theme.3  Test Point Facility Fields  Test Point Facility Fields  Test Point Facility Fields  Test Point Inspection Fields  Test Point Inspection Fields  Test Point Inspection Fields	Cathodic Protection Data Manager (CPDM)  Cathodic Protection Data Manager (CPDM)  Cathodic Protection Data Manager (CPDM)  Cathodic Protection  Cathodic Pro	Cose
--	--	------

Figure 7-107. Layouts

- **10** Complete the following steps to add and remove fields in the new layout theme as needed:
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ All Fields.
  - **b** Double-click a field listed in the left pane to move it to the right pane. Repeat this step as needed. The grid layout theme includes all fields listed in the right pane of the *Layouts* page.
  - **c** To remove a field in the layout theme, double-click a field listed in the right pane to move it to the left pane. Repeat this step as needed.
- 11 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.
- **12** Click **3** Save to save changes.
- **13** To apply the new layout theme to the data entry grid, follow these steps:
  - a Click the **Options** tab Options to open the options page (Figure 7-108).
  - **b** Click the down arrow in the field **Select Layout Theme** and select the new layout theme in the selection list.
- **14** Click **H** Apply to apply changes and return to the data entry grid.

PCS /					
	Modules Data Entry Reports / Graphs Tools Field Computer Help	Ca	athodic Protect	ion Data Manager (CPDM)	Welcome John Smith   🕑   🔀 Log
	Information Inspection Maintenance				🔅 Options 🖌 Customi
	Test Point Inspection				🖪 Apply   🚳 Cance
	🗈 Based On				
	Selected ROWs Route Schedule				
	🔅 View				💿 🔠 Grid 🔘 🚨 Form 🔍 👫 Grid And For
	Select Layout Theme 🕏 My TP Inspection Grid Layout_1	-	Select Sort Theme	[PCS] ROW Code and Milepost	*
	Select Form Theme	-	Sort Dates	Oldest First O Newest First	
	Options				
	Apply other filters to the most recent inspection found within report timefrarr     The most recent inspection after the filter criteria has been met     The most recent inspection after the filter criteria has been met     The most recent inspection after the filter criteria has been met				New 'And' Group     O     New 'Or' Group
	[@]				0
	Active Facilities Only Inactive Facilities and Facilities on Inactive ROWs				
	Relative Milepost is between	ß	and	<i>9</i>	,
	Inspection Date is between -		ind	*	
	Survey is equal to				
	Periodic Survey is equal to 🔹				
	Periodic Survey Year is equal to	*			
	Technician is equal to				
	Periodic Survey Year is equal to	*			

Figure 7-108. Options

### Adding a Sort Theme

A sort theme determines how PCS Axis sorts records in the data entry grid. Adding a sort theme allows you to select which field(s) to sort records by and if records sort alphanumerically in ascending or descending order.

To add a sort theme, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-109).
 Click Save to close the window.

Select ROWs	Clear 🕤 Add 🗙 Delete 🖉 Rename
○ Find Only ○ Find and Select ◎ Clear Selections, Find and	
Find ROW Code    Enter Search Text	× 0% Find
Company Name     DISTRIBUTION     DISTRIBUTION     DISTRIBUTION     CLOSE INTERVAL     CLOSE INTERVAL     CLOSE INTERVAL ; ROW containing CI     MORE CLOSE INTERVAL 2     DIATA     DIATA     DIATA     COMPRESSOR STATIONS     S-0001 ; Compressor Station 1     S-0002 ; Compressor Station 2     GATHERING SYSTEMS     DIATA     TRANSMISSION SYSTEMS	: dota
-	💾 Save   🚳 Cancel

Figure 7-109. Select ROWs

- 2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data** to open the *Edit CPDM Data* window.
- Open the data entry grid that you want to add a new grid sorting theme. For example, click the Inspection tab Inspection and then the Test Point button Test Point to display the Test Point Inspection grid.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 Click the **Customize** tab *F* **Customize** then the **Sorts** button **Sorts** to open the *Sorts* page (Figure 7-110).

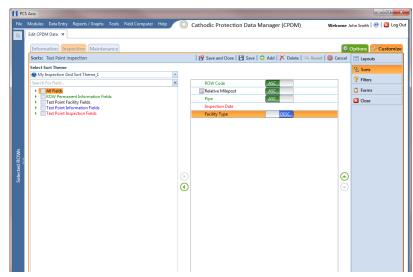


Figure 7-110. Sorts

6 Click the 🛟 Add button to open the New Sort Theme dialog box (Figure 7-111).

🚹 New Sort Theme	<b>—</b> ×
Enter Theme Name:	
8	
Public 🗹 Copy Content	
Copy Fields From Theme:	
[PCS] ROW Code and Milepost	*
Fields in the Selected Theme:	
ROW Code	
Relative Milepost	
Pipe Effective Date	
Enective Date	
	🛷 OK   🚳 Cancel

Figure 7-111. New Sort Theme

- 7 Type a name for the layout theme in the field **Enter Theme Name** (required).
- 8 If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

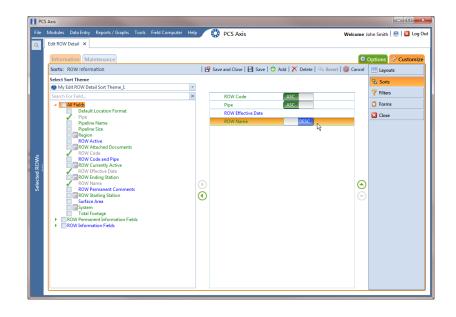
**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

**9** If you want to copy fields from an existing layout theme, click the **Copy Content** check box to place a check mark inside the check box. Then click the down arrow in the field **Copy Fields From Theme** and select a theme in the selection list.

If you do not want to copy fields from an existing layout theme, remove the check mark inside the *Copy Content* check box by clicking the check box.

**10** Click **V OK** to save changes and return to the *Sorts* page.

- **11** Complete the following steps to add and remove fields in the new sorting theme as needed:
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ All Fields (Figure 7-112).



#### Figure 7-112. Sorts Theme: All Fields

- Double-click a field listed in the left pane to move it to the right pane. (Clicking the top arrow button also moves the selected field.) Repeat this step as needed. The sorting theme includes all fields listed in the right pane.
- If you want to remove a field in the sorting theme, double-click a field listed in the right pane to move it to the left pane. (Clicking the bottom arrow button
   also moves the selected field.) Repeat this step as needed.
- 12 Select a sorting method for each field listed in the right pane. To sort grid records in ascending order, click the toggle button to select ASC ASC. To sort in descending order, click the toggle button to select DESC DESC.
- 13 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up < or down < button.</li>

- 14 Click 💾 Save and Close to save changes and return to the data entry grid.
- **15** To apply the new sorting theme to the data entry grid, follow these steps:
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click the down arrow in the field **Select Sort Theme** and select the new sorting theme in the selection list (Figure 7-113).
- 16 Click 💾 Apply to apply changes and return to the data entry grid.

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_	Modules Data Entry Reports / Graphs Tools Field Computer Help 🖉 Cathodic Protection Data Manager (CPDM) 🦉 🛛 Welcome John Smith   🖲 🖓 Log Out
Q E	Edit CPDM Data ×
	Information Inspection Maintenance
	Test Point Inspection Apply   🕲 Cancel
	달 Based On
	© Selected ROWs
	© Schedule
	🔞 View 🖉 🔞 🖬 Grid 🔿 🧯 Grid And Form
	Select Sayout Theme 🕏 My TP Inspection Grid Layout_1 🔹 Select Sort Theme 💿 My TP Inspection Grid Sort Theme 1
	Select form Theme
	③ Options
	Only include facilities with inspections during the reporting time period
ŝ	Filter Options:      All inspections that meet the filter criteria
20 ii	© Apply other filters to the most recent inspection found within report timeframe
Selected ROWs 	The most recent inspection after the filter criteria has been met
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	Inspection Date is between
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	Periodic Survey is equal to
	Periodic Survey Year is equal to
	Technician is equal to
l	

Figure 7-113. Apply Sort Theme

#### Adding an AND Filter Group

An AND filter group is a named set of one or more filters that affect the data output in a data entry grid in *Data Entry*. Adding an AND filter group produces a subset of records that meet *all* filter conditions. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an AND filter group, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-114).
 Click Save to close the window.

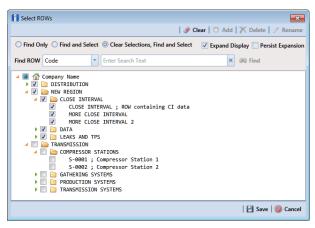


Figure 7-114. Select ROWs

- 2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data >** to open the *Edit CPDM Data* window.
- **3** Select the data grid you want to filter data. For example, click the **Inspection Inspection** tab.
- 4 Click the **Customize** tab **Customize**, then the **Filters** button **Filters** to open the *Filters* page.
- 5 Click () New 'And' Group to open a filter properties group box (Figure 7-115).

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Filters: Test Point Inspection 🛛 😫 Save and Close 🛛 🖽 Save 🗠 Revert 🛛 🎯 Can	el 📰 Layouts
🛈 New 'And' Group 🔍 New 'Or' Gr	oup 🛚 Sorts
Filter Group Caption	Filters
	C Forms
P Inactive Facilities and Facilities on Inactive ROWs	🛛 Close
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Inspection Date Is between [ ] and [ ]	1
✓ Survey Is equal to [ ]	1
Periodic Survey Is equal to [ ]	1
Periodic Survey Year Is equal to [ ]	1
Technician Is equal to [ ]	1
	2
My AND Filter Group_1	< ]
Facility Delinquent Date Is between '10/1/2013' and '12/10/2013'	
🗒 🔤 🔲 Filter Is Always On 🗙	
Improvide the second	
Enter Custom Filter Caption	
	<u> </u>

Figure 7-115. Filters

- 6 Type a name for the filter group in the field **Filter Group Caption**.
- **7** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- 8 If the AND filter group includes a date filter, such as *Facility Delinquent Date Is Between* shown in Figure 7-115, set a date range using a calendar or dynamic dates in the following manner:
  - To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - To set a date range using dynamic start and end dates, click the button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **9** If you want the filter to remain on for all sessions when working with the data entry grid, click the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- **10** Type a name for the filter in the field **Enter Custom Filter Caption**.
- **11** If you want to set up additional filter criteria for the filter group:
  - a Click 🛟 Add to open another filter properties group box.
  - b Type a name for the filter in the field Enter Custom Filter Caption. Repeat
     step 7 through step 10 to set up filter criteria. Then click the close button is to close the filter group.
- **12** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{\mathbb{I}}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

13 Click 💾 Save.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

**14** To apply one or more filters to the data entry grid (Figure 7-116):

CS Axis						
	Reports / Graphs Tools Fie	eld Computer Help 🚺 🔘	Cathodic Protectio	n Data Manager (CPDM)	Welcome John Smith 🛛 🔨	🔀 Log
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Test Point Inspectio	n				Apply 🛙	Cano
🗈 Based On						
Selected ROWs Route						
Schedule						
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	e 🐨 My TP Inspection Grid La	wourt 1	Select Sort Theme	My TP Inspection Grid Sort Theme		And P
Select Layout Them Select Form Theme		you_r	Select Sort Theme		e	
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Figure 7-116. Options

- a Click the **Options** tab **Options** to open the options page.
- **b** Click the check box for each filter you want to apply. Then click **H Apply** to save changes and return to the data entry grid.

### Adding an OR Filter Group

An OR filter group is a named set of one or more filters that affect the data output in a data entry grid in *Data Entry*. Adding an OR filter group produces a subset of records that meet *any* filter condition. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an OR filter group, follow these steps:

 Select one or more pipeline segments in the Select ROWs window (Figure 7-117). Click Save to close the window.

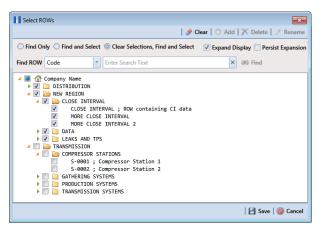


Figure 7-117. Select ROWs

- 2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data** to open the *Edit CPDM Data* window.
- **3** Select the data grid you want to filter data. For example, click the **Inspection Inspection** tab.
- 4 Click the **Customize** tab **Customize**, then the **Filters** button **Filters** to open the *Filters* page.
- 5 Click (1) New 'Or' Group to open a filter properties group box (Figure 7-118).

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	O New 'And' Group ON New 'Or' Group	Norts
	Filter Group Caption	T Filters
	Active Facilities Only	C Forms
		Close
	🖋 Relative Milepost Is between [ ] and [ ]	
8	P Inspection Date Is between [ ] and [ ]	
	Survey Is equal to [ ]	
	Periodic Survey Is equal to [ ]	
	Periodic Survey Year Is equal to [ ]	
	P Technician Is equal to [ ]	
	Include records that match any of these conditions	
	Facility Delinquent Date Is between [ ] and [ ]	
8	🔚 Filter Is Always On 🗙	
	Example and Exampl	
	Enter Custom Filter Caption	

Figure 7-118. Filters

- **6** Type a name for the filter group in the field **Include records that match any of these conditions**.
- **7** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- 8 If the OR filter group includes a date filter, such as *Facility Delinquent Date Is Between* shown in Figure 7-118 (page 328), set a date range using a calendar or dynamic dates in the following manner:
  - To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - To set a date range using dynamic start and end dates, click the button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **9** If you want the filter to remain on for all sessions when working with the selected route, click the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- **10** Type a name for the filter in the field **Enter Custom Filter Caption**.
- **11** If you want to set up additional filter criteria for the filter group:
  - a Click 🛟 Add to open another filter properties group box.
  - **b** Repeat **step 6** through **step 10** to set up the filter group. Then click the close button **x** to close the filter group.
- **12** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

13 Click 💾 Save.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **14** To apply one or more filters to the data entry grid (Figure 7-119):
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click the check box for each filter you want to apply. Then click **Apply** to save changes and return to the data entry grid.

Data Entry Reports / Graphs Tools Field M Data X mation Finspection Maintenance int Inspection Ret Inspection Ret BOWs uster hedule	l Computer Help 🔘 (	Cathodic Protection Data M	anager (CPDM)	Wekcome John Smith   🤅 Options 🖌   🎦 Apply	Customi
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Figure 7-119. Options

#### Editing and Arranging Filters and Filter Groups

PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group. Filter groups are processed similarly. Information in this section explains how to edit filter property settings and how to arrange filters and filter groups.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-120).
 Click Save to close the window.

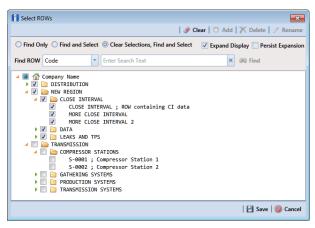


Figure 7-120. Select ROWs

- 2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit CPDM Data** to open the *Edit CPDM Data* window.
- **3** Select the data grid you want to filter data. For example, click the **Inspection Inspection** tab.
- 4 Click the **Customize** tab **Customize**, then the **Filters** button **Filters** to open the *Filters* page (Figure 7-121).

Filters: Test Point Inspection	Image: Image
Active Facilities Only     Active Facilities on Inactive ROWs     Relative Milepost Is between [ ] and [ ]	OIX Filters
Active Facilities Only     Active Facilities on Inactive ROWs     Relative Milepost Is between [ ] and [ ]	O I X
Inactive Facilities and Facilities on Inactive ROWs      Relative Milepost is between [ ] and [ ]	
i:	Close
Inspection Date Is between [ ] and [ ]	
Survey Is equal to [ ]	
Periodic Survey Is equal to [ ]	
Periodic Survey Year Is equal to [ ]	
Periodic Survey Year Is equal to [ ]  Technician Is equal to [ ]  Multi-Contem OR Editor Games 1	
My Custom OR Filter Group_1	♦   X
Facility Next Due Date Is equal to '12/10/2013'	
Facility Delinquent Date Is between '11/1/2013' and '12/10/2013'	
My Custom AND Filter Group_1	
AC P/S (Volts) is expected, but not recorded	
I :: // AC P/S (Volts) is expected, but not recorded	

**5** Click the edit icon *P* to display a filter's property settings.

Figure 7-121. Filters

- 7 To rename a filter, type a description in the filter's name field.
- **8** To change filter criteria, use filter selection fields to select a PCS Axis field, operator, and one or more filter conditions.
- 9 To enable a filter for all sessions of the data entry grid, click the check box Filter is Always On to place a check mark inside the check box. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- 10 Click the 🔀 close button to close the filter's property settings group box.
- **11** To move a filter to a different position in a filter group, or to move a filter group to a different position, follow these steps:
  - **a** Point the mouse at the handle  $\parallel$  of a filter or filter group to display a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

#### 12 Click 💾 Save.

- **13** To apply filter changes to the data entry grid:
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click **H Apply** to apply filter changes and return to the data entry grid.

## Working with Records

The information in this section explains how to work with various types of records in a data entry grid. Topics include those in the following list:

- Activating Facility Inspection Fields for Data Entry
- Working with Multiple Test Point Potentials (page 335)
- Attaching a Document to a Grid Record (page 340)
- Working with the Target Structure P/S Field (page 354)
- Recording Facility Current Values (page 358)
- Linking Rectifiers to ROWs (page 365)
- Working with Rectifier Anodes (page 367)
- Working with Rectifier Negatives (page 373)

### Activating Facility Inspection Fields for Data Entry

Inspection fields with *Activate* in the field description must first be added and enabled in the facility *Information* grid to allow data entry of inspection readings in the facility *Inspection* grid.

To activate facility inspection fields for data entry, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-122). Select pipeline segments with facilities you want to work with, then click Save to close the window.

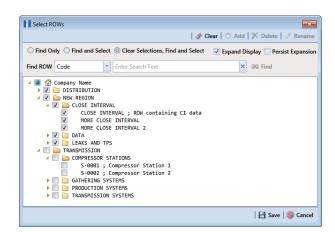


Figure 7-122. Select ROWs

- 2 Open the *Edit < module > Data* window. For example, click **Data Entry > Edit** CPDM **Data** to open the *Edit CPDM Data* window.
- 3 Open the *Information* grid for a facility type. For example, click the **Information** tab **Information** and then a facility type button, such as **Test Point Test Point** (Figure 7-123).

Info	rmation Inspe	ection Maintenar	ice 📑 S	elected ROWs 🔠 [PCS] Test P	oint Information 🛛 🛚 🛚 🛚	CS] ROW Code and Mil	epost	🍄 Options 🖌 🕹 Cu	ustor
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	ROW Code and	Pipe Milepost	Location Description	Test Point Protection Criteria	Activate Structure P/S	Activate Casing P/S	Activate Foreign P/S	Activate Insulator P/	/5 Fa
х	T-1401	0.000	Bethel Station	.85 On	2				
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	T-1401	1.500	Williford E #1	.85 On			1		
	T-1401	1.627	FM 321	.85 On	$\checkmark$	1			
	T-1401	1.750	Park Rd. 64	.85 On		V			
	T-1401	2.000	Texas 84	.85 On	$\checkmark$	V			
	T-1401	2.250	County Rd.	.85 On	V				
	T-1401	2.500	Fryer B	.85 On	V		V		
	T-1401	3.000	Whitaker #1	.85 On			V		
	T-1401	3.218	County Road	.85 On					
	T-1401	3.250	Old Meter Riser	.85 On					
Fa	cility Level Overri Selected	de Scheduling Type Na	me Last Inspection Da		Delingue	nt Date Due Dat	e Calculation Method	Time Between Surve	-
	/ Yes	My Scheduling Type		11/2014 [Del 7/7/2006], 2/2				3 Months	
	Yes	My Scheduling Type	-	7/2014 [Del 8/16/2014], 1/2			ey.	6 Months	-
			.2						
	Yes	Test Point		1/2014 [Del 4/1/2014], 1/20	15, 1/2016 4/1/2014	Targets		12 Months	
				1/2017[0217],1/2017],1/20	1,1,2010	, ingen		111101010	

Figure 7-123. Information Grid - Test Point Tab

- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 Click the check box of an *Activate* inspection field for a facility in the grid to place a check mark in the check box. For example, click the check box **Activate** Structure P/S (Volts) for a facility in the grid.
- 6 Click **Yes** to apply the change when a warning message displays to notify you of a change to the facility's permanent history record.

The inspection field is now available for data entry in the *Inspection* grid for the selected facility. If the inspection field is not present in the Inspection grid, refer to *Adding a Data Grid Layout Theme* (page 317) for information about adding fields in a grid.

**NOTE:** You can also activate an inspection field in the *Inspection* grid by rightclicking the field and selecting *Activate Item* in the shortcut menu that opens.

### Working with Multiple Test Point Potentials

Use the CPDM *Test Point Detail Information* and *Test Point Detail Inspection* mini-grids to manage multiple potential measurements for test point subfacilities linked to a test point facility. These mini-grids function in a similar manner as the rectifier mini-grids when linking rectifier anodes and negatives.

The *Test Point Detail Inspection* mini-grid allows you to select which potential measurement to use for compliance reporting. After selecting a potential measurement for compliance reporting, PCS Axis automatically copies it to the associated test point facility in the *Inspection* grid.

**NOTE:** The Test Point Detail mini-grids become available for use after enabling the system option *Show Detail Inspection Entry Grid*. When using the optional *Telluric Compensation* feature, the mini-grids display by default and cannot be disabled.

#### Linking Multiple Subfacilities to a Parent Test Point Facility

The procedure in this section explains how to link multiple subfacilities to a parent test point facility and then select one of the subfacility potential measurements (survey readings) for compliance reporting.

The process begins with adding and linking new subfacility records to a parent test point facility in the *Test Point Detail Information* mini-grid. After adding these records, they are then available for use in the *Test Point Detail Inspection* mini-grid.

Complete the following steps:

Select one or more pipeline segments in the *Select ROWs* window (Figure 7-124).
 Select pipeline segments with test point facilities you want to work with, then click
 Save to close the window.

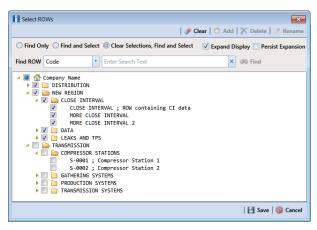


Figure 7-124. Select ROWs

- 2 Click Data Entry > Edit CPDM Data to open the Edit CPDM Data window.
- **3** Click **Test Point Test Point** and then the **Information** tab **Information** to open the *Information* grid.
- 4 If the *Test Point Detail Information* mini-grid is not visible, double-click the **Test Point Det...** button **Test Point Det...** at the bottom of the window to open the mini-grid (Figure 7-125).

	Test Point Re	ctifier	Foreign Bond Galvar	nic Anode Tank				<b>1</b>	Sas
815	Find						🗘 Add   🗡 🕻	Delete   😏 Refresh	1
	ROW Code and Pipe	Milepost	Location Description	Activate Structure P/S	Activate Structure IRF	Activate Casing P/S	Activate Casing IRF	Activate Foreign P/	/s
•	LG123-A	0+00	LG123A-00	1	<b>V</b>	<b>V</b>	<b>V</b>	1	
	LG123-A	0+10	LG123A-10	<b>V</b>	<b>V</b>	1	<b>V</b>	7	
	LG123-A	0+20	LG123A-20	1	1	1	1	$\checkmark$	
	LG123-A	0+30	LG123A-30	V	<b>V</b>	$\checkmark$	$\checkmark$	$\checkmark$	
	LG123-A	0+40	LG123A-40	<b>V</b>	<b>V</b>	1	<b>V</b>	$\checkmark$	
	LG123-A	0+50	LG123A-50	V	<b>V</b>	1	1	$\checkmark$	
	LG123-A		LG123A-60	V	V	1	<b>V</b>	1	
	0123-7	0+60	Lu123A-60	V	V			V	
4		0+60	101234-00	×				Row C	.0
	est Point Detail Informa		101234-00	(*)					
								Row C	
	est Point Detail Informa	ation						Row C	
	est Point Detail Informa	ation						Row C	
	est Point Detail Informa	ation						Row	
	est Point Detail Informa	ation						Row (	

Figure 7-125. Test Point Detail Information

- **5** To add and link new subfacility records to a parent test point facility in the *Information* grid, follow these steps:
  - **a** Select a test point facility in the *Information* grid.
  - **b** Click **C** Add in the Test Point Detail Information mini-grid.

**c** In the pop-up *Add Record* dialog box (Figure 7-126), type a unique name for the new subfacility in the **Name** field. This field supports up to 100 alphanumeric characters. Fields requiring information include a 😢 icon. You must enter information in the required fields before the record will be added.

Add Reco	ord	<b>—</b>
Name	8	
PCS Field Na	ne 🔀	*
		🗄 Save 🔯 Cancel

Figure 7-126. Add Record Dialog Box

**IMPORTANT:** To prevent adding duplicate subfacility records in the system, it is important to enter a unique name in the *Name* field for each subfacility record. Do not use the default name in the *Name* field or leave it empty (blank).

- **d** Click the field **PCS Field Name** and select the name of a PCS field. Select a PCS field name that matches the type of potential measurement associated with the new subfacility, such as *Structure P/S*.
- e Click 💾 Save to add the record and close the window.
- **f** Repeat **step 5 a** through **e** for each new subfacility record you want to add and link to the currently selected test point facility record.

**NOTE:** The *Currently Active* check box indicates when a subfacility is active or inactive. A check mark inside the check box indicates an active subfacility and can also be included in *Prompts* sent to the *Allegro Field Computer*. When the check box is empty, this indicates an inactive subfacility, such as a damaged subfacility or one that has been replaced.

**6** Complete the following steps to add potential measurements (survey readings) for subfacilities in the *Test Point Detail Inspection* mini-grid, and then select one of these for compliance reporting:

- a Click the Inspection tab Inspection to open the Inspection grid.
- **b** If the *Test Point Detail Inspection* mini-grid is not visible, double-click the **Test Point Det...** button **Test Point Det...** at the bottom of the window to open the mini-grid.
- **c** Select a test point facility in the *Inspection* grid that includes subfacilities you want to add potential measurements (Figure 7-127).

	Test Point R	ectifier Fe	ce 🛃 Sele	Ivanic Anode	Tank					Custon Based
	Find						l 🕄 Buil	d Survey   🔿 Add	🗙 Delete   🧐 Refre	
	ROW Code and Pipe	e Milepost	Inspection Date	Survey	Structu	re P/S (Volts) S	Structure IRF (Volts)	Casing P/S (Volts)	Casing IRF (Volts)	Foreign
۰,	LG123-A	0+00	11/22/2013	2014 Annual Surv		-1.198		2 C C C	0	roreign
	LG123-A	0+10	11/22/2013	2014 Annual Surv	ey	-1.213	-1.074	-0.99	-	
	LG123-A	0+20	11/22/2013	2014 Annual Surv	ey	-1.179	-1.021			
	LG123-A	0+30	11/22/2013	2014 Annual Surv	ey	-1.160	-1.086			
	LG123-A	0+40	11/22/2013	2014 Annual Surv	ey	-1.226	-1.106			
	LG123-A	0+50	11/22/2013	2014 Annual Surv	ey	-1.218	-1.086			
	LG123-A	0+60	11/22/2013	2014 Annual Surv	ey	-1.183	-1.000			
									III Ro	w Count:
	Test Point Detail Inspec	tion							_	<b>0</b>   X
•		PCS Field Name	Compliance	On	Off	On Date and Tin	ne Off Date i	and Time	Latitude L	ongituc
				-1.226	-1.106	11/25/2014 3:00	:00 PM 11/25/20	14 3:00:00 PM	30.43367500	<u>_</u>
	TestLead 1	Structure P/S	0						30,43367600	
	TestLead 1		0	-1.098	-1.023	11/25/2014 3:00	:00 PM 11/25/20	14 3:00:00 PM	30.43307000	
	TestLead 1	Structure P/S		-1.098		11/25/2014 3:00 11/25/2014 3:00		14 3:00:00 PM	30.43367600	

Figure 7-127. Test Point Detail Inspection Mini-Grid

- **d** If potential measurements have not previously been added in the mini-grid, click **•** Add to enable the mini-grid for data entry.
- e Select a subfacility in the mini-grid. Then add potential measurements and other related survey data in appropriate mini-grid fields. Repeat this step as needed for other linked subfacilities in the mini-grid.
- **f** To select a potential measurement to use for compliance reporting, click the **Compliance** option button in the mini-grid associated with the subfacility record.
- **g** Based on your PCS Axis license, the *Compliance* field may be named *Selected Reading* instead.
- **h** Click **G Refresh** to copy the selected potential measurement to the linked test point facility in the *Inspection* grid.

i When a value for a dependent field has been updated in a data entry grid, a notification icon displays in the derived field indicating the value has changed and the data entry grid should be refreshed. Clicking the Refresh button updates all derived values and removes the notification icon. See Working with Derived Fields (page 226) for more information.

### Attaching a Document to a Grid Record

When you want to attach a document to a record in the grid, use the *Attached Document* field to link or embed a file or webpage address to a ROW, facility, inspection, or maintenance record. Supported file types include image, video, HTML, XML, music, and text files (such as Microsoft Word, WordPad, Notepad, or PowerPoint files).

As an example, you can attach an image of a survey site or damaged facility; a document describing your company's safety procedures; or a document identifying a manufacturer's specification for a piece of equipment.

Linking a document identifies the file location on a local computer, company network, FTP site, or webpage on the Internet. Linking documents stored on a local computer are accessible only from that computer. Embedding a document stores a copy of the file in the PCS Axis database.

**NOTE:** Storing copies of documents in the PCS Axis database increases the size of the database.

If the file type of an attached document is associated with a default software program on the local computer, you can preview the file in the *Preview Attached Documents* window. Additionally, clicking *Open* opens the attached document for editing or viewing purposes.

Editing an embedded document applies changes only to the copy stored in the PCS Axis database; changes do not apply to the source file stored outside of PCS Axis. Likewise, editing a source file applies changes only to the source file, not the copy stored in PCS Axis.

For more information, continue with one of the following topics:

- Adding an Attached Document Field in the Grid (page 341)
- Attaching a Document to a ROW, Facility, Inspection, or Maintenance Record (page 345)
- Viewing an Attached Document (page 351)

**NOTE:** For information about how to attach a document to a pipeline record, see *Working with Pipeline Records* (page 139).

#### Adding an Attached Document Field in the Grid

Each of the following fields allow you to attach a document to a record in the grid. If any of these fields are not present in the grid, use the procedure in this section to add one or more fields as needed.

- *ROW Attached Documents*: add this field in the *Information*, *Inspection*, or *Maintenance* grid if you plan to attach a document to a ROW record.
- *Facility Attached Documents*: add this field in the *Information*, *Inspection*, or *Maintenance* grid if you plan to attach a document to a facility record.
- *Inspection Record Attached Documents*: add this field in the *Inspection* grid if you plan to attach a document to an inspection record.
- *Maintenance Record Attached Documents*: add this field in the Maintenance grid if you plan to attach a document to a maintenance record.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-128).
 Click Save to close the window.

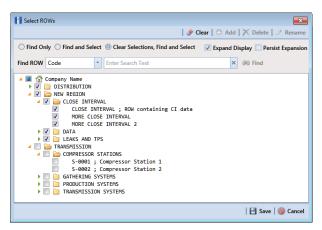


Figure 7-128. Select ROWs

- 2 Click **Data Entry** > **Edit** <module> **Data**, such as *Edit CPDM Data*. If present, click a facility type button, such as *Test Point* in CPDM or *Coupons* in ICM.
- **3** If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- **4** Based on the attached document field you want to add, complete one of the following steps to open the grid:
  - **a** To add the attached document fields *Facility Attached Documents* and/or *ROW Attached Documents* in the Information, Inspection, or Maintenance grid, click the **Information**, **Inspection**, or **Maintenance** tab to open the grid.

- **b** To add the field *Inspection Record Attached Documents* in the Inspection grid, click the **Inspection** tab **Inspection** to open the grid.
- **c** To add the field *Maintenance Record Attached Documents* in the Maintenance grid, click the **Maintenance** tab Maintenance to open the grid.
- **5** Click the **Customize** tab **Customize** to view the *Layouts* page.
- 6 Click the down arrow in **Select Layout Theme** and select a layout theme in the selection list.
- 7 Type **attached** in the search field of the left pane to display a list of attached document fields available for selection.
- 8 To add the fields *Facility Attached Documents* and/or *ROW Attached Documents* in the Information, Inspection, or Maintenance grid, follow these steps:
  - a Click the check box for the fields **Facility Attached Documents** and/or **ROW Attached Documents** in the left pane of the window (Figure 7-129).
  - **b** Click the top arrow button () to move selected fields to the right pane. The grid includes all fields listed in the right pane. Click **Save**.

**NOTE:** Double-clicking a field in the left pane also moves it to the right pane. If you want to remove a field in the right pane, double-click the field to move it back to the left pane. Fields with a lock icon **are required and cannot be removed**.

PCS A	Axis				
	Nodules Data Entry Reports / Graphs Tools	Field Computer Help	O Cathodic Protection Data Manager (CP	Welcome Jo	ohn Smith   🕑   🔀 Log Out
			Cathodic Protection Data Manager (CP Save C Add X Detel → Revert C New Baseline MReport Location Description Activate Structure P/S Activate Casing P/S Activate Casing P/S Activate Sincure P/S Activate Casing P/S Activate Sincure Sincur	<b>\$</b> (	Image: Control of the second secon
Selected		•			

Figure 7-129. Layouts

- **9** To add the field *Inspection Record Attached Documents* in the Inspection grid, complete the following steps:
  - **a** Click the check box for the field **Inspection Record Attached Document** in the left pane of the window (Figure 7-130).
  - **b** Click the top arrow button () to move the field to the right pane. The grid includes all fields listed in the right pane. Click **Save**.

**NOTE:** Double-clicking a field in the left pane also moves it to the right pane. If you want to remove a field in the right pane, double-click the field to move it back to the left pane. Fields with a lock icon are required and cannot be removed.

PCS A	Axis	
	Modules Data Entry Reports / Graphs Tools Field Computer Help 🕜 Cathodic Protection Data Manager (CP Weke Edit CPDM Data ×	ome John Smith   🕑   🔀 Log Out
	Information         Inspection         Maintenance           Layoutts: test Point Inspection         If Save and Oose         If Save I < Add X	♥ Options
Selected ROWs	Clear Point Information Fields     Technician     Impection Record Attached Documents     Record Attached Documents     Facility ID     Record Attached Documents	⊘ ⊙

Figure 7-130. Layouts

- **10** To add the field *Maintenance Record Attached Documents* in the Maintenance grid, complete the following steps:
  - **a** Click the check box for the field **Maintenance Record Attached Document** in the left pane of the window (Figure 7-131).
  - **b** Click the top arrow button **b** to move the field to the right pane. The grid includes all fields listed in the right pane. Click **Save**.

**NOTE:** Double-clicking a field in the left pane also moves it to the right pane. If you want to remove a field in the right pane, double-click the field to move it back to the left pane. Fields with a lock icon are required and cannot be removed.

PCS	S Axis		
File	Modules Data Entry Reports / Graphs Tools Field Computer He	Cathodic Protection Data Manager (CP	Welcome John Smith   🕑   🔀 Log Out
۹.	Edit CPDM Data 🗙		
	Information Inspection Maintenance		🌣 Options 🥜 Customize
	Layouts: Test Point Maintenance	Close   🗎 Save   🗢 Add   💢 Delete   🖘 Revert   🌣 New Baseline	Cancel Eayouts
	Select Layout Theme		🛚 Sorts
Search Field	PCS] Test Point Maintenance     attached     ×	ROW Code and Pipe	🍸 Filters
	All Fields	Milepost	📋 Forms
	Im Facility Attached Documents     Im Maintenance Record Attached Documents	Effective Date     Repair Found Date	🔀 Close
	Im ROW Attached Documents     ROW Permanent Information Fields	Test Point Repair Code	
	Image: Imag	Repair Initiated Date Repair Corrected Date	
	Facility Attached Documents      Section 1 Information Fields	Reference Number	
	Inst Point Maintenance Fields     Maintenance Record Attached Documents	Repair Priority Repair Remarks	
Ws.			
24 E			
Selected ROWs		$\odot$	
<del>گ</del>			$\bigcirc$

Figure 7-131. Layouts

- **11** To apply the layout theme in the grid, follow these steps:
  - a Click the **Options** tab Options to open the options page.
  - **b** Click the down arrow in **Select Layout Theme** and select the layout theme that includes attached document fields.
  - c Click 💾 Apply to apply changes and return to the grid.

# Attaching a Document to a ROW, Facility, Inspection, or Maintenance Record

Information in this section explains how to attach a document to a record in the grid using the options *Link Document* and *Embedded Document*.

**Note:** If the option *Disable Link Attachments* has been enabled in system Options by your company's system administrator, the option *Link Document* is unavailable for selection. Use the option *Embedded Document* instead when attaching a document to a record. This places a copy of the document in the PCS Axis database. See Table 3-2 (page 49) for more information.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-132).
 Click Save to close the window.

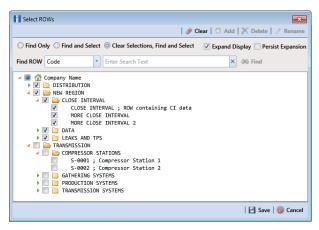


Figure 7-132. Select ROWs

- 2 Click **Data Entry** > **Edit** <module> **Data**, such as *Edit CPDM Data*. If present, click a facility type button, such as *Test Point* in CPDM or *Coupons* in ICM.
- **3** Based on the type of record you want to attach a document, complete one of the following steps:
  - **a** To attach a document to a ROW or facility record, click the **Information** tab **Information** to open the *Information* grid.
  - **b** To attach a document to an inspection record, click the **Inspection** tab **Inspection** to open the *Inspection* grid.
  - **c** To attach a document to a maintenance record, click the **Maintenance** tab Maintenance to open the Maintenance grid.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 5 Click the edit icon *P* in the Attached Documents field for the grid record you plan to attach a document (Figure 7-133).

Q.	Edit CP	DM Data ×				Cathodic P	forcention barr	a Manager (CPDM)	Welcome John Sm	
	Info	rmation Ins	pection Mainte	enance 📄 Se	lected ROWs 📰 N	Ay Inspection Grid Lay	out Theme_1 🛚 📉	My Inspection Grid Sort Then	ne_1 Ø Option	ns 📌 Custom
	Т	est Point	Rectifier	Foreign Bond	Galvanic Anode	Tank				🔛 Based
	55	Find						🕃 Build Survey   😋 A	dd   🗡 Delete   😏	Refresh 🛛 😣 P
		ROW Code and Pipe	Milepost	Effective Date	Inspection Date	Inspection Record Attached Document	Survey	Structure P/S (Volts)	Casing P/S (Volts)	Foreign P/S (Vol
	•	T-1401	0.000		3/22/2006	2	2006 Annual Sur	vey -1.141		
		T-1401	0.001		3/22/2006	2	2006 Annual Sur			
		T-1401	1.000		3/22/2006	/ I				-0.
		T-1401	1.500		3/22/2006	1	2006 Annual Sur	vey -0.963		-12
		T-1401	1.627		3/22/2006	ø 8	2006 Annual Sur	vey -0.922	-0.298	
		T-1401	1.750		3/22/2006	1	2006 Annual Sur	vey -0.895	-0.412	
š		T-1401	2.000		3/22/2006	1	2006 Annual Sur	vey	-0.635	
8		T-1401	2.250		3/22/2006	ø (	2006 Annual Sur	vey -1.091		
Selected ROWs		T-1401	2.500		3/22/2006	ø 8	2006 Annual Sur	vey -0.996		-0.7
Sele		T-1401	3.000		3/22/2006	ø 8	2006 Annual Sur	vey -0.717		-0.
		T-1401	3.218		3/22/2006	ø 8	2006 Annual Sur	vey -1.492		
		T-1401	3.250		3/22/2006	ø 8	2006 Annual Sur	vey -1.118		
		T-1401	3.500		3/22/2006	ø 8	2006 Annual Sur	vey -0.694		-0.
		T-1401	4.000		3/22/2006	1	2006 Annual Sur	vey -0.686		-0.1
		T-1401	5.000		3/22/2006	1	2006 Annual Sur	vey -1.116		-0.
		T-1401	5.275		3/22/2006	1	2006 Annual Sur	vey -1.451		-13
		T-1401	6.000		3/22/2006	1	2006 Annual Sur	vey -1.024		-0.2
		T-1401	7.000		3/22/2006	1	2006 Annual Sur	vey -1.094		-0.
		T-1401	8.000		3/22/2006	1	2006 Annual Sur	vey -0.831		-0.1

Figure 7-133. Attached Document Field

6 When the *Maintain Attached Documents* dialog box opens, click **•** Attach and then select the option Link Document or Embedded Document.

Select *Link Document* if you plan to link to a document on a local computer or company network, or want to add a link to a web page on the Internet.

Select *Embedded Document* if you want to store a copy of an attached document in the PCS Axis database.

**NOTE:** Storing copies of attached documents in the database increases the size of the database.

7 If you selected *Link Document* in **step 6** and want to link to a file on a local computer or company network(Figure 7-134), follow these steps:

Link Document	Document	
Embedded Document	C:\Users\John.Smith\	Desktop\My Attached Document_4.pdf
Description		
My linked document_4.		
Document	Document Type	
My Attached Document_1.pdf	Link	
My Attached Document_2.pdf	Link	
	Link	
My Attached Document_2.pdf		

Figure 7-134. Maintain Attached Documents

- **a** Click the ellipsis button ... in the **Document** field to open the *Link File* dialog box.
- **b** Navigate to the file and select it. Click **Open** to link to the file and close the dialog box.
- **c** Type a description for the linked file in the **Description** field. When a description is not provided, PCS Axis uses the filename of the linked document as the description.
- d Click 💾 Save, then click OK when the following message displays:

Linked Document won't be replicated. Do you want to continue?

**NOTE:** Linked documents are not copied and stored in the PCS Axis database as noted in the previous message. To store a copy of an attached document in the database, use the *Embedded Document* option instead.

e When you finish attaching documents, click the close button to close the window and return to the grid.

**NOTE:** A list of attached documents and whether they are linked or embedded displays in the window. Selecting an item in the list displays its location in the *Document* field.

8 If you selected *Link Document* in **step 6** and want to add a link to a web page on the Internet (Figure 7-135), follow these steps:

Maintain Attached Docu	uments		×			
🕂 Attach   🚳 Cancel		💾 Save and Close 📔 Save	📉 Delete			
Link Document	Docume	Document				
Embedded Document	http://w	ww.aiworldwide.com				
Description						
American Innovations web	osite.		-			
			`			
Document	Document Type					
My Attached Docu		ink				
My Attached Docu		ink				
My Attached Docu		ink				
My linked docume	1	ink				

Figure 7-135. Maintain Attached Documents

- **a** Type an Internet address in the **Document** field. For example, type http://www.aiworldwide.com in the field.
- **b** Type a description for the link in the **Description** field. When a description is not provided, PCS Axis uses the filename of the linked document as the description.
- c Click 💾 Save, then click OK when the following message displays:

Linked Document won't be replicated. Do you want to continue?

**NOTE:** Linked documents are not copied and stored in the PCS Axis database as noted in the previous message. To store a copy of an attached document in the database, use the *Embedded Document* option instead.

**d** When you finish attaching documents, click the close button **we** to close the window and return to the grid.

**NOTE:** A list of attached documents and whether they are linked or embedded displays in the window. Selecting an item in the list displays its location in the *Document* field.

**9** If you selected *Embedded Document* in **step 6** (Figure 7-136), complete the following steps:

🕽 Attach 🛛 🚳 Cancel 🛛		💾 Save and Close   💾 Save   🗡 Delet			
Link Document	Document				
Embedded Document	My Embedded Document_2.png	•			
escription					
Document	Document Type				
My Attached Document_1.pd	lf Link				
My Attached Document_2.pd	lf Link				
My Attached Document_3.pd	lf Link				
My linked document_4.	Link				
American Innovations websit	e. Link				
My Embedded Document_1.	ong Embedded				

Figure 7-136. Maintain Attached Documents

- **a** Click the ellipsis button ... in the **Document** field to open the *Embed File* dialog box.
- **b** Navigate to the file and select it. Click **Open** to embed a copy of the file and close the dialog box.
- **c** Type a description for the embedded file in the **Description** field. If a description is not provided, PCS Axis uses the filename of the embedded file as the description.
- d Click 💾 Save, then click OK when the following message displays:

Local changes made to embedded documents won't be saved into PCS. Do you want to continue?

**NOTE:** Editing an embedded document applies changes only to the copy stored in the PCS Axis database; changes do not apply to the source file stored outside of PCS Axis. Likewise, editing a source file applies changes only to the source file, not the copy stored in PCS Axis.

**e** When you finish attaching documents, click the close button **to** close the window and return to the grid.

**NOTE:** A list of attached documents and whether they are linked or embedded displays in the window. Selecting an item in the list displays its location in the *Document* field.

#### Viewing an Attached Document

If the file type of an attached document is associated with a default software program on the local computer, you can preview the file in the *Preview Attached Documents* window. Additionally, clicking *Open* opens the attached document for editing or viewing purposes.

To view or open an attached document, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 7-137).
 Click Save to close the window.

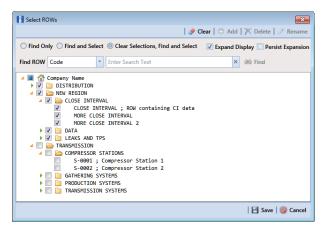


Figure 7-137. Select ROWs

2 Open the data entry grid that includes the grid record with the attached document. For example, click Data Entry > Edit CPDM Data > Test Point > Inspection to open the Test Point Inspection grid.

- **3** If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- 4 Click the preview icon on for the grid record with the attached document (Figure 7-138).

	CPDM Data ×	Keports / Graphs	Tools Field Co	mputer Help	Cathodic Pro	otection Data Ma	nager (CPDM)	Welcome John Sm	iith   😢   🛛
In	formation Ins	pection Mainte	enance 📄 Se	elected ROWs 📰 M	ly Inspection Grid Layor	rt Theme_1 🛚 🐁 My Ins	pection Grid Sort Them	e_1 Option	ns 🥜 Custo
	Test Point	Rectifier	Foreign Bond	Galvanic Anode	Tank				Base
6	• Find					18	Build Survey   🔿 A	dd   🗙 Delete   😏	
	ROW Code and Pipe	Milepost	Effective Date	Inspection Date	Inspection Record Attached Documents	Survey	Structure P/S (Volts)	Casing P/S (Volts)	Foreign P/S (
	, T-1401	0.000		3/22/2006	3 Attached 🥜 🔯	2006 Annual Survey	-1.141		
	T-1401	0.001		3/22/2006	1	Click to preview attachm	ent1.150		
	T-1401	1.000		3/22/2006	1	2006 Annual Survey	-1.173		
	T-1401	1.500		3/22/2006	1	2006 Annual Survey	-0.963		
	T-1401	1.627		3/22/2006	1 0	2006 Annual Survey	-0.922	-0.298	
	T-1401	1.750		3/22/2006	1	2006 Annual Survey	-0.895	-0.412	
	T-1401	2.000		3/22/2006	1	2006 Annual Survey		-0.635	
	T-1401	2.250		3/22/2006	1 🔍	2006 Annual Survey	-1.091		
	T-1401	2.500		3/22/2006	1	2006 Annual Survey	-0.996		
	T-1401	3.000		3/22/2006	1	2006 Annual Survey	-0.717		
	T-1401	3.218		3/22/2006	1 🔍	2006 Annual Survey	-1.492		
	T-1401	3.250		3/22/2006	<i>I</i>	2006 Annual Survey	-1.118		
	T-1401	3.500		3/22/2006	1	2006 Annual Survey	-0.694		
	T-1401	4.000		3/22/2006	1	2006 Annual Survey	-0.686		
	T-1401	5.000		3/22/2006	<i>I</i>	2006 Annual Survey	-1.116		
	T-1401	5.275		3/22/2006	1	2006 Annual Survey	-1.451		
	T-1401	6.000		3/22/2006	1	2006 Annual Survey	-1.024		
	T-1401	7.000		3/22/2006	1 Q	2006 Annual Survey	-1.094		
4	T-1401	8.000		3/22/2006	1 0	2006 Annual Survey	-0.831		

Figure 7-138. View Attached Document

**5** When the *Preview Attached Documents* window opens, select a file in the list on the left side of the window to preview the file (Figure 7-139).

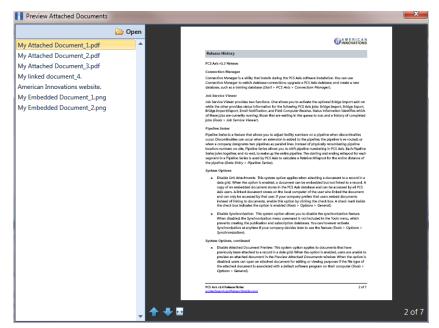


Figure 7-139. Preview Attached Documents

- 6 If the file type of the attached document is associated with a default software program on the local computer, click **Open** to open the file.
- 7 Click the close button **E** to close the *Preview Attached Documents* window.

**NOTE:** When you open and then edit an embedded document, changes apply only to the copy stored in the PCS Axis database; changes do not apply to the source file stored outside of PCS Axis. Likewise, editing the source file applies changes to the source file, not the copy stored in the PCS Axis database.

## Working with the Target Structure P/S Field

The *Target Structure P/S* field is a system-generated field available in the CPDM Test Point Inspection grid. The field is gray to indicate its contents are system-generated. *Target Structure P/S* is used by PCS Axis to calculate a target reading with a minimum pipe-to-soil (P/S) for meeting criteria. The target reading is calculated based on your selected protection criterion and information in other fields (Table 7-1, page 355).

The default setting for *Target Structure P/S* is -0.850. To change the setting, follow these steps:

1 Click the Select ROWs button *P* to open the Select ROWs window (Figure 7-140). Select one or more pipeline segments with facilities you want to work with, then click **Save** to close the window.

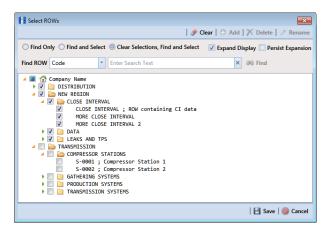


Figure 7-140. Select ROWs

- 2 Open the *Edit CPDM Data* window. Click **Data Entry** > **Edit CPDM Data**.
- **3** Open the *Test Point Information* grid. Click the **Information** tab **Information** and then the **Test Point** button **Test Point** (Figure 7-141).

		nspection Ma		10-4				W Code and Milepos		🌣 Options 🦨 🤇
	Test Point	Rectifier	Foreign Bond	Galvanic An	ode Tank					
8	Find								O Add 🕅	Delete   😏 Refresh
	ROW Code and Pipe	Milepost	Location Description	Activate Structure		Activate Foreign P/S	Activate Insulator P/S	Test Point Protection Criteria	Facility Active	Effective Date
	T-1401	0.000	Bethel Station	V				.85 On -		
	T-1401	0.001	Rectifier R-200					.85 On Prote	ction Criteria for	this test station
	T-1401	1.000	Alderman #1			×		.85 On	1	
	T-1401	1.500	Williford E #1			<b>V</b>		.85 On	<b>V</b>	
	T-1401	1.627	FM 321	1	1			.85 On	$\checkmark$	
	T-1401	1.627	FM 321		V			.85 On	V	12/10/2013
	T-1401	1.750	Park Rd. 64		1			.85 On	$\checkmark$	
	T-1401	2.000	Texas 84		V			.85 On	V	
	T-1401	2.250	County Rd.					.85 On	1	
	T-1401	2.500	Fryer B			V		.85 On	V	
	T-1401	3.000	Whitaker #1			1		.85 On	4	
-										TT Row Co
Г	Facility Level O	verride								
	Selecter	d Scheduling	Type Name Last Inspe	tion Date	Due Dates		Delinquent Da	ate Due Date Calcu	lation Method	Time Between Surv
	🗸 🕨 Yes	Test Point	3/22/2006	1	2/2013 [Del 06/22/2	2007], 1/2014, 1/2015	6/22/2007	Targets		12 Months

Figure 7-141. Test Point Information Grid

- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- **5** Select the field **Test Point Protection Criteria** for a test point in the grid. Click the down arrow and select a protection criterion in the selection list. Repeat this step for other test points as needed.
- **6** Set up other fields used to calculate *Target Structure P/S* according to the information in Table 7-1. Based on how your data entry grids are arranged, fields may be in the *Test Point Information* or *Inspection* grid.

Table 7-1describes how *Target Structure P/S* is calculated for each protection criterion. Each protection criterion identifies fields required for calculating *Target Structure P/S*. Equations with pipe brackets (|) represent absolute values.

Protection Criterion	Target Structure P/S Calculation		
.85 On (default)	–0.850 V		
.85 IRF	–0.850 –   Structure P/S – Structure IRF		
	<b>Example:</b> -0.850 -   -1.2000.800   = -1.250		
	<b>Note:</b> The value in the field User IR Correction (if any) is used instead of the   Structure P/S – Structure IRF   equation.		

Table 7-1. Calculating Target Structure P/S

Protection Criterion	Target Structure P/S Calculation		
100 mV	Native P/S – 0.100 –   Structure P/S – Structure IRF		
	<b>Example:</b> -0.550 - 0.100 -   -1.2000.800   = -1.050		
	<b>Note:</b> The fields Native P/S and Native Date can be included with any survey regardless of how old. PCS Axis always finds the most recent native reading and date, and the most recent pair of structure "on/off" readings (Structure P/S and Structure IRF). This means if the current-year survey includes only "on" readings, PCS Axis uses the last "on/off" reading and native date. This is the case until a new "on/off" reading is taken.		
300 mV	This is no longer recognized by NACE RP0169 or DOT regulations.		
Ref Read	Add the field Test Point Reference P/S in the grid when using "Ref Read" (reference reading) protection criterion.		
Ag/AgCl	Functions the same as ".85 On" but uses –0.800V instead. Use this protection criterion for off-shore (saltwater) or tank "on" readings when using silver/silver chloride half cell.		
The field Target Structure IRF is used for a facility to meet criteria and the calculated			

Table 7-1. C	Calculating	<b>Target Structure</b>	P/S (continued)	)
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minimum value for the Structure IRF field.

.85 On criteria	Calculation: Target Structure IRF = Null	
.85 IRF (off) and 100mV criteria	Structure IRF can be compared to Target Structure IRF to determine if the inspection is in compliance. If Structure IRF is more negative than Target Structure IRF, the test point is in compliance.	
	• Calculation for .85 IRF Criteria: Target Structure IRF =85.	
	Target Structure P/S is calculated for an inspection that has a Structure IRF.	
	<ul> <li>Calculation for 100mV Criteria: Target Structure IRF = Native P/S - 0.1. Native Date must be added in the grid.</li> </ul>	
	Target Structure IRF is calculated for an inspection that has a Structure IRF.	
	Native P/S = Most recent Native P/S before the date of the Structure P/S and Structure IRF.	

<b>Protection Criterion</b>	Target Structure P/S Calculation
.85 On	Calculation: Target Structure IRF = Null
300 mV	Calculation: Target Structure IRF = Null
Ref Read	Calculation: Structure P/S = Null

Table 7-1. Calculating Target Structure P/S (continued)

# **Recording Facility Current Values**

Information in this section identifies required and optional fields for recording facility current values in data entry grids:

- Recording Rectifier Current
- *Recording Pipeline Current* (page 361)
- *Recording Bond Current* (page 364)

#### **Recording Rectifier Current**

Information in Table 7-2 identifies the fields required for recording rectifier current (rectifier DC amps and volts; rectifier anode output current, and rectifier negative output current).

Facility & Current Type	Description		
Rectifier: DC Amps and DC Volts	1	Add the following fields in the <i>Rectifier Information</i> grid:	
		Activate Rectifier Output Current Found	
		Activate Rectifier Output Volts Found	
		As an option you can also add the following fields in the <i>Information</i> grid:	
		<ul> <li>Rectifier Output Shunt Factor (A/mV): use this fields to enter the amps value of the shunt conversion factor. Enter as a whole number value. Together the value in this field and in the Rectifier Output Shunt Rating (mV/A) field make up the shunt conversion factor.</li> </ul>	
		• Rectifier Output Shunt Rating (mV/A): use this field to enter the millivolts value of the shunt conversion factor. Enter as a whole number value. Together the value in this field and in the Rectifier Output Shunt Factor (A/mV) field make up the shunt conversion factor.	
	2	Add the following fields in the <i>Rectifier Inspection</i> grid:	
		Rectifier Output Current Found (Amps)	
		• Rectifier Output Volts Found (Volts)	
		• Rectifier Output Current Left (Amps)	
		• Rectifier Output Volts Left (Volts)	
		Rectifier Current Adjusted	

#### Table 7-2. Recording Rectifier Current Values

Facility & Current Type	Description			
Rectifier: Anode Output Current	Add the field <i>Number of Impressed Anodes</i> in either the <i>Rectifier Information</i> or <i>Inspection</i> grid.			
	The <i>Rectifier Anode Information</i> mini-grid in the <i>Rectifier</i> <i>Information</i> grid automatically includes the following fields for entering anode data:			
	• Impressed Anode Current Minimum (Amps)			
	• Impressed Anode Current Maximum (Amps)			
	<ul> <li>Impressed Anode Shunt Rating (mV/A)</li> </ul>			
	• Impressed Anode Shunt Resistance (Ohms)			
	• Impressed Anode Shunt Factor (A/mV)			
	See <i>Working with Rectifier Anodes</i> (page 367) for more information.			
Rectifier: Negative Output Current	Add the field <i>Number of Negatives</i> in either the <i>Rectifier Information</i> or <i>Inspection</i> grid.			
	The <i>Rectifier Negative Information</i> mini-grid in the <i>Rectifier Information</i> grid automatically includes the following fields for entering rectifier negative data:			
	• Negative Current Min (Amps)			
	• Negative Current Max (Amps)			
	• Negative Current Shunt Rating (mV/A)			
	• Negative Current Shunt Resistance (Ohms)			
	• Negative Shunt Factor (A/mV)			
	See <i>Working with Rectifier Negatives</i> (page 373) for more information.			

#### Table 7-2. Recording Rectifier Current Values (continued)

#### Recording Pipeline Current

Information in Table 7-3 identifies the fields required for recording pipeline current values.

Facility & Current Type	Description		
Pipeline Current: IR Drop Test Station	<b>1</b> Add the following fields in the <i>Test Point Information</i> grid. Enable "activate" fields for use.		
	• Activate Pipeline Current On - mV Drop		
	Activate Pipeline Current Direction		
	• Pipeline Current Calibration Factor (A/mV): Enter the amps value of the current factor when using the resistance of the pipeline to measure current flow on the pipeline. Enter value as whole number. The value is used in the pipeline current calculation.		
	• Pipeline Current Measurement Ratio (mV/A): Enter the current factor when using the resistance of the pipeline to measure current flow on the pipeline. Enter value as whole number. The value is used in the pipeline current calculation.		
	<b>2</b> Add the following fields in the <i>Test Point Inspection</i> grid:		
	• <i>Pipeline Current On (Amps)</i> : Enter amps reading for pipeline current measured with rectifier on.		
	• <i>Pipeline Current Direction</i> : Use this field to describe the direction of the current, such as upstream or downstream.		

 Table 7-3. Recording Pipeline Current

Facility & Current Type	Description		
Pipeline Insulator Current: Shunt for Insulated Flange		Add the following fields in the <i>Test Point</i> Information grid. Enable "activate" fields for use.	
		Activate Insulator Current	
		<ul> <li>Insulator Shunt Factor (A/mV)</li> </ul>	
		<ul> <li>Insulator Shunt Rating (mV/A)</li> </ul>	
		Add the field <i>Insulator Current (Amps)</i> in the <i>Test</i> Point Inspection grid.	
		Use the field <i>Insulator Current (Amps)</i> to enter the amps value of the insulator shunt reading. PCS Axis uses the reading and the value in the field <i>Insulator Shunt Rating (mV/A)</i> to calculate and enter a value in the field <i>Insulator Shunt Factor</i> ( $A/mV$ ).	
Pipeline Insulator P/S		Add and enable the field <i>Activate Insulator P/S</i> in the <i>Test Point Information</i> grid.	
		Add the field <i>Insulator P/</i> S in the <i>Test Point Inspection</i> grid.	
		Use the <i>Insulator P/S</i> field to enter a potential reading for the other side of an insulated flange, relative to the soil. This type of reading is also referred to as an "insulator-to-soil" potential reading.	
		If the protection criteria option .85 IRF or 100mV is selected in the field Test Point Protection Criteria, add and enable the field Activate Insulator IRF in the Test Point Information grid and then add the field Insulator IRF (Volts) in the Test Point Inspection grid.	

#### Table 7-3. Recording Pipeline Current

Facility & Current Type	Description
Pipeline Galvanic Current: Shunt for Galvanic Anode	<ul> <li>Add the following fields in the Galvanic Anode Information grid. Enable "activate" fields for use.</li> </ul>
	Activate Galvanic Current
	• Galvanic Anode Shunt Factor (A/mV)
	• Galvanic Anode Shunt Rating (mV/A)
	2 Add the field <i>Galvanic Current (Amps)</i> in the <i>Galvanic Anodes Inspection</i> grid.
	Use the field <i>Galvanic Anode Current (Amps)</i> to enter the amps value of the galvanic anode shunt reading. PCS Axis uses the reading and the value in the field <i>Galvanic Anode Shunt Rating (mV/A)</i> to calculate and enter a value in the field <i>Galvanic</i> <i>Anode Shunt Factor (A/mV)</i> .

Table 7-3.	Recording	Pipeline Current
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#### **Recording Bond Current**

Table 7-4 identifies the fields required for recording bond current using the *Bond Information* and *Inspection* data entry grids (*Data Entry > Edit CPDM Data > Foreign Bond*).

Facility Type	Description
Bond Current	1 Add the following fields in the Foreign Bond Information grid:
	Bond Shunt Rating
	Bond Shunt Resistance
	Use the field <i>Bond Shunt Rating</i> to enter the amps reading of the bond conversion shunt factor. Use the field <i>Bond Shunt Resistance</i> to enter the millivolt (mV) reading of the bond conversion factor. Readings in both of these fields automatically update the field <i>Bond Shunt Factor</i> .
	2 Add the following fields in the <i>Foreign Bond Inspection</i> grid:
	Bond Current Found
	Bond Current Left
	Bond Current Adjusted
	Use the field <i>Bond Current Found</i> to enter the current reading for a foreign bond as it is found (before adjusting the current). The value automatically copies to the field <i>Bond Current Left</i> . To adjust the <i>Bond Current Found</i> reading, click the check box <i>Bond Current Adjusted</i> and then type the adjusted reading in the field <i>Bond Current Left</i> .

 Table 7-4. Recording Bond Current Values

## Linking Rectifiers to ROWs

When the same rectifier provides current to one or more pipeline segments, or parallel lines entered in the hierarchy as pipeline segments, use the *ROW Links* mini-grid to link the rectifier to each pipeline segment or parallel line. This allows you to enter rectifier information once instead of re-entering the same rectifier information for each pipeline segment or parallel line. This in turn reduces the number of database records and the potential for data entry errors.

To link a rectifier to one or more pipeline segments, follow these steps:

1 Click the Select ROWs button P to open the Select ROWs window (Figure 7-142). Select the pipeline segment(s) with the rectifier you want to work with, then click Save to close the window.

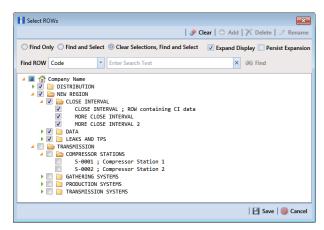


Figure 7-142. Select ROWs

- 2 Open the Edit CPDM Data window. Click Data Entry > Edit CPDM Data.
- **3** Open the *Rectifier Information* grid. Click the **Information** tab **Information** and then the **Rectifier** button **Rectifier**.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- **5** Select a row of records in the *Rectifier Information* grid with the rectifier you want to link to a pipeline segment. For example, the record for pipeline segment *T-1403* is selected in the following figure (Figure 7-143).

In	formation In	spection	aintenance	Selected R	OWs 🔠 [PCS] Re	tifier Information	[PCS] ROW Code and Mil	epost	🌣 Options 🖌 🤄	Custo
_	Test Point	Rectifier	Foreign Bor	d Galvanic Anode	e) Tank				•	Base
6	• Find							🔿 Add   🏅	🗡 Delete   😘 Refresh	18
	ROW Code and Pipe	Milepost	Facility ID	Location Description	Installation Date	Rated Rectifier Output Volts (Volts)	Rated Rectifier Output Current (Amps)	Serial Number	Manufacturer	Pow
	T-1401	0.001	R-200	Bethel Comp. Stati		28	23	60077	Goodall/CAWS 28-23	New
	T-1401	8.800	R-201	Big Brown Plant	12/15/1988	50	40	85-104	Bass Engineering C	Nava
	T-1401	21.919	R-202	Reed Station		36	30	82-38	BEC/ACS	Sout
	T-1401	31.183	R-203	FM 1366		28	23	60075	Goodall/CAWS 28-32	Nava
	T-1401	34.935	R-204	Co Line Rd	7/7/1989	36	24	86-16	BEC/ACS	Sout
	T-1401	39.089	R-205	County Road		36	30	82-39	BEC/ACS	Sout
	• T-1403	2.000	R-100	Otto		36	24	87-17	Rio	Lime
	T-1403	25.700	R-400	Co Rd Valero Tie in	2/12/1977	22	20	1062379	Goodall Inc	нL
	T-1403	42.656	R-401	County Road	7/10/1970	22	20	1062374	Bass Engineering	HL
	T-1403	51.987	R-402	Co Rd - Valve #5		24	30	710679	UNIVERSAL	HL
	T-1403	56.886	R-403	Co. Rd. San Felepe		24	30	720242	UNIVERSAL	HL
4									m Row (	Count
	ROW Links								- 1	017
		le and Pipe	Milepost	Relative Milepost	Primary Link	Bridge ID		Series	Creation Date	
	, T-1400		11.426	11.426	۲				11/6/2007	
	T-1403		2.000	2.000	0				1/19/2009	

Figure 7-143. ROW Links

- 6 Click the minimize button in the upper right-hand corner of the *Facility Level Override* mini-grid to hide the mini-grid. Then double-click the **ROW Links** button ROW Links to open the *ROW Links* mini-grid.
- 7 Click 🛟 Add in the *ROW Links* mini-grid to open the *Add Row Link* dialog box (Figure 7-144).

Milepost		
2.000		
ROW Code	Pipe	
T-1401	1	
T-1403	1	
		Row Count: 2
		💾 Save 🛛 🔞 Cance

Figure 7-144. Add Row Link

8 Identify the milepost number of the pipeline segment you want to link. Type the milepost number in the Milepost field, then select the pipeline segment. Click
 Save to save changes and close the dialog box.

After clicking **Save** the following operations occur:

• PCS Axis adds a new ROW link for the selected milepost and pipeline segment in the *ROW Links* mini-grid.

If this is the first link in the mini-grid, it automatically becomes the *Primary Link*. PCS Axis copies rectifier information from the *Primary Link* to subsequent links added later in the mini-grid. You can however set any link in the mini-grid as the *Primary Link* by clicking the option button. Only one link can be set as the *Primary Link*.

• PCS Axis adds a new record for the selected milepost and pipeline segment in the *Rectifier Information* grid.

The new record includes rectifier information copied from the record selected as the *Primary Link* in the *ROW Links* mini-grid.

**9** Provide a date in the **Creation Date** field to identify when you linked the rectifier to the pipeline segment. Select the **Creation Date** field and then click the downarrow to select a date using a calendar.

### Working with Rectifier Anodes

PCS Axis provides two mini-grids for working with rectifier impressed anodes. Use the *Rectifier Anode Information* mini-grid to provide anode information, such as the shunt rating or shunt resistance for each anode in the ground bed of a rectifier. PCS Axis uses this information to automatically calculate the anode shunt factor.

Use the *Rectifier Anode Inspection* mini-grid to enter inspection readings for each anode in the ground bed of a rectifier, such as a current or shunt reading for each impressed anode in the ground bed.

Tracking rectifier impressed anodes in PCS Axis allows you to monitor the capacity of the anode ground bed for a rectifier that produces current. You can track the current flow for each anode to determine which anodes have low or no current output.

Topics in this section include those in the following list:

- Adding Rectifier Anode Information (page 368)
- Adding Rectifier Anode Inspections (page 371)

#### Adding Rectifier Anode Information

To add a record in the *Rectifier Anode Information* mini-grid for each anode in the ground bed, follow these steps:

Click the Select ROWs button P to open the Select ROWs window (Figure 7-145). Select the pipeline segment(s) with the rectifier you want to work with, then click Save to close the window.

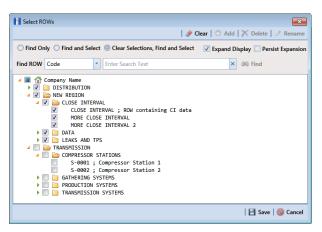


Figure 7-145. Select ROWs

- 2 Open the *Edit CPDM Data* window. Click **Data Entry** > **Edit CPDM Data**.
- **3** Open the *Rectifier Information* grid. Click the **Information** tab **Information** and then the **Rectifier** button **Rectifier**.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.

**5** Select a row of records in the *Rectifier Information* grid with the rectifier you want to add impressed anode records. For example, the record for pipeline segment T-1401 with rectifier R-202 is selected in the next figure (Figure 7-146, page 369).

		pection	Maintenance	s Selected	ROWs [PCS] Recti	fier Information	[PCS] ROW Code and M	Milepost 🛛	Options 🖌
	est Point	Rectifi	er Foreign Bo	nd Galvanic Anoc	le Tank				<b>•</b>
8.8	Find							😋 Add   🗡 D	elete   😏 Refresi
	ROW Code and Pipe	Milepost	Facility ID	Number of Impressed Anodes	Location Description	Installation Date	Rated Rectifier Output Volts (Volts)	Rated Rectifier Output Current (Amps)	Serial Number
	T-1401	0.001	R-200		Bethel Comp. Stati		28	23	60077
	T-1401	8,800	R-201	15	Big Brown Plant	12/15/1988	50	40	85-104
- >	T-1401	21.919	R-202	0 5	Reed Station		36	30	82-38
	T-1401	31.183	R-203		FM 1366		28	23	60075
	T-1401	34.935	R-204	12	Co Line Rd	7/7/1989	36	24	86-16
	T-1401	39.089	R-205	12	County Road		36	30	82-39
									🔝 Row
Re	ctifier Anode I	oformation							-1
	Name		Impressed Anode Current Minimum (Amps)	Impressed Anode Current Maximum (Amps)	Impressed Anode Shunt Rating (mV/A)	Impressed Anode Shunt Resistance (Ohms)	Impressed Anode Shunt Factor (A/mV		
			0.00	10.00					
	I 🐼			10.00	50.0/25.0		0.50		
	I 🐼 anode 1		0.00	1000				0.0	
	anode 1 anode 2		0.00	10.00	50.0/25.0		0.50		
	anode 1 anode 2 anode 3		0.00 0.00	10.00 10.00	50.0/25.0		0.50	20	
	anode 1 anode 2 anode 3 anode 4		0.00 0.00 0.00	10.00 10.00 10.00	50.0/25.0 50.0/25.0		0.50 0.50	00 00	
	anode 1 anode 2 anode 3		0.00 0.00	10.00 10.00 10.00	50.0/25.0		0.50	00 00	

Figure 7-146. Rectifier Anode Information

6 If the *Rectifier Anode Information* mini-grid is not visible, double-click the **Rectifier Anode...** button **Rectifier Anode...** at the bottom of the window to open the mini-grid. Click the minimize button — in the upper right-hand corner of any other mini-grid to hide them (Figure 7-147).

			Row Count: 21
Rectifier Anode Information -   O   X	Rectifier Negative Information 🛛 🗕 🔿   🗙	ROW Links - OIX	Facility Level Override
Name Currently Active Imp	Name Currently Active Neg	ROW Code and Pipe Milepost Rela  ATMOS, TP, RECT, BE 83.4600 8	Selected Scheduling Type Las
	line 18		Ves Annual Rectifier
			Yes Periodic Rectifier 12/
×	× • •	< ×	
Bow Count: 0	Row Count: 2	E Row Count: 1	Row Count: 2

Figure 7-147. Rectifier Information Mini-grids

7 Click **G** Add in the *Rectifier Anode Information* mini-grid to add an empty record in the mini-grid.

8 In the pop-up *Add Record* dialog box (Figure 7-148), type a name for the anode in the **Name** field. Fields requiring information include a 🐼 icon. You must enter information in the required fields before the record will be added.

Add Record		×
Name 🔀		
	-	
	💾 Save 🛛	Cancel

Figure 7-148. Add Record Dialog Box

- 9 Click 💾 Save to add the record and close the window.
- **10** Enter a value in either the field labeled **Impressed Anode Shunt Rating** or **Impressed Anode Shunt Resistance**.

**NOTE:** If entering a shunt rating, enter it as a mV per A ratio using the format nn.n/ nn.n, such as 50.0/25.0 for the shunt rating 50 mV/25 A. If entering a shunt resistance value, enter the actual resistance of the shunt in ohms. When both of these fields are empty, you can enter a value in the field *Impressed Anode Shunt Factor* instead. Otherwise, PCS Axis automatically calculates the shunt factor based on the value in the shunt rating or shunt reading field.

- 11 Repeat step 6 through step 10 to add each remaining anode in the ground bed.
- 12 Click S **Refresh** to update O derived fields, such as *Number of Impressed Anodes*. For more information about derived fields, refer to *Working with Derived Fields* (page 226).

**Note:** PCS Axis displays the total number of anodes in the system calculated field labeled *Number of Impressed Anodes* in the *Rectifier Information* and *Inspection* grid. This value is based on the total number of anodes in the *Rectifier Anode Information* mini-grid. If the field is not present in your grid, refer to *Adding a Data Grid Layout Theme* (page 317) to add the field.

### Adding Rectifier Anode Inspections

If rectifier anode records have not yet been added in the *Rectifier Anode Information* mini-grid, complete the procedure in the previous section first (*Adding Rectifier Anode Information* (page 368)) and then continue with the procedure in this section.

To enter anode inspection readings in the *Rectifier Anode Inspection* mini-grid, follow these steps:

1 Click the Select ROWs button P to open the Select ROWs window (Figure 7-149). Select the pipeline segment(s) with the rectifier you want to work with, then click Save to close the window.

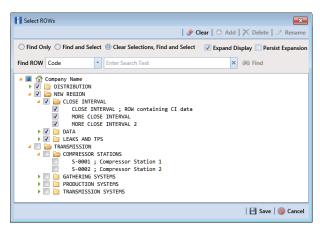


Figure 7-149. Select ROWs

- 2 Open the Edit CPDM Data window. Click Data Entry > Edit CPDM Data.
- **3** Open the *Rectifier Inspection* grid. Click the **Inspection** tab **Inspection** and then the **Rectifier** button **Rectifier**.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.

5 Select a row of records in the *Rectifier Inspection* grid with the rectifier and anodes you want to add anode inspection readings. For example, the record for pipeline segment T-1401 with rectifier R-202 is selected in Figure 7-150.

	ormation In	spection Mai	ntenance	- Selected	ROWs IPCSI Re	ctifier Inspections 🛚 🖏	IPCSI ROW Code a	nd Milepost	Options	& Custor
<u> </u>	Test Point	Rectifier	Foreign Bo	16-81					C Options	Based
	Find						B. B.	ild Survey   🔿 Ad	ld   🗙 Delete   😏 R	
Γ	ROW Code and Pipe	Milepost	Facility ID	Number of Impressed Anodes	Rectifier Output Volts Found (Volts)	Rectifier Output Current Found	Rectifier Current Adjusted	Rectifier Output Volts Left (Volts)	Rectifier Output Current Left (Amps)	Inspection
	T-1401			Impressed Anodes		(Amps)	1		Current cert (Amps)	
	T-1401	0.001	R-200 R-201	15	10.80	14.00		10.80	14.00	9/14/2006 9/13/2006
	T-1401	21.919		0 6	26.00	14.00		26.00		9/13/2006
	T-1401	31.183	R-202	•	17.00	21.50		17.00		9/1/2006
	T-1401	34,935	R-204	12	7.00	19.50		7.00		9/1/2006
	T-1401	39.089	R-205	12	9.00	24.00		9.00	24.00	9/7/2006
•										)
4			II			•			I	Row Count:
	Rectifer Anode I	spections	11			****				Row Count:
	Rectifer Anode I	Imp	ressed Anode	Anode Shunt Reading (mV)	Impressed Anode					
		Imp		Anode Shunt Reading (mV)	Impressed Anode Shunt Factor (A/m) 0.5	n				
	Name	Imp	ressed Anode rent (Amps)		Shunt Factor (A/m)	0				-   0   X
	Name anode 1 anode 2 anode 3	Imp	ressed Anode rent (Amps)		Shunt Factor (A/m) 0.5 0.5	n 00 00 00				-   0   X
	Name anode 1 anode 2 anode 3 anode 4	Imp	ressed Anode rent (Amps)		Shunt Factor (A/m) 0.5 0.5 0.5 0.5					-   0   X
	Name anode 1 anode 2 anode 3	Imp	ressed Anode rent (Amps)		Shunt Factor (A/m) 0.5 0.5	0 00 00 00 00 00				

Figure 7-150. Rectifier Anode Inspections

- 6 If the *Rectifier Anode Inspections* mini-grid is not visible, double-click the **Rectifier Anode...** button Rectifier Anode... at the bottom of the window to open the mini-grid. Click the minimize button of all other mini-grids to hide them.
- 7 Select an anode record in the mini-grid and then click 🛟 Add.
- 8 Type an inspection reading in either the **Impressed Anode Current** or **Anode Shunt Reading** field.
- **9** Click **S Refresh** to update **()** derived fields, such as *Number of Impressed Anodes* (page 372).

**Note:** For more information about **(**) derived fields, refer to *Working with Derived Fields* (page 226).

**10** Repeat **step 7** through **step 9** to enter inspection readings for remaining anodes.

# Working with Rectifier Negatives

A rectifier can typically have from one to five negative wires that protect different pipelines. Tracking rectifier negatives in PCS Axis allows you to easily identify which rectifier negative wire is connected to which pipeline. You can also monitor the current flow for each rectifier negative in an effort to determine how much of the total current is used to protect each pipeline.

PCS Axis provides two mini-grids for working with rectifier negatives. Use the *Rectifier Negative Information* mini-grid to provide negative information, such as the shunt rating or shunt resistance for each negative wire of the rectifier. PCS Axis uses this information to automatically calculate the negative shunt factor.

Use the *Rectifier Negative Inspections* mini-grid to enter inspection readings for each negative wire of the rectifier, such as a current or shunt reading for each negative wire.

Topics in this section include those in the following list:

- Adding Rectifier Negative Information (page 373)
- Adding Rectifier Negative Inspections (page 376)

#### Adding Rectifier Negative Information

To add a record in the *Rectifier Negative Information* mini-grid for each negative wire of a rectifier providing current to a pipeline(s), follow these steps:

1 Click the Select ROWs button P to open the Select ROWs window (Figure 7-151). Select the pipeline segment(s) with the rectifier you want to work with, then click Save to close the window.

Select ROWs	
I	🧈 Clear   🔿 Add   🏋 Delete   🧷 Rename
$\bigcirc$ Find Only $\bigcirc$ Find and Select $\circledcirc$ Clear Selections, Find and Select	lect 🛛 Expand Display 🗍 Persist Expansion
Find ROW Code    Enter Search Text	× 00 Find
<pre>▲ @ Company Name ▶ ♥ DISTRIBUTION ▲ ♥ NEW REGION ▲ ♥ CLOSE INTERVAL ♥ CLOSE INTERVAL ♥ CLOSE INTERVAL ♥ NORE CLOSE INTERVAL ♥ NORE CLOSE INTERVAL ♥ NORE CLOSE INTERVAL ₽ CLOSE INTERVAL ♥ COLOSE INTERVAL ■ COMPRESSOR STATIONS ■ RODUCTION SYSTEMS ■ TRANSMISSION SYSTEMS ■ TRANSMISSION SYSTEMS</pre>	ta
	💾 Save   🛞 Cancel

Figure 7-151. Select ROWs

2 Open the *Edit CPDM Data* window. Click **Data Entry** > **Edit CPDM Data**.

- **3** Open the *Rectifier Information* grid. Click the **Information** tab **Information** and then the **Rectifier** button **Rectifier**.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.
- **5** Select a row of records in the *Rectifier Information* grid with the rectifier you want to add negative records. For example, the record for pipeline segment T-1401 with rectifier R-202 is selected in the following figure (Figure 7-152).

	rmation Ins	spection Ma	intenance	👔 Sele	ted ROWs 📑 [PCS]	Rectifier Information	🛛 🖗 [PCS] ROW Code	and Milepost	Coptions 🕸	🕈 Custo
Te	est Point	Rectifier	Foreign Bo	nd Galvanic	Anode Tank					📑 Base
55	Find							🗢 Add   🏅	🗙 Delete   😏 R	lefresh   🔒
	ROW Code and Pipe	Milepost	Facility ID	Number of Negatives	Location Description	Installation Date	Rated Rectifier Output Volts (Volts)	Rated Rectifier Output Current (Amps)	Serial Number	Manufa
	T-1401	0.001	R-200		Bethel Comp. Stati		28	23	60077	Goodall/
	T-1401	8.800	R-201		Big Brown Plant	12/15/1988	50	40	85-104	Bass Eng
$\rightarrow$	T-1401	21.919	R-202	• 4	Reed Station	12/11/2013	36	30	82-38	BEC/AC
	T-1401	31.183	R-203		FM 1366		28	23	60075	Goodall/
-	T-1401	34.935	R-204		Co Line Rd	7/7/1989	36	24	86-16	BEC/AC
	T-1401	39.089	R-205		County Road		36	30	82-39	BEC/AC
•	T-1401	39.089	R-205		County Road		36	30	82-39	BEC/AC
	T-1401	39.089	R-205	11	County Road		36	30		
	T-1401	39.089	R-205	П	County Road		36	30		BEC/AC
	T-1401	e Information					36	30		Row Cour
		e Information	R-205	II Negative Current Max (Amps)		Negative Sh Resistance (Ol	unt Negative Shur	nt		
Ret	ectifier Negativ	e Information	gative Current	Negative Current Max (Amps)	Negative Shunt	Negative Shi	unt Negative Shur	nt )		Row Cour
Ret	Name	e Information	gative Current Min (Amps) 0.00 0.00	Negative Current Max (Amps) 10 10	: Negative Shunt Rating (mV/A) 0.00 50.0/50.0	Negative Shi	unt Negative Shur	nt ) 1.000		Row Cour
Ret	Name Name Name Name Name Name Name Name	e Information	gative Current Min (Amps) 0.00 0.00	Negative Current Max (Amps) 10 10 10	<ul> <li>Negative Shunt Rating (mV/A)</li> <li>000</li> <li>50.0/50.0</li> <li>000/50.0</li> </ul>	Negative Shi	unt Negative Shur	11 1.000 1.000		Row Cour
Ret	Name	e Information	gative Current Min (Amps) 0.00 0.00	Negative Current Max (Amps) 10 10 10 10 10	: Negative Shunt Rating (mV/A) 0.00 50.0/50.0	Negative Shi Resistance (Ol	unt Negative Shur	nt ) 1.000		Row Cour

Figure 7-152. Rectifier Negative Information

- 6 If the *Rectifier Negative Information* mini-grid is not visible, double-click the **Rectifier Negati...** button Rectifier Negati... at the bottom of the window to open the mini-grid. Click the minimize button in the upper right-hand corner of all other mini-grid to hide them.
- 7 Click **G** Add in the *Rectifier Negative Information* mini-grid to add an empty record in the mini-grid.
- 8 In the *Add Record* dialog box (Figure 7-153) type a name for the record. Fields requiring information include a 🐼 icon. You must enter information in the required fields before the record will be added.

Add Record	
Name 🔀	
	📔 Save   🚳 Cano

Figure 7-153. Add Record Dialog Box

- 9 Click 💾 Save to add the record and close the window.
- **10** If the rectifier rating is different than the minimum and maximum values provided by PCS Axis in the fields **Negative Current Min** and **Negative Current Max**, type the rectifier rating in these fields.
- **11** Type a value in either the field labeled **Negative Shunt Rating** or **Negative Shunt Resistance**.

**NOTE:** If entering a shunt rating, enter it as a mV per A ratio using the format nn.n/ nn.n, such as 50.0/25.0 for the shunt rating 50 mV/25 A. If entering a shunt resistance value, enter the actual resistance of the shunt in ohms. When both of these fields are empty, you can enter a value in the field *Negative Shunt Factor* instead. Otherwise, PCS Axis automatically calculates the shunt factor based on the value in the shunt rating or shunt reading field.

**12** Click **3 Refresh** to update **1** derived fields, such as *Number of Negatives* shown in Figure 7-152, page 374.

**NOTE:** For more information about **(**) derived fields, refer to *Working with Derived Fields* (page 226).

13 Repeat step 7 through step 12 to add a record for each remaining negative wire.

**NOTE:** PCS Axis displays the total number of negatives in the system calculated field labeled *Number of Negatives* in the *Rectifier Information* and *Inspection* grid. If the field is not present in your grid, refer to *Adding a Data Grid Layout Theme* (page 317) to add the field.

#### Adding Rectifier Negative Inspections

If rectifier negative records have not yet been added in the *Rectifier Negative Information* mini-grid, complete the procedure in the previous section first (*Adding Rectifier Negative Information* (page 373)) and then continue with the procedure in this section.

To enter negative inspection readings in the *Rectifier Negative Inspection* mini-grid, follow these steps:

1 Click the Select ROWs button P to open the Select ROWs window (Figure 7-154). Select the pipeline segment(s) with the rectifier you want to work with, then click Save to close the window.

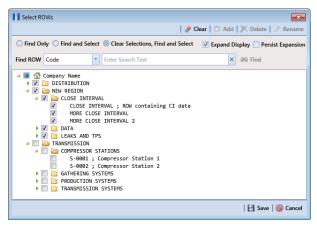


Figure 7-154. Select ROWs

- 2 Open the Edit CPDM Data window. Click Data Entry > Edit CPDM Data.
- **3** Open the *Rectifier Inspection* grid. Click the **Inspection** tab **Inspection** and then the **Rectifier** button **Rectifier**.
- 4 If you want to collapse the *Selected ROWs* panel to view more of the grid, click the **Selected ROWs** bar. Clicking the bar again expands the panel.

**5** Select a row of records in the *Rectifier Inspection* grid with the rectifier and negatives you want to add negative inspection readings. For example, the record for pipeline segment T-1401 with rectifier R-201 is selected in the following figure (Figure 7-155).

		Pection Maine	enance	📄 Sel	ected ROWs 📑 [PCS]	Rectifier Inspections 🦉	[PCS] ROW Code a	ind Milepost	🍄 Option	s 📌 Cus
	Test Point	Rectifier	Foreign B	ond Galvanic	Anode Tank					📑 Bas
8.8	Find						🖪. Вс	uild Survey   🔿 Add	🛛 🗙 Delete 🛛 😏	Refresh   §
	ROW Code and Pipe	Milepost	Facility ID	Number of Negatives	Rectifier Output Volts Found (Volts)		Rectifier Output Volts Left (Volts)	Rectifier Output Current Left (Amps)	Rectifier Current Adjusted	Inspection
	T-1401	0.001	R-200		10.80		10.80			9/14/2006
	T-1401	8.800	R-201		7.00	14.00	7.00	14.00		9/13/2006
-	T-1401	21.919	R-202	0 :	i 26.00	18.00	26.00	18.00		9/12/2006
	T-1401	31.183	R-203		17.00	21.50	17.00	21.50		9/1/2006
	T-1401	34.935	R-204		7.00	19.50	7.00	19.50		9/1/2006
	T-1401	39.089	R-205		9.00	24.00	9.00	24.00		9/7/2006
										Row Co
_										
R	ectifier Negative	Inspections								-   O
	Name	Negative Cur Found (Amp		stive Current ft (Amps)	Negative Shunt Read Found (mV)	Negative Shunt Read Left (mV)	Negative Shunt Factor (A/mV)			
			0.940	0.940	0.940	0.940	) 1	.000		
	negl		2.300	2.300	2.300			.000		
	neg2			1.700	1.700			.000		
	neg2 neg3		1.700							
	neg2 neg3 neg4		1.000	1.000	1.500					
	neg2 neg3				1.500			1200		

Figure 7-155. Rectifier Negative Inspections

- 6 If the *Rectifier Negative Inspections* mini-grid is not visible, double-click the **Rectifier Negati...** button **Rectifier Negati...** at the bottom of the window to open the mini-grid. Click the minimize button of all other mini-grids to hide them.
- 7 Select a row of records in the *Rectifier Negative Inspections* mini-grid and then click **•** Add.
- 8 If the rectifier output current has been adjusted and the check box *Rectifier Current Adjusted* is enabled in the *Inspection* grid, complete the following steps: in the *Rectifier Negative Inspections* mini-grid:
  - **a** Type the amperage reading taken before rectifier adjustments in the field **Negative Current Found**.
  - **b** Type the amperage reading taken after rectifier adjustments in the field **Negative Current Left**.
- **9** Type an inspection reading in either the field **Negative Shunt Read Found** or **Negative Shunt Read Left**.

**10** Click **S Refresh** to update **()** derived fields, such as *Number of Negatives* shown in Figure 7-155 on page 377.

**NOTE:** For more information about (1) derived fields, refer to *Working with Derived Fields* (page 226).

**11** Repeat **step 7** through **step 10** to enter readings for another negative.

Notes	

# Using a Route

This chapter explains how to work with a route. The information is intended for users with *SysAdmin*, *User*, and *Read Only* permissions. Topics in this chapter include those in the following list:

- What is a Route?
- Quick Start (page 382)
- Creating a Route (page 386)
- Changing the Order of Facilities (page 389)
- Preparing a Route for an Averaged Reading Survey (page 390)
- Preparing a Route for Inspection GPS Fields (page 407)
- Working with Themes and Filter Groups (page 421)
- Previewing a Route (page 446)
- *Exporting and Importing a Route* (page 449)
- Using a Route in PCS Axis (page 451)

# What is a Route?

A route is a user-created list of facilities for inspection. You can include facilities for one or more facility types in the same route, such as test points, valves, and atmospherics. The main advantage in a route is the ability to arrange facilities in a particular order that is more suitable in a survey. For example, you can arrange facilities in survey order instead of numerically by ROW Code and milepost number.

Routes are used in several areas of PCS Axis. You can view inspection records in a grid based on a route; transfer a survey to the Allegro Field PC based on a route; and generate reports based on a route.

# **Quick Start**

Information in this section assumes one or more routes have previously been created. If no routes exist, skip this section and begin with *Creating a Route* (page 386).

The following procedure explains how to display and set properties in a route. Property settings include selection of a layout and sort theme. Both of these themes determine how PCS Axis displays facility records in a route.

As an option, you can also set up one or more filter groups that apply only to the current session. A filter group filters data in a route by including or excluding certain facility records. It allows you to work with a subset of facility records for the currently selected ROW based on filter selection criteria.

Complete the following steps:

- Select one or more pipeline segments in the Select ROWs window. Select pipeline segment(s) with facilities you want to include in the route. Click Save to close the window.
- 2 Click Data Entry > Define Routes to open the Define Routes window.
- 3 Click the down arrow in **Routes** and select a route in the selection list (Figure 8-1).

Modules Data Entry Report Define Routes ×	is / Graphs Tools	Tield Compute	r Help 🚫	PCS Axis				v	Velcome John Smith	🥶   🔯 Le
				∎ ⊠					Coptions	
Facility 1	Types	Routes	Route1020		-	🗎 Sav	re 🛛 🗘 Add 🛛 🥜 Re	name   🗡 Delete	🛞 Cancel 🚺 Imp	ort   🛃 Exp
(PCS] All Facility Typ	es	* Facilitie	MyRoute11					16	Selected Facilities	A Remove
O Ad Hoc Theme			MyRoute924 Route1020		e Mile	nost E	acility ID	Facility Active	Facility Type	Address
Select All	🎐 Clear All		Route626		302		ocarry to	v v v v v v v v v v v v v v v v v v v	Test Point	Hadress
CPDN	u.	T-190		128.788	128.788				Test Point	
V Test Point	vi	T-190		126.863	126.863			V	Test Point	
Rectifier		T-190	13	125.873	125.873			<b>V</b>	Test Point	
Foreign Bond		T-190	13	123.608	123.608			<b>V</b>	Test Point	
Galvanic Anode		T-190	13	123.599	123.599			<b>V</b>	Foreign Bond	
Tank Tank										
VM										
VM Valve										Row Count:
VM Valve ACN Atmospheric ICM	1		s Available				••••		Available Facilitie	Row Count:
VM Valve ACN ACN C	1		s Available ROW Code and Pip	e Milepost	Relativ	e Milepost	Facility ID	Facility Active	S Available Facilitie	Row Count:
VM Valve ACM ACM Coupon Coupon Samples	1	Facilitie		e Milepost		e Milepost	Facility ID NEW RECT TEST	Facility Active	S Available Facilitie	Row Count:
VM Valve ACM ACM ACM Coupon ICM Coupon Samples V Probe	1	Facilitie	ROW Code and Pip	And American Constraints		1		Facility Active	Available Facilitie	Row Count:
VM Valve ACM ACM ACM ACM Coupon Coupon Coupon Samples Probe Inhibitor Injector	1	Facilitie	ROW Code and Pip RECTIFIER DEMO	1		1		Facility Active	Available Facilitie Facility Type Rectifier	Row Count:
VM VIAve ACM VIAtmospheric ICM Coupon Somples Probe Inhibitor Injector LSM	1	Facilitie	ROW Code and Pip RECTIFIER DEMO T-1400	1 0.000	0.	1 100 100		Facility Active	Available Facilitie Facility Type Rectifier Test Point	Row Count:
VM Valve ACM ACM ACM ACM Coupon Coupon Coupon Samples Probe Inhibitor Injector	1	Facilitie	ROW Code and Pip RECTIFIER DEMO T-1400 T-1400	1 0.000 0.500	0) 0. 0) 1)	1 100 100 169 100		Facility Active	Available Facilitie     Facility Type     Rectifier     Test Point     Test Point     Test Point     Test Point	Row Count:
VM Valve ACM V Atmospheric Coupon Coupon Samples V Probe Frobe ISM	1	Facilitie	ROW Code and Pip RECTIFIER DEMO T-1400 T-1400 T-1400 T-1400 T-1400 T-1400	1 0.000 0.500 0.669 1.000 1.028	0) 0) 0) 1) 1)	1 100 100 169 100 128		Facility Active	Available Facilitie     Facility Type     Rectifier     Test Point     Test Point     Test Point     Test Point     Test Point     Test Point	Row Count:
VM Valve ACM V Atmospheric Coupon Coupon Samples V Probe Frobe ISM	1	Facilitie	ROW Code and Pip           RECTIFIER DEMO           T-1400           T-1400           T-1400           T-1400           T-1400           T-1400           T-1400	1 0.000 0.500 1.000 1.028 1.100	0) 0) 0) 1) 1) 1)	1 000 000 000 000 128 000		Facility Active	Available Facilitie     Facility Type     Rectifier     Test Point     Test Point	Row Count:
VM Valve ACM V Atmospheric Coupon Coupon Samples V Probe Frobe ISM	1	Facilitie	ROW Code and Pip RECTIFIER DEMO T-1400 T-1400 T-1400 T-1400 T-1400 T-1400	1 0.000 0.500 0.669 1.000 1.028	0) 0) 0) 1) 1) 1)	1 100 100 169 100 128		Facility Active	Available Facilitie     Facility Type     Rectifier     Test Point     Test Point     Test Point     Test Point     Test Point     Test Point	Row Count:
VM Valve ACM V Atmospheric Coupon Coupon Samples V Probe Frobe ISM	1	Facilitie	ROW Code and Pip           RECTIFIER DEMO           T-1400           T-1400           T-1400           T-1400           T-1400           T-1400           T-1400	1 0.000 0.500 1.000 1.028 1.100	0) 0) 0) 1) 1) 1)	1 000 000 000 000 128 000		Facility Active	Available Facilitie     Facility Type     Rectifier     Test Point     Test Point	Row Count:

Figure 8-1. Define Routes Selection List

4 Click the **Options** tab **Options** to open the options page (Figure 8-2).

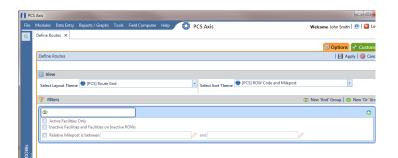


Figure 8-2. Options

- Select a layout and sort theme. Click the down arrow in the field Select Layout
   Theme and select a layout theme. Then click the down arrow in the field Select
   Sort Theme and select a sort theme.
- 6 If you want to filter records in the grid and route, complete the following steps. Otherwise, click **Apply** to save and apply changes. PCS Axis closes the options page and returns to the *Define Routes* window.

Clicking **O Cancel** allows you to close the options page without saving and applying changes.

**IMPORTANT:** Filter settings in the options page of *Define Routes* apply only to the current session and are not saved. See *Working with Themes and Filter Groups* (page 421) for information about saving filter settings in a theme.

a Click the check box of one or more options in *Filters* and then click Apply.
 For example, click Currently Active Facilities Only to only include active facilities (Figure 8-3).

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Figure 8-3. Filters

A check mark inside a check box indicates a selection. To clear a selection, click the check box again to remove the check mark.

If you want to add a filter, click the Add button and then use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions. Then click Apply to save and apply changes.

PCS Axis closes the options page and returns to the Define Routes window.

- **c** If you want to add a new AND or OR filter group, continue with one of the following steps:
  - To add a new AND filter group continue with **step 7**.
  - To add a new OR filter group continue with **step 8** (page 384).
- 7 If you want to add a new AND filter group, complete the following steps. With an AND filter group, PCS Axis includes a subset of records that meet *all* filter conditions defined for the filter group. Records are filtered in the grid and in the route (Figure 8-4).

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	Last Inspection Date	Is Between	*	✓ □ and	- 🗆 🗙

Figure 8-4. New 'And' Filter Group

- a Click () New 'And' Group to open the filter properties group box.
- **b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- **1)** Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- 2) To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.

3) To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required settings.

- **c** Click **H Apply** to save and apply changes. PCS Axis closes the options page and returns to the *Define Routes* window.
- 8 If you want to add a new OR filter group, complete the following steps. With an OR filter group, PCS Axis includes a subset of records that meet *any* filter condition defined for the filter group. Records are filtered in the grid and in the route:
  - a Click (() New 'Or' Group to open a filter properties group box (Figure 8-5).

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Figure 8-5. New 'Or Filter Group

**b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

**1)** Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.

Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required settings.

2) To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.

- 3) To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **c** Click **Apply** to save and apply changes. PCS Axis closes the options page and returns to the *Define Routes* window.

# Creating a Route

The following information explains how to create a route with a list of facilities for inspection. Facilities for inspection are based on the pipeline segment(s) you select in the *Select ROWs* window.

Complete the following steps:

1 Click the **Select ROWs** button is to open the *Select ROWs* window (Figure 8-6). Select one or more pipeline segments with facilities you want to include in the route. Click Save to close the window.

**NOTE:** A check mark inside a check box indicates a selection. To clear a selection, click the check box again to remove the check mark. A shaded check box indicates selection of some, not all, child folders, ROWs, and pipelines.

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Figure 8-6. Select ROWs

- 2 Click Data Entry > Define Routes.
- If this is the first route to be created, the *Add New Route* dialog box opens. Type a name for the new route in the field Enter Route Name. Then click OK (Figure 8-7).

Sancel

Figure 8-7. Add New Route

- **4** Select the facility type(s) you want to work with using the method described in either **step a** or **step b**:
  - a To select a facility type, click the facility type option button and then click the down arrow and select a facility type in the list, such as 
     [PCS] Rectifier Survey (Figure 8-8).

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Figure 8-8. Facility Type Theme Option

**b** To select multiple facility types, click the option button **Ad Hoc Theme** and then click the check box for one or more facility types, such as *Test Point*, *Rectifier*, and *Foreign Bond* (Figure 8-9, page 388).

**NOTE:** An *Ad Hoc Theme* only applies to the current session and is not saved. A facility type is selected when a check mark appears inside the check box. To clear the check mark, click the check box again.

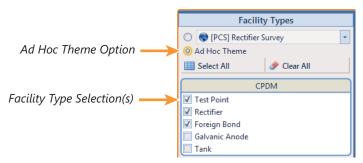


Figure 8-9. Ad Hoc Theme Option

- 5 Complete the following steps in the *Facilities Available* grid (Figure 8-10):
  - Select which facilities to include in the route. To include all facilities, click
     Add All and then click Yes when the Add All message opens.

To only include facilities you select, click the check box for each facility in the *Facilities Available* grid. Or double-click each facility.

**NOTE:** Selected facilities display in the *Facilities in Route* grid.

**b** Click **B** Save to save changes. Continue with the next section to change the order of facilities in the route (page 389).

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Figure 8-10. Define Routes

# Changing the Order of Facilities

The order of facilities shown in the *Facilities in Route* grid identifies the facility order used in a route. You can easily change the order of facilities by dragging and dropping one or more grid rows to a different location in the grid. Changing the order allows you to arrange facilities based on particular criteria, such as arranging facilities in the order a survey is taken.

To change the order of facilities in a route, follow these steps:

- 1 If the *Define Routes* window is not open, complete the following steps:
  - a Select one or more pipeline segments in the *Select ROWs* window (Figure 8-11). Click **Save** to close the window.

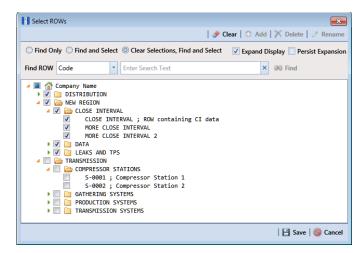


Figure 8-11. Select ROWs

- **b** Click **Data Entry** > **Define Routes**, then click the down arrow in **Routes** and select a route (Figure 8-1, page 382).
- **2** Arrange the order of facilities listed in the *Facilities in Route* grid as needed using any of the following methods (Figure 8-12):
  - To move a single grid row, select the row, then drag and drop the row in a different location in the grid. Click e Save to save changes.

**NOTE:** A message displays when moving selected grid rows to confirm the new location in the grid (Figure 8-12, page 390).

- To move a group of consecutive grid rows, click the first row, press and hold the Shift key, then click the last row. Drag and drop selected rows in a different location in the grid. Click Save to save changes.
- To move a group of non-consecutive grid rows, press and hold the **Ctrl** key, then click each row you want to select. Drag and drop selected rows in a different location in the grid. Click **Save** to save changes.

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Figure 8-12. Arranging the Order of Facilities

# Preparing a Route for an Averaged Reading Survey

This section applies only to the CPDM module. It explains how to prepare and send a survey to the Allegro based on a route with facilities in an averaged reading survey. Facilities for inspection are also set up with timed reading fields in the *Test Point Information* and *Inspection* data entry grid.

Topics in this section include those in the following list:

- Adding Timed Reading Fields in the Information Grid
- Adding Timed Reading Fields in the Inspection Grid (page 395)
- Editing a Route for an Averaged Reading Survey (page 397)
- Sending a Survey to the Allegro Based on a Route (page 399)

**NOTE:** See the *Allegro User Guide* for information about taking an averaged reading survey using the Periodic Survey software on the Allegro.

### Adding Timed Reading Fields in the Information Grid

Timed reading fields are added in the *Test Point Information* data entry grid to allow data entry of inspection readings in the *Test Point Inspection* data entry grid for an averaged reading survey. Information in this section explains how to add timed reading fields in a layout theme and then apply the theme to the *Information* data entry grid.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-13). Select pipeline segments with facilities you plan to include in the route. Click Save to close the window.

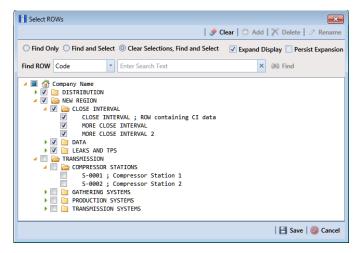


Figure 8-13. Select ROWs

- 2 Click Data Entry > Edit CPDM Data.
- **3** Click the **Test Point** button **Test Point**, then the **Information** tab **Information** to open the *Test Point Information* data entry grid (Figure 8-14).

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ſ		ROW Code and Pipe	Milepost	Location Description	Facility Active	Test Point Protection Criteria	Activate Structure P/S	Activate Casing P/S	Activate Foreign P/S	Activate Insulator		ive Date	Perr
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	1	F-1401	1.000	Alderman #1	V	.85 On	1		1				
	1	F-1401	1.500	Williford E #1	1	.85 On	1		1				
	1	F-1401	1.627	FM 321	1	.85 On	1	1			12/10/	/2013	
	1	Г-1401	1.750	Park Rd. 64	1	.85 On	1	1					
	1	F-1401	2.000	Texas 84	$\checkmark$	.85 On	1	V					
	1	F-1401	2.250	County Rd.	$\checkmark$	.85 On	1						
	1	F-1401	2.500	Fryer B	1	.85 On	$\checkmark$		1				
	1	F-1401	3.000	Whitaker #1	1	.85 On	1		1				
	4	r.1401	2.240		172	85.0n	1781	17-11	100				Þ
												Row Co	unt: 10
	-												
	Fac	ility Level Ov	erride										_
		Selected	Scheduling Type Name	Last Inspection Date	Due Dates		Delinquent Da	te Due D Calculation		ne Between Surveys	Target Month	Target Yea	r
		• Yes	Test Point	3/22/2006	12/2012 (D-106/2	2/20071, 1/2014, 1/201	5 6/22/2007	Targets	12	Nonths	January	N/A	

Figure 8-14. Test Point Information Data Entry Grid

**4** Click the **Customize** tab **Customize** to open the *Layouts* page (Figure 8-15).

Inspection       Maintenance       Imports       Options       Imports         Ligouts       Test Point Information       Imports       Sore and Close       Sore I       New Baseline       Cancer         Imports       Test Point Information       Imports       Sorts       Imports       Sorts         Imports       Test Point Information       Imports       New Baseline       Cancer       Imports         Imports       Test Point Information Fields       Imports       New Code and Pipe       Imports       Impor	PCS Axis File Modules Data Entry Repo	orts / Graphs Tools Field Compu	er Help 🔘	Cathodic Protection Data Manager (CPDM)	Welcome J	ohn Smith   🕑   🔀 Log OL
Bernaret Comments     Image: Comments of the comments       Activate Insulator Status     Image: Comments of the comments       Activate Projection     Activate Projection       Activate Projection     Activate Projection	Lyouts: Test Point Infor Select Lyout Theme ● Point Point Infor Select Lyout Point Infor Select Lyout Point Infor Select Lyout Point Infor Select Point Infor Select Point Infor Select Point Infor Select Point Infor Select Point Infor Select Point Infor Activate Activate Infor Activate Infor Activ	Institution Fields Infermation Fields		ROW Code and Pipe     Molecular     Test Point Protection Criteria     Activate Average P/S     Activate Average P/S     Activate Man P/S     Activate Man P/S     Activate Man P/S     Activate Cosing P/S     Activate Cosing P/S     Activate Cosing P/S	seline   🕲 Cancel	Layouts     Sorts     Filters     Forms

- 5 Select a data entry grid layout theme. Click the down arrow in Select LayoutTheme and select a theme in the selection list.
- 6 Double-click **Fest Point Information Fields** in the left pane of the window to view a list of fields available for selection (Figure 8-16).

	Data Entry Reports / Graphs Tools Field Comput M Data ×	er Help 🔘	Cathodic Protection Data Manager (CPDM)	Welcome	ohn Smith   🔨   🔀 I
E La Select © [PC Search	Station         Maintenance           ayouts:         Test Point Information           Layout Theme         5)           5)         Test Point Information           7=6: Field.         7           7=6: Field.         7           7=6: AC BP Manimum         AC BP Minimum	Save a	nd Close 🕒 Save   🗘 Add   X Delete   🗠 Revert   🔾 Ner ROW Code and Pipe Conten Description Generation Description		Options Custor Layouts Sorts Filters Forms Close
	A CP /S Maintum     AC KP /S Maintum     AC Count     Activate AC (RF     Activate AC (RF     Activate AC (RF     Activate AC (RF     Activate AC (RF)     Activate Casing (RF     Activate Casing (RF)     Activate Cas	•	Facility Active           Test Point Protection Criteria           Activets Structure P/S           Activets Caring P/S           Activets Ferring P/S           Permanent Comments           Address - Apartment	<ul> <li>Image: Second sec</li></ul>	
	Activate Invaluator Br Activate Invaluator System Activate Invalue V State Activate Nor DS Activate Nor DS Activate Nor DS Activate Popliane Current Direction Activate Popliane Current On - mV Drop Activate Synchrone Current On - mV Drop Act				

Figure 8-16. Test Point Information Fields

- 7 Add the following list of timed reading fields in the layout theme. To add fields, double-click each timed reading field listed in the left pane of the *Layouts* page to move fields to the right pane. Add other fields as required. The data entry grid layout theme includes all fields listed in the right pane of the *Layouts* page.
  - Activate Average P/S
  - Activate Max P/S
  - Activate Min P/S
  - Activate P/S Sample Time

8 Click **Save**, then click the **Options** tab **Options** to open the options page (Figure 8-17).

	Edit CPDM Data ×	Cathodic Protection Data Manager (CPDM)	Welcome John Smith   🕺   🔀 Log
	Information Inspection Maintenance		🔅 Options 🗲 Customi
	Test Point Information		🖪 Apply   🚳 Cance
	🗈 Based On		
	<ul> <li>Selected ROWs</li> <li>Route</li> <li>Schedule</li> </ul>		
	🗄 View		🍥 🌐 Grid 🔘 📋 Form 🔍 隋 Grid And Fo
	Select Layout Theme 🐨 [PCS] Test Point Information	<ul> <li>Select Sort Theme</li> <li>PCS] ROW Code and Milepost</li> </ul>	*
	Select Form Theme	Sort Dates  Oldest First	
	Options		
	Only the most recent information record for each facility		
1	🝸 Filters		💿 New 'And' Group 🛛 🔘 New 'Or' Gro
			0
	Active Facilities Only		
	Inactive Facilities and Facilities on Inactive ROWs		
	Relative Milepost is between	🥖 and 🖉	/

Figure 8-17. Options

- **9** Apply the layout theme to the data entry grid. Click the down arrow in the field **Select Layout Theme** and select the layout theme with timed reading fields.
- **10** Click **Apply** to save and apply changes. PCS Axis closes the options page and returns to the *Test Point Information* data entry grid.
- **11** In each column labeled with an "activate" timed reading field, click the check box associated with the facility you plan to record Allegro timed readings (Figure 8-18).

		Information I	spection Ma	aintenance	Selected ROV	Vs 📑 [PCS] Test Poin	it Information	🚡 [PCS] ROW C	ode and Mil	epost	Coption:	s 🦨 Custor
		Test Point	Rectifier	Foreign Bond	Galvanic Anode	Tank						🛃 Based
		SS Find						_		10	Y nu l S	Refresh   😫
(*		ROW Code and Pipe	Milepost	Location Description	Facility Active	Test Point Protection Criteria	Activate Structure P/S	Activate Average P/S	Activate Max P/S	Activate Min P/S	Activate P/S Sample Time	Activate Casing P/S
tivate Timed 🗕							$\rightarrow$					
ading Fields		<ul> <li>T-1401</li> </ul>	0.001	Rectifier R-200	<b>V</b>	.85 On		V	V	<b>V</b>	V	
<i>Juing rielus</i>		T-1401	1.000	Alderman #1	<b>V</b>	.85 On	<b>V</b>	7	V	<b>V</b>		
		T-1401	1.500	Williford E #1	<b>v</b>	.85 On	2					
		T-1401 T-1401	1.627	FM 321	V	.85 On .85 On	1					V
		T-1401	2.000	Park Rd. 64 Texas 84	✓ ✓	.85 On	1					<b>V</b>
		T-1401	2.000	County Rd.	V V	.85 On	✓ ✓					<b>V</b>
		T-1401	2.500	Fryer B	V V	.85 On	<ul> <li>✓</li> </ul>					
	Ns Ns	T-1401	3.000	Whitaker #1	v V	.85 On	v.					
	ROWs	T-1401	3.218	County Road	×	.85 On	1					
	- <del>1</del> -	T-1401	3.250	Old Meter Riser	<b>V</b>	.85 On	1					
	Selected .	T-1401	3.500	Old Meter Riser	1	.85 On	1					
	Sel	4										
												Row Count: 1
		Facility Level O	Scheduling	Last Inspection Date	Due Dates		Delinquent Da		Date on Method	Time Between Surveys	Target Month	Target Yea
		V Yes	Test Point	3/22/2006	42/2012 /201406 /2014		C (22 (2007			12 Months		N/A
						2/2007], 1/2014, 1/2015	6/22/2007	Targets		12 Months	January	

Figure 8-18. Test Point Information Data Entry Grid

**12** Continue with the next section, *Adding Timed Reading Fields in the Inspection Grid* (page 395).

### Adding Timed Reading Fields in the Inspection Grid

Complete the following steps to add timed reading fields in a layout theme and then apply the theme to the *Test Point Inspection* data entry grid:

- 1 If the *Test Point Inspection* data entry grid is not visible, click the **Test Point** button **Test Point** and then the **Inspection** tab **Inspection**.
- 2 Click the **Customize** tab **Customize** to display the Layouts page.
- **3** Select a layout theme. Click the down arrow in **Select Layout Theme** and select a theme in the selection list.
- 4 Double-click **Fest Point Inspection Fields** in the left pane of the window to view a list of fields available for selection (Figure 8-19).

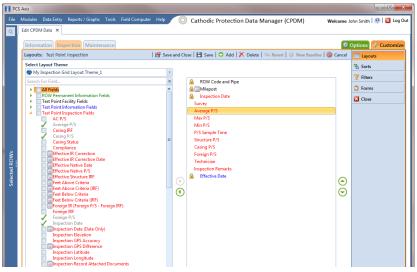


Figure 8-19. Layouts

- **5** Add the following list of timed reading fields in the layout theme. To add a field, double-click a timed reading field listed in the left pane to move the field to the right pane. Add other fields as required. The layout theme includes all fields listed in the right pane of the *Layouts* page.
  - Average P/S
  - Max P/S
  - Min P/S
  - P/S Sample Time

6 Click **Save**, then click the **Options** tab **Options** to open the options page (Figure 8-20).

PCS	i Axis 🕞 🖻 📃 🗠
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 👘 Cathodic Protection Data Manager (CPDM) 🛛 Wekome John Smith   🕘   🔀 Log Out
Q	Edit CPDM Data 🗙
	Information Inspection Maintenance
	Test Point Inspection 🛛 🖾 Apply   🚳 Cancel
	1 Based On
	© Selected ROWs Route
	Schedule
	📴 View 💿 🖽 Grid 🔿 🚨 Form 🛇 🖏 Grid And Form
	Select Layout Theme PCS] Test Point Inspections Select Sort Theme PCS] ROW Code and Milepost
	Select Form Theme Sort Dates © Oldest First Newest First
	() Options
s.	Only include facilities with inspections during the reporting time period Filter Options:
ŇÖ.	All inspections that meet the filter criteria
ed R	Apply other filters to the most recent inspection found within report timeframe     The most recent inspection after the filter criteria has been met
Selected ROWs	V Filters V Fil
01	Y Hiters O New And Group   W New O'r Group
	Active Facilities Only     Inactive Facilities on Inactive ROWs
	Relative Milepost is between
	Inspection Date is between and
	Survey is equal to
	Periodic Survey is equal to
	Periodic Survey Year is equal to
	Technician is equal to
	¥

Figure 8-20. Options

- 7 Apply the layout theme to the data entry grid. Click the down arrow in the fieldSelect Layout Theme and select the layout theme with timed reading fields.
- 8 Click Apply to save and apply changes. PCS Axis closes the options page and returns to the *Test Point Inspection* data entry grid.
- **9** Click the x close icon to close the *Edit CPDM Data* window. Continue with the next section, *Editing a Route for an Averaged Reading Survey* (page 397).

#### Editing a Route for an Averaged Reading Survey

Complete the following steps to set up a route with facilities for inspection in an averaged reading survey:

Select one or more pipeline segments in the Select ROWs window (Figure 8-21). Select pipeline segments with facilities you plan to include in a route for an averaged reading survey. Click Save to close the window.

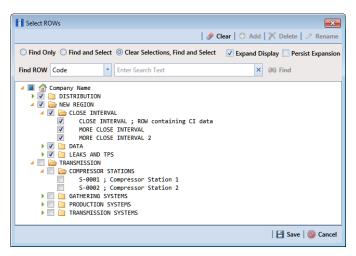


Figure 8-21. Select ROWs

- 2 Open the *Define Routes* window and select a route. Click **Data Entry** > **Define Routes**. Then click the down arrow in **Routes** and select a route in the selection list.
- Click the down arrow in Facility Types and select [PCS] Test Point Survey.Or, select Ad Hoc Theme and then click the Test Point check box.
- 4 Select which facilities to include in the route. To include all facilities, click **G** Add All and then click **Yes** when the *Add All* message opens.

To only include facilities you select, click the check box for each facility in the *Facilities Available* grid. Or double-click each facility.

**NOTE:** Selected facilities display in the *Facilities in Route* grid.

- **5** Arrange the survey order of facilities listed in the *Facilities in Route* grid as needed using any of the following methods:
  - To move a single grid row, select the row, then drag and drop the row in a different location in the grid.

**NOTE:** A message displays when moving selected grid rows to confirm the new location in the grid (Figure 8-12, page 390).

• To move a group of consecutive grid rows, click the first row, press and hold the **Shift** key, then click the last row. Drag and drop selected rows in a different location in the grid.

- To move a group of non-consecutive grid rows, press and hold the **Ctrl** key, then click each row you want to select. Drag and drop selected rows in a different location in the grid.
- 6 Click Save to save changes and then click the close icon x to close the *Define Routes* window.
- **7** Continue with the next section *Sending a Survey to the Allegro Based on a Route* (page 399).

#### Sending a Survey to the Allegro Based on a Route

Information in this section explains how to send a survey to the Allegro based on a route with facilities in an averaged reading survey. The process includes adding a theme with prompts for timed reading fields. Prompts are data entry fields in an Allegro survey file that require survey data, such as an inspection reading at each facility location.

Complete the following steps:

- **1** Verify the Allegro is connected to your computer. If needed, refer to the *Allegro User Guide* for information about how to connect the device.
- Select one or more pipeline segments in the *Select ROWs* window (Figure 8-22).
   Select pipeline segments with facilities you plan to include in an averaged reading survey. Click Save to close the window.

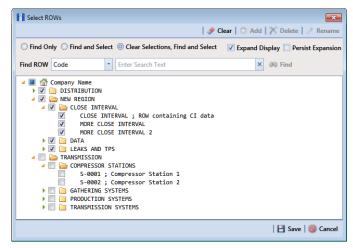


Figure 8-22. Select ROWs

**3** Click **Field Computer** > **Send** to open the *Field Computer Send* window (Figure 8-23).

					🕈 Customize		
	Field Computer Send			l E	🖥 Apply 🛛 🖂 Send 🛛 📑 Export		
	abla  (i) It appears that you have some invalid	options, please correct the follow	ing (1)				
	Selected ROWs     Route     Schedule     Import Exported List		CPDM     CPDM     Test Point    Foreign Bond    Tar     Rectifier    Galvanic Anode	k VM ACM ICM ✓ Coupon ♥ Pr ✓ Valve Atmospheric ✓ Coupon ♥ Pr ✓ Samples ♥ In	obe 🗸 Leak Survey		
Selected ROWs	🔛 View						
	Select Prompt	Select L	ayout Theme	Select Sort Theme			
1	[PCS] Field Computer Prompt	- 😵 [PC	5] Field Computer Survey	<ul> <li>PCS] ROW Code and Milepost</li> </ul>			
	Options						
	Output File All Facility Types.dat Open Maintenance Items	<ul> <li>Send to Allegro</li> <li>Send to disk</li> </ul>	Output Directory Select a file location				
	V Filters						

Figure 8-23. Field Computer Send

4 Click the **Customize** tab **Customize**, then the **Prompts** button **Prompts** to open the **Prompts** page (Figure 8-24).

Field Computer Send ×	lelp 🔅	PCS Axis W	cicoille )	ohn Smith   🔨   🔀 L
				👉 Custor
Prompts: Field Computer Send	Save and C	ose   🛃 Save   🗘 Add   🏋 Delete   🖘 Revert   🔅 New Baseline   🌀	Cancel	🔡 Prompts
Select Prompt		12345678		E Layouts
[PCS] Field Computer Prompt for SelectedROW	-	Pages		🐁 Sorts
Select Facility Type Atmospheric		Pages =		Filters
				Close
Facility, Information and ROW Fields Search For Field	×	Cop	_	- Close
Al Fields     ROV Permanent Information Fields     Atmospheric Facility Fields     Atmospheric Information Fields	() (	ROW Code and Pipe	•	
Inspection and Maintenance Fields Search For Field.	× (4)	Costing Condition Corosion Inspection Remarks Technician		

Figure 8-24. Prompts

**5** Click **G** Add to open the *New Prompt* dialog box (Figure 8-25).

Enter Theme Nan	ne:	
My Allegro Time	d Reading Prompts_1	
Public V Co	· ·	
(PCS) Field C	Computer Prompt for SelectedROW	Ŧ

Figure 8-25. New Prompt

- **6** Type a name for the theme in the field **Enter Theme Name**. Required fields are identified with the **8** icon and must be completed to continue.
- 7 If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the theme saves as a *private* theme.
- 8 If you want to copy fields from an existing theme, click the **Copy Content** check box to place a check mark inside the check box. Then click the down arrow in the field **Copy Fields From Theme** and select a theme in the selection list.

If you do not want to copy fields from an existing prompt theme, clear the check mark inside the *Copy Content* check box by clicking the check box.

- 9 Click **W** to save changes and return to the *Prompts* page.
- **10** Verify the name of the new theme displays in the **Select Prompt** field. If not, click the down arrow and select the theme in the selection list.
- 11 Click the down arrow in Select Facility Type and select Test Point.
- **12** To add information prompts, follow these steps:
  - a Click All Fields in *Facility, Information and ROW Fields* to view a list of fields available for selection.
  - **b** Double-click one or more fields in the selection list to move fields to the right pane. All fields listed in the right pane are included in the prompt theme.
- **13** To add timed reading prompts, follow these steps:
  - **a** Click **HII Fields** in Inspection and Maintenance Fields.
  - **b** Double-click the following timed reading fields to move the fields to the right pane:
    - Average P/S
    - Max P/S
    - Min P/S
    - P/S Sample Time

**NOTE:** If you want to remove information, inspection, or maintenance fields, double-click a field listed in the right pane to move it back to the left pane.

- **14** Complete the following steps to add site string prompts that help identify one facility from another when using the Allegro. Site string prompts are included with each facility and can be viewed in the Allegro *Site List* window.
  - a Click the Site String tab to view a list of fields available for selection (Figure 8-26).

File	S <mark>Axis</mark> Modules Data Entry Reports / Graphs Tools Field Computer Help	O PCS	Axis Wekome J	ohn Smith   🕑   🔀 Log Out
Q	Field Computer Send 🗙			📌 Customize
	Prompts: Field Computer Send	Bave Save	e and Close   💾 Save   🔿 Add   🗡 Delete   🗠 Revert   ۞ New Baseline   🚳 Cancel	Rompts
	Select Prompt		12345678	T Layouts
	S RouteTheme	-		Sorts
	Select Facility Type		Pages 02345678	-
	Test Point	*	0000000	Y Filters
	Facility, Information and ROW Fields			🔀 Close
	Search For Field Address - Suffix Algennert Sheet Number City Creation Date Days Until Delinquent	×	ROW Code and Pipe Copy MRepost Location Description Effective Date	
Selected ROWs	Inspection and Maintenance Fields Search For Field	×	1 Test Point Detail Inspection Records	
Selecte	Insulator P/S     Insulator P/S     Mar P/S     Man P/S     Main P/S     Main P/S     Native Date		Structure P/S Caing P/S Foreign P/S Insulator P/S v	
	Site String			
	Search For Field	×	ROW Code and Pipe	

Figure 8-26. Site String Fields

- b Double-click one or more fields in the selection list to move fields to the right pane. For example, double-click Facility ID and Location Description. Click the Site String tab again to close the pane.
- 15 If you want to add another page of prompts, click Copy and then double-click one or more fields as needed in the left pane of *Inspection and Maintenance Fields*. When you have multiple pages of prompts, clicking a page number icon, such as (2), displays prompts for the selected page.

**NOTE:** Information fields in *Facility, Information, and ROW Fields* automatically copy to each page of prompts.

- **16** Click **Save and Close** to save changes and return to the *Field Computer Send* window.
- 17 Click the **Route** option and select a route in the selection box. Then clickApply to update the grid (Figure 8-27).

Mod	ules Data Entry Repo	rts/Graphs Tools Fiel	ld Computer Help	🖉 PCS Axi	5		Welcome John Smith   🔨   💈		
Field	Computer Send ×								
							of Cus		
Fie	ld Computer Send					📔 Apply   🖂 Send   📑 Expo			
:	Based On								
0	Selected ROWs	My Route_14							
	Route	My Route_15							
	Schedule Import Exported List	My Route_16							
Import Exported List									
10.00									
	ect Prompt			ayout Theme 51 Field Computer Surv			t Sort Theme		
-	My Allegro Timed Read	ng Prompts_2	<ul> <li>Inc.</li> </ul>	sj Fleid Computer Surv	ey	• •	PCS] Route Order		
(2)	Options								
	utput File	6	Send to Allegro	Output Directory					
	ly Route_15.dat	-	Send to disk	C:\Users\John.S	nith\Documents		•••		
	Open Maintenance Iter								
$\sim$	🍸 Filters								
	Route Name and Orde		•	Relative Milepost	Facility ID	Address	Location Description		
1	My Route_15 - 1	T-1401	0.001	0.001	R-200	_	Bethel Comp. Station		
2	My Route_15 - 2	T-1401	8.800	8.800	R-201	_	Big Brown Plant		
3	My Route_15 - 3 My Route 15 - 4	T-1401 T-1401	21.919 34.935	21.919 34.935	R-202 R-204	_	Reed Station Co Line Rd		
4	My Koute_15 - 4	1-1401	34.935	54.935	R-204		Co Line Kd		

Figure 8-27. Field Computer Send

- **18** Click the down arrow in **Select Prompt** and select a theme with timed reading fields.
- **19** Select a layout and sort theme as follows:
  - **a** Click the down arrow in the field **Select Layout Theme** and select a theme in the list.
  - **b** Click the down arrow in the field **Select Sort Theme** and select a theme in the list.
- **20** If you want to rename the survey file, type a name in the **Output File** field making sure to include the *.dat* file extension.
- 21 Select the option Send to Allegro.
- **22** If the check box **Open Maintenance Items** is available for selection, click the check box if you want to include open maintenance records in the survey file.

**NOTE:** When the selected prompt theme includes maintenance prompts, the check box *Open Maintenance Items* is available for selection. It is disabled and unavailable for selection when maintenance prompts are not included in the currently selected prompt theme.

- **23** Click the **Filters** button to open the *Filters* panel (Figure 8-28).
- **24** If you want to filter records in the grid and in the route sent to the Allegro, select one or more options in *Filters*. For example, click *Active Facilities Only* to only include active facilities.

**IMPORTANT:** Filter settings in *Field Computer Send* apply only to the current session and are not saved. See *Working with Themes and Filter Groups* (page 421) for information about saving filter settings in a theme.

	ules Data Entry Report	5, 010pm5 10005 110	a compater mep	😲 PCS Axi:	5		Welcome John Smith   🥹   🖺					
							f Cust					
Fie	ld Computer Send						💾 Apply   🖂 Send   📄					
:	Based On											
C	Selected ROWs	ly Route_14										
	Route 🕟	ly Route_15										
		ly Route_16										
	View											
	ect Prompt			ayout Theme			t Sort Theme					
-	My Allegro Timed Readin	g Prompts_2	- 💎 [PCS	] Field Computer Surv	ey	- 😵 [F	PCS] Route Order					
(i) Options												
0	utput File	6	Send to Allegro	Output Directory								
N	ly Route_15.dat	0	) Send to disk	C:\Users\john.smi	th\Documents							
	Open Maintenance Items											
~	✓ Y Filters											
							O New 'And' Group      O New 'Or					
ſ	D											
	Active Facilities Only		)									
		acilities on Inactive ROW										
ſ	Relative Milepost is bet	ween		🥖 and			9					
				, ,								
_	Route Name and Order	ROW Code and Pipe	Milepost	Relative Milepost	Facility ID	Address	Location Description					
	My Route_15 - 1	T-1401	0.001	0.001	R-200		Bethel Comp. Station					
1	My Route_15 - 2	T-1401	8.800	8.800	R-201		Big Brown Plant					
1		T-1401	21.919	21.919	R-202		Reed Station					
1 2 3	My Route_15 - 3		34,935	34.935	R-204		Co Line Rd					
1 2 3 4	My Route_15 - 3 My Route_15 - 4	T-1401										

Figure 8-28. Filters

If you want to add a new AND or OR filter group, continue with **step 25** or **step 26** (page 405).

- **25** To filter records in the grid and in the route sent to the Allegro based on a subset of records that meet *all* filter conditions, complete the following steps to add a new AND filter group:
  - a Click () New 'And' Group to open the filter properties group box (Figure 8-29).

ield Computer Send 🗙	ts/Graphs Tools Fie	nop	OPCS Axi	5		Welcome John Sn	nich i 🖤 l
							f ci
Field Computer Send						Apply 🖂	
♥ (i) It appears that you have	ve some invalid options, pl	ease correct the follow	ing (1)				
Selected ROWs	/ly Route_14						
Route	Ay Route_15						
Schedule     Import Exported List	/ly Route_16						
🔢 View							
Select Prompt			ayout Theme			iort Theme	
😍 My Allegro Timed Readir	ig Prompts_2	* 😵 [PC	5] Field Computer Surv	ey	- 😵 [PC	5] Route Order	
Options							
Output File	(	Send to Allegro	Output Directory				
My Route_15.dat	(	Send to disk					
Open Maintenance Item							
∧							
						O New 'And' Group	O New
		<u>٦</u>				New 'And' Group	O New
۵		]				New 'And' Group	O New
Active Facilities Only		]				① New 'And' Group	O New
Active Facilities Only Inactive Facilities and F		/s				New 'And' Group	O New
Active Facilities Only		/s	🖉 and			New 'And' Group	O New
Active Facilities Only Active Facilities only Relative Facilities and F		/s	🥖 and			New 'And' Group	0 New *
Active Facilities Only Inactive Facilities and F		] /s 	🥒 and			New 'And' Group	0 New *
Active Facilities Only Active Facilities only Relative Facilities and F		]	/ and		• (jj) and	New 'And' Group	© New *
Active Facilities Only Inactive Facilities and F Relative Milepost is bel	veen s Betw	ween		Facility ID	• and	New 'And' Group	
Active Facilities Only     Inactive Facilities and F     Relative Milepost is bet	veen s Betw	ween	•	Facility JD R-200		Location Description	
Active Facilities Only     Inactive Facilities and F     Relative Milepost is bet     Last Inspection Date     Route Name and Order	KOW Code and Pipe	ween Milepost	Relative Milepost				
Active Facilities Only     Inactive Facilities and F     Relative Milepost is bet      D     Extension Date     Route Name and Ordee     My Route_15 - 1	Ween  KOW Code and Pipe T-1401	Milepost 0.001	Relative Milepost	R-200		Location Description Bethel Comp. Station	
Active Facilities Only     Inactive Facilities and F     Relative Milepost is bef      Source International Order     Route Name and Order     My Route_15- 1     My Route_15- 2	ROW Code and Pipe T-1401 T-1401	Ween Milepost 0.001 8.800	Relative Milepost     0.001     8.800	R-200 R-201		Location Description Bethel Comp. Station Big Brown Plant	

Figure 8-29. New 'And' Filter Group

**b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- **1)** Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- 2) To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.
- 3) To set a date range using dynamic start and end dates, click the according to the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required settings (Figure 8-29).

- **26** To filter records in the grid and in the route sent to the Allegro based on a subset of records that meet *any* filter condition, complete the following steps to add a new OR filter group:
  - a Click () New 'Or' Group to open a filter properties group box (Figure 8-30).

	Vodules Data Entry Report Field Computer Send ×	s / Graphs Tools	Field Computer Help	😲 PCS Axi	8		Welcome John S	mith   🤨   🔀 Lo
ľ								+ Custom
	Field Computer Send						🛛 🔁 Apply	Send Send
	∇ (i) It appears that you hav	e some invalid option	s, please correct the follow	ving (1)				
	Route     N	y Route_14 y Route_15 y Route_16						
	View							
	Select Prompt		Select	Layout Theme		Select	Sort Theme	
	😴 My Allegro Timed Reading	Prompts_2		S] Field Computer Surv	ty		CS] Route Order	
	() Options							
	Output File My Route_15.dat		Send to Allegro Send to disk	Output Directory C:\Users\john.smi	th\Documents			
	Filters						New 'And' Group	0 New 'Or' Gro
	Active Facilities Only Inactive Facilities and Fi Relative Milepost is betw		OWs	🌮 and			P	
	D Include records that ma	tch any of these cor	iditions					•
	Last Inspection Date	* Is	Between	*		- 🖬 and		- 🛛 🗡
	Route Name and Order           1         My Route_15 - 1           2         My Route_15 - 2           3         My Route_15 - 3           4         My Route_15 - 4	ROW Code and F T-1401 T-1401 T-1401 T-1401	ipe Milepost 0.001 8.800 21.919 34.935	Relative Milepost 0.001 8.800 21.919 34.935	Facility ID R-200 R-201 R-202 R-204	Address	Location Description Bethel Comp. Station Big Brown Plant Reed Station Co Line Rd	

Figure 8-30. New 'Or' Filter Group

**b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- **1)** Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- 2) To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.
- 3) To set a date range using dynamic start and end dates, click the according to the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- 27 Click the **Filters** button to close the *Filters* panel. Then click **H** Apply to update the grid.
- **28** Click **Send** to send the survey file to the Allegro.
- **29** When a message displays confirming the send process is complete, click **V OK** to close the message (Figure 8-31). PCS Axis sends the survey file to the *PSData* folder on the Allegro.

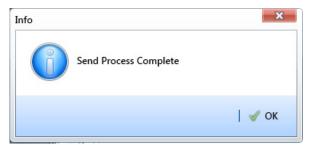


Figure 8-31. Send Process Complete

# Preparing a Route for Inspection GPS Fields

This section explains how to prepare and send a survey to the Allegro based on a route with inspection GPS fields. Facilities for inspection are also set up in the *Inspection* data entry grid with inspection GPS fields.

Including inspection GPS fields in a survey allows you to capture GPS location data for each facility inspection reading. These fields also allow you to verify inspection readings are taken at the correct location.

Information in this section applies to all PCS Axis modules. Examples are based on the CPDM module. Topics in this section include those in the following list:

- Adding Inspection GPS Fields in the Inspection Grid (page 407)
- Editing a Route with Facilities for Inspection (page 410)
- Sending a Survey to the Allegro Based on a Route (page 412)

### Adding Inspection GPS Fields in the Inspection Grid

The procedure in this section explains how to add inspection GPS fields in a layout theme and then apply the theme to an *Inspection* data entry grid. The procedure uses the *Test Point Inspection* data entry grid as an example.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-32).
 Select pipeline segments with facilities you plan to include in a route. Click Save to close the window.

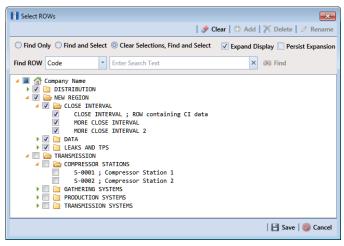


Figure 8-32. Select ROWs

2 Open the *Inspection* data entry grid for a facility type.

For example, click **Data Entry** > **Edit CPDM Data**. Click the **Test Point** button **Test Point**, then the **Inspection** tab **Inspection** to open the *Test Point Inspection* data entry grid (Figure 8-33).

	Modules Data Entry Edit CPDM Data ×		ns Tools Field Cor	mputer Help 🧯	Cathodic Prote	ection Data Ma	hager (Crow)	welcome John	Smith   🕑   🔀	
	Information Ins	pection Main	tenance	Selected ROWs	[PCS] Test Point Inspe	ections 🛛 [PCS] RC	W Code and Milepos	at 🔯 Opt	ions 🦨 Custo	ы
	Test Point	Rectifier	) Foreign Bond )	Galvanic Anode	Tank				Base	d
	SS Find						🕞 Build Survey	🕽 Add   🗡 Delete	😏 Refresh   😫	
	ROW Code and Pipe	Milepost	Inspection Date	Survey	Structure P/S (Volts)	Casing P/S (Volts)	Foreign P/S (Volts)	Insulator P/S (Volts)	Effective Date	
	T-1401	0.000	3/22/2006	2006 Annual Survey	-1.141					1
	T-1401	0.001	3/22/2006	2006 Annual Survey	-1.150					1
	T-1401	1.000	3/22/2006	2006 Annual Survey	-1.173		-0.428			
	T-1401	1.500	3/22/2006	2006 Annual Survey	-0.963		-1.410			
	T-1401	1.627	3/22/2006	2006 Annual Survey	-0.922	-0.298				
	T-1401	1.750	3/22/2006	2006 Annual Survey	-0.895	-0.412				
	T-1401	2.000	3/22/2006	2006 Annual Survey		-0.635				
	T-1401	2.250	3/22/2006	2006 Annual Survey	-1.091					
	T-1401	2.500	3/22/2006	2006 Annual Survey	-0.996		-0.739			
1	T-1401	3.000	3/22/2006	2006 Annual Survey	-0.717		-0.852			
	T-1401	3.218	3/22/2006	2006 Annual Survey	-1.492					
	T-1401	3.250	3/22/2006	2006 Annual Survey	-1.118					
	T-1401	3.500	3/22/2006	2006 Annual Survey	-0.694		-0.184			
	T-1401	4.000	3/22/2006	2006 Annual Survey	-0.686		-0.707			
	T-1401	5.000	3/22/2006	2006 Annual Survey	-1.116		-0.665			
	T-1401	5.275	3/22/2006	2006 Annual Survey	-1.451		-1.339			
	T-1401	6.000	3/22/2006	2006 Annual Survey	-1.024		-0.954			
	T-1401	7.000	3/22/2006	2006 Annual Survey	-1.094		-0.648			
	T-1401	8.000	3/22/2006	2006 Annual Survey	-0.831		-0.862			
	T-1401	8.500	3/22/2006	2006 Annual Survey	-1.020		-0.638			
	T-1401	8.717	3/22/2006	2006 Annual Survey	-1.080					
	T-1401	8.800	3/22/2006	2006 Annual Survey	-1.720					
	4									5

Figure 8-33. Test Point Inspection Data Entry Grid

**3** Click the **Customize** tab **A** customize to view the *Layouts* page (Figure 8-34, page 409).

PC	CS Axis				D <mark></mark> X
File	Modules Data Entry Reports / Graphs Tools Field Computer Hel	<u>ه</u> (	Cathodic Protection Data Manager (CPDM) w	elcome J	ohn Smith   🕺   🔀 Log Out
Q	Edit CPDM Data 🗙				
	Information Inspection Maintenance			\$	Options 📌 Customize
	Layouts: Test Point Inspection Save	e and	I Close   💾 Save   😋 Add   🏋 Delete   🖘 Revert   ۞ New Baseline   🚳	Cancel	E Layouts
	Select Layout Theme	_			🛚 Sorts
	[PCS] Test Point Inspections     Search For Field	*	ROW Code and Pipe	-	💡 Filters
	All Fields	<u> </u>	In Now Code and Pipe		📋 Forms
	ROW Permanent Information Fields     Test Point Facility Fields		Inspection Date Survey		🔀 Close
	Test Point Information Fields     Test Point Inspection Fields		Structure P/S		
	AC P/S Average P/S		Casing P/S		
	Casing IRF		Foreign P/S Inspection Elevation		
	Casing P/S Casing Status	-	Inspection GPS Accuracy		
	Compliance		Inspection GPS Difference		
Selected ROWs	Effective IR Correction Date     Effective Native Date		Inspection Longitude		
a B	Effective Native P/S		Effective Date		
lecte	Feet Above Criteria		Inspection Remarks		
Ň	Feet Above Criteria (IRF)     Feet Below Criteria		0	$\overline{\mathbf{O}}$	
	Feet Below Criteria (IRF)     Foreign IR (Foreign P/S - Foreign IRF)	- ۱			
	Foreign IRF				
	Inspection Date				
	Inspection Date (Date Only)				
	Inspection GPS Accuracy				
	Inspection Latitude				
	Inspection Longitude				
	Inspection Remarks				
	Insulator IRF				
	Insulator P/S Insulator Shunt Reading				
	Insulator Status	-			

Figure 8-34. Layouts

- 4 Select a data entry grid layout theme. Click the down arrow in **Select Layout Theme** and select a theme in the selection list.
- 5 Double-click the *Inspection Fields* category in the left pane of the window to view a list of fields available for selection. For example, double-click > Test Point Inspection Fields.
- 6 Add the following inspection GPS fields in the layout theme. To add a field, double-click a inspection GPS field in the left pane to move the field to the right pane. Add other fields as required. The layout theme includes all fields listed in the right pane.
  - Inspection Elevation
  - Inspection GPS Accuracy
  - Inspection GPS Difference
  - Inspection Latitude
  - Inspection Longitude

Click Save, then click the Options tab Options to open the options page (Figure 8-35).

Modules Data Entry Re		ield Computer Help	O Catl	odic Protec	tion Data Manager (CPL	M) w	Velcome John Smith   🕑   🔯
Edit CPDM Data 🗙							
Information Inspect	ion Maintenance						Options 🗲 Custo
Test Point Inspection							Apply S Ca
Based On							
Selected ROWs							
Route							
Schedule							
🗄 View						@ 📰 Gr	id 🔘 📮 Form 🔍 🛅 Grid And
Select Layout Theme	My TP Grid Layout_1		* s	ect Sort Theme	😨 [PCS] ROW Code and Milep	ost	-
Select Form Theme			* s	ort Dates	Oldest First O Newest First		
Options							
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Only include facilities Filter Options: All inspections tha All other filters	t meet the filter criteria to the most recent inspect	ion found within report ti	meframe			© N	lew 'And' Group   💷 New 'Or' G
Only include facilities Filter Options: All inspections tha Apply other filters The most recent in	t meet the filter criteria to the most recent inspect	ion found within report ti	meframe			O N	lew 'And' Group   💿 New 'Or G
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Only include facilities Filter Options: All inspections th Apply other filters The most recent in Filters Active Facilities on Inscrive Facilities on Instrive Facilities on Ins	t meet the filter criteria to the most recent inspect spection after the filter crit y d Facilities on Inactive RO between	ion found within report ti teria has been met	21			(2) N  	
Only include facilities Filter Options: All inspections the Apply other filters The most recent in Filters Co Active Facilities on Instrive Facilities an Relative Milepost is Inspection Date is b	t meet the filter criteria to the most recent inspect spection after the filter crit y d a d facilities on Inactive RO between etween	ion found within report ti teria has been met	21			© N 	
Only include facilities Filter Option: All appections the Apply other filters The most recent in Filters Active Facilities On Inactive	t meet the filter criteria to the most recent inspect spection after the filter crit y y d facilities on lacetive RO' between etween qual to	ion found within report ti teria has been met	21			© N	
Image: Second	t meet the filter criteria to the most recent inspect spection after the filter crit y dr facilities on Inactive ROP between etween qual to r is equal to	ion found within report ti teria has been met	an Tim and			© N	

Figure 8-35. Options

- 8 Apply the layout theme to the data entry grid. Click the down arrow in **Select Layout Theme** and select the theme with inspection GPS fields.
- 9 Click 💾 Apply.

PCS Axis saves and applies changes, then closes the options page and returns to the *Test Point Inspection* data entry grid.

**10** Click the **x** close icon to close the *Edit CPDM Data* window. Continue with the next section, *Editing a Route with Facilities for Inspection* (page 410).

#### Editing a Route with Facilities for Inspection

Complete the following steps to set up a route with facilities for inspection that include inspection GPS fields:

Select one or more pipeline segments in the Select ROWs window (Figure 8-36). Select pipeline segments with facilities you plan to include in the route. Click Save to close the window.

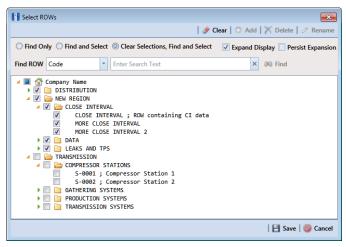


Figure 8-36. Select ROWs

- 2 Open the *Define Routes* window and select a route. Click **Data Entry** > **Define Routes**. Then click the down arrow in **Routes** and select a route in the selection list.
- 3 Click the down arrow in Facility Types and select a facility type theme. Or, selectAd Hoc Theme and then click the check box for one or more facility types.
- 4 Select which facilities to include in the route. To include all facilities, click **S Add All** in the *Facilities Available* grid.

To only include facilities you select, click the check box for each facility in the *Facilities Available* grid. Or double-click each facility.

**Note:** Selected facilities display in the *Facilities in Route* grid.

- **5** Arrange the survey order of facilities listed in the *Facilities in Route* grid as needed using any of the following methods:
  - To move a single grid row, select the row, then drag and drop it in a different location in the grid.

**NOTE:** A message displays when moving selected grid rows to confirm the new location in the grid (Figure 8-12, page 390).

• To move a group of consecutive grid rows, click the first row, press and hold the **Shift** key, then click the last row. Drag and drop selected rows in a different location in the grid.

- To move a group of non-consecutive grid rows, press and hold the **Ctrl** key, then click each row you want to select. Drag and drop selected rows in a different location in the grid.
- 6 Click **Save** to save changes. Then click the close icon **x** to close the *Define Routes* window.
- **7** Continue with the next section *Sending a Survey to the Allegro Based on a Route* (page 412).

## Sending a Survey to the Allegro Based on a Route

Information in this section explains how to send a survey to the Allegro based on a route with facilities that include inspection GPS fields. The process includes adding a prompts theme with prompts for inspection GPS fields. Prompts are data entry fields in an Allegro survey file that require survey data, such as GPS data for each facility inspection reading.

Complete the following steps:

- **1** Verify the Allegro is connected to your computer. If needed, refer to the *Allegro User Guide* for information about how to connect the device.
- Select one or more pipeline segments in the *Select ROWs* window (Figure 8-37).
   Select pipeline segments with facilities you plan to survey. Click Save to close the window.

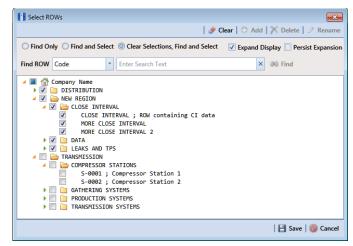


Figure 8-37. Select ROWs

**3** Click **Field Computer** > **Send** to open the *Field Computer Send* window (Figure 8-38).

Field Computer Send							🛛 🖪 Apply	Send Send
∇ (i) It appears that you have set	ome invalid opti	ons, please correct the follow	ng (1	1)				
	<ul> <li>PCS</li> <li>Ad Hoc Th</li> <li>Select All</li> </ul>	All Facility Types eme Ø Clear All	-	CPDM Test Point V Foreign Bond V Tank Rectifier V Galvanic Anode	VM Valve	ACM Atmospheric	ICM Coupon Probe Samples Inhibitor Inject	or LSM
🔢 View						, <u> </u>		
Select Prompt [PCS] Field Computer Promp	rt	Select L		Theme Computer Survey		lect Sort Theme [PCS] ROW Code ar	nd Milepost	*
Options								
Output File All Facility Types.dat Open Maintenance Items		<ul> <li>Send to Allegro</li> <li>Send to disk</li> </ul>		put Directory ect a file location				
V Tilters								

Figure 8-38. Field Computer Send

4 Click the **Customize** tab **Customize**, then the **Prompts** button **Prompts** to open the **Prompts** page (Figure 8-39).

PC	CS Axis	
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🔅 PCS Ax	is Welcome John Smith   🕺   🔀 Log Out
۹	Field Computer Send ×	🗲 Customize
	Prompts: Field Computer Send 🛛 😫 Save and Close	ave   🔿 Add   📉 Delete   🗠 Revert   🔅 New Baseline   🏐 Cancel 🔢 Prompts
	Select Prompt	1 2 3 4 5 6 7 8 Elayouts
	PCS] Field Computer Prompt for Route     Select Facility Type	1 2 3 4 5 6 7 8
	Test Point *	1 2 3 4 5 6 7 8
	Facility, Information and ROW Fields	🔀 Close
Selected ROWs 	ROW Permanent Information Fields     Test Point Exciling Fields	Code and Pipe       st       on Description
	Test Point Inspection Fields     Test Point Maintenance Fields     Test Point Maintenance Fields	nP/S or P/S tion Remarks

Figure 8-39. Prompts

5 Click the Add button to open the *New Prompt* dialog box (Figure 8-40).Required fields are identified with the icon and must be completed to continue.

•

Figure 8-40. New Prompt

6 Type a name for the theme in the field **Enter Theme Name** (Figure 8-41).

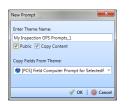


Figure 8-41. New Prompt

- 7 If you want to create a public theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the theme saves as a private theme.
- 8 If you want to copy fields from an existing theme, click the **Copy Content** check box to place a check mark inside the check box. Then click the down arrow in the field **Copy Fields From Theme** and select a theme in the selection list.

If you do not want to copy fields from an existing prompt theme, remove the check mark inside the *Copy Content* check box by clicking the check box.

- **9** Click **V OK** to save changes and return to the *Prompts* page.
- **10** Verify the name of the new theme displays in the **Select Prompt** field. If not, click the down arrow and select the theme in the selection list (Figure 8-42).
- **11** Click the down arrow in **Select Facility Type** and select a facility type in the selection list. For example, select *Test Point*.

PCS	Axis				- 0 <mark>- × -</mark>
File	Modules Data Entry Reports / Graphs Tools Field Computer Help	0	PCS Axis Weld	ome J	ohn Smith   🤨   🔀 Log Out
Q	Field Computer Send ×				
					📌 Customize
	Prompts: Field Computer Send 8	and Clo	ose   💾 Save   😋 Add   🏋 Delete   🗠 Revert   🔅 New Baseline   🚳 C	incel	B Prompts
	Select Prompt		12345678		E Layouts
	Wy Inspection GPS Prompts_1	*			▼ Sorts
	Select Facility Type Test Point		Pages • 12345678		Y Filters
					Close
	Facility, Information and ROW Fields				Close
Selected ROWs 	Search for Field.  A Diffield  Field  Field	•	ROW Code and Pipe		
	Inspection and Maintenance Fields				
	Search For Field ×		Сору		
	All Fields     Feet Point Inspection Fields     Test Point Maintenance Fields	•	Smuture I/S Casing P/S Foreign P/S Inspection Remarks Technician		
	Site String				

Figure 8-42. Prompts

**12** To add information prompts, follow these steps (Figure 8-42):

- **a** Double-click All Fields in *Facility, Information and ROW Fields* to view a list of fields available for selection.
- **b** Double-click one or more fields in the selection list to move fields to the right pane. All fields listed in the right pane are included in the prompt theme.
- **13** To add inspection GPS prompts, follow these steps:
  - a Double-click **All Fields** in *Inspection and Maintenance Fields*.
  - **b** Double-click the following inspection GPS fields to move the fields to the right pane:
    - Inspection Elevation
    - Inspection GPS Accuracy
    - Inspection GPS Difference
    - Inspection Latitude
    - Inspection Longitude

**NOTE:** If you want to remove information, inspection, or maintenance fields, double-click a field listed in the right pane to move it back to the left pane.

- **14** Complete the following steps to add site string prompts that help identify one facility from another when using the Allegro. Site string prompts are included with each facility and can be viewed in the Allegro *Site List* window.
  - a Click the Site String and then double-click All Fields in the left pane to view a list of fields available for selection (Figure 8-42, page 414).
  - b Double-click one or more fields in the left pane to move fields to the right pane. For example, double-click Facility ID and Facility Location. Click the Site String button again to close the pane.
- 15 If you want to add another page of prompts, click Copy and then double-click one or more fields as needed in the left pane of Inspection and Maintenance Fields. Information fields in *Facility, Information, and ROW Fields* automatically copy to each page of prompts (Figure 8-42, page 414).

#### 16 Click 💾 Save.

17 If you have multiple pages of prompts, clicking a page number icon displays prompts for the selected page. For example, clicking (2) displays prompts set up in page 2 as shown in the following example (Figure 8-43).

PC	S Axis		- 0 <b>X</b>
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🔅 PCS Axis Welco	ome John Smith   🧕	🖲 🛛 🔀 Log Out
٩	Field Computer Send X	<i></i>	Customize
	Prompts: Field Computer Send 🛛 🖁 Save and Close   🗄 Save   🔿 Add   🗡 Delete   🗠 Revert   🔅 New Baseline   🚳 Ca	ancel 🔡 Prompts	
	Select Prompt 1 2 3 4 5 6 7 8	E Layouts	
	Wy Inspection GPS Prompts_1 Select Facility Type Text Point Text Point	🛚 Sorts	
	Test Point	💡 Filters	
	Facility, Information and ROW Fields	🔀 Close	
	Search For Field ×		
Selected ROWs	All Fields     ROW Code and Pipe     Row Code and Pipe     Methods     Test Point Facility Fields     Code and Pipe     Methods     Location Description	•	
	Inspection and Maintenance Fields		
	Search for Field.	0	

Figure 8-43. Prompts

- **18** Click **Close** to return to the *Field Computer Send* window.
- **19** Click the **Route** option and select a route in the selection box. Then click **Apply** to update the grid (Figure 8-44).
- **20** Complete the following steps to select a prompt, layout, and sort theme:
  - **a** Click the down arrow in **Select Prompt** and select the prompt theme with inspection GPS fields.
  - **b** Click the down arrow in **Select Layout Theme** and select a layout theme in the selection list.
  - c Click the down arrow in **Select Sort Theme** and select a sort theme in the selection list.
- 21 If you want to rename the survey file, type a name in the field **Output File**.
- 22 Select Send to Allegro to send the survey file to the Allegro.
- **23** If the check box **Open Maintenance Items** is available for selection, click the check box if you want to include open maintenance records in the survey file.

**NOTE:** When the selected prompt theme includes maintenance prompts, the check box *Open Maintenance Items* is available for selection. It is disabled when maintenance prompts are not included in the currently selected prompt theme.

Field Com														
Baser     Selec     O Route	d On							f Cust						
Baser     Selec     O Route	d On	Field Computer Send     I ➡ Apply     Gene       1 ➡ Based On     I ➡ Apply     I ➡ I ➡ I ➡ I ➡ I ➡ I ➡ I ➡ I ➡ I ➡ I ➡												
<ul> <li>Selection</li> <li>Route</li> </ul>								pply   🖂 Send   📙 I						
Route	ted ROWs													
		My Route_14												
Scher		My Route_15												
Schedule     My Route_16     Import Exported List														
🔡 View														
Select Pro			Select Layout Theme				Sort Theme							
My Inspection GPS Prompts_2			<ul> <li>PCS] Field Computer Survey</li> </ul>			- 💎 (PC	CS] Route Order							
Option	ons													
Output File			Send to Allegro	Output Directory										
	My Route_15.dat		Send to disk	C:\Users\John.S	Smith\Documents									
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Poute Name and		ROW Code and Pipe	Milepost	Relative Milepost	Facility ID	Address	Location Description							
	Route_15 - 1	T-1401	0.001	0.001	R-200		Bethel Comp. Station							
	Route_15 - 2	T-1401	8.800	8.800	R-201	_	Big Brown Plant							
	Route_15 - 3	T-1401	21.919	21.919	R-202	_	Reed Station							
4 My	Route_15 - 4	T-1401	34.935	34.935	R-204		Co Line Rd							

Figure 8-44. Field Computer Send

**24** If you want to filter records in the grid and in the route sent to the Allegro, complete the following steps.

**IMPORTANT:** Filter settings in *Field Computer Send* apply only to the current session and are not saved. See *Working with Themes and Filter Groups* (page 421) for information about saving filter settings in a theme.

a Click the Filters tab to open the *Filters* panel (Figure 8-44).

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	Bethel Comp. Station							1 2 3
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Figure 8-45. Filters

- Select one or more options in *Filters*. For example, click Currently Active
   Facilities Only to only include active facilities in the grid and in the route sent to the Allegro (Figure 8-45).
- **c** If you want to add a new AND or OR filter group, continue with one of the following steps. Otherwise continue with **step 27** (page 420).
  - To add a new AND filter group continue with step 25 (page 404).
  - To add a new OR filter group continue with **step 26** (page 405).
- **25** If you want to add a new AND filter group, complete the following steps. With an AND filter group, PCS Axis includes a subset of records that meet *all* filter conditions defined for the filter group. Records are filtered in the grid and in the route sent to the Allegro (Figure 8-46).
  - a Click () New 'And' Group to open the filter properties group box.
  - **b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.

• To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required settings.

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🔢 View							
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Content Inspection Date	ROW Code and Pipe T-1401	Milepost 8	Relative Milepost	R-200		Bethel Comp. Station	

Figure 8-46. New 'And' Filter Group

- **26** If you want to add a new OR filter group, complete the following steps. With an OR filter group, PCS Axis includes a subset of records that meet *any* filter condition defined for the filter group. Records are filtered in the grid and in the route sent to the Allegro (Figure 8-47):
  - a Click () New 'Or' Group to open a filter properties group box.
  - **b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.

• To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required settings.

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My Inspection GPS Pr	ompts_2	- 😵	[PCS] Field Computer S	Survey	- 😒 (F	PCS] Route Order	
Options							
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My Route 15.dat		Send to disk	C:\Users\John.	Smith\Documents			
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Figure 8-47. New 'Or' Filter Group

- 27 Click the **Filters** tab to close the *Filters* panel. Then click **Apply** to update the grid.
- **28** Click **Send** to send the survey file to the Allegro.
- **29** Click **V OK** when the message *Send Process Complete* displays (Figure 8-48). PCS Axis sends the survey file to the *PSData* folder on the Allegro.

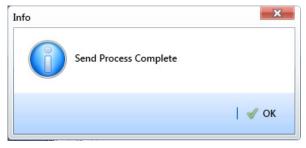


Figure 8-48. Send Process Complete

## Working with Themes and Filter Groups

A theme is a group of named settings saved for later use, such as a grid layout or sort theme. Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

Several installed themes are provided with the PCS Axis software installation. PCS Axis installed themes are public themes available to all PCS Axis users. These themes are identified with a globe icon and PCS in brackets [PCS], such as **(PCS) Route Grid**.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

A filter group is a named set of one or more filters that affect the data output in the *Define Routes* grid and subsequently the route itself. PCS Axis provides two types of filter groups you can define. These include the AND and OR filter groups.

When you add a filter group, you define filter conditions that determine which records to include or exclude in the *Define Routes* grid and the route. Adding an AND filter group produces a subset of records that meet *all* filter conditions. Adding an OR filter group produces a subset of records that meet *any* filter condition. When you apply a filter group, PCS Axis processes filters in descending order beginning with the filter at the top of the group.

The following sections describe how to add a layout theme, sort theme, and one or more optional filter groups. Topics include those in the following list:

- Working with a Layout Theme
- Working with a Sort Theme (page 430)
- Adding an AND Filter Group (page 438)
- Adding an OR Filter Group (page 441)
- Editing and Arranging Filters and Filter Groups (page 444)

## Working with a Layout Theme

A layout theme is a named set of fields that are present when working in the route grid. A layout theme also determines which fields are included when printing a route.

Two types of layout themes are available for use. They include *installed* and *addition* layout themes. An installed layout theme is one that has been installed during the PCS Axis software installation, such as *[PCS] Route Grid*. A layout theme addition is one that you create.

Topics in this section explain how to work with a layout theme and include those in the following list:

- Editing an Installed Layout Theme
- Adding a Layout Theme Addition (page 425)
- Editing a Layout Theme Addition (page 427)

#### Editing an Installed Layout Theme

An installed layout theme includes [PCS] in the name of the theme, such as **S** [**PCS**] **Route Grid**. A layout theme determines which fields are present when viewing or printing a route. The procedure in this section explains how to complete the following tasks to edit a PCS Axis installed layout theme:

- add fields in an installed layout theme
- remove fields in an installed layout theme
- revert an installed layout theme

To edit a PCS Axis installed layout theme, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-49).
 Click Save to close the window.

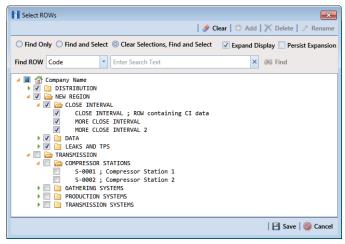
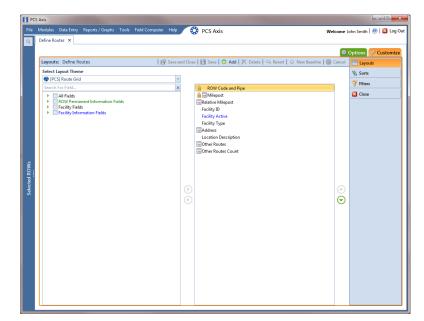


Figure 8-49. Select ROWs

2 Click **Data Entry** > **Define Routes** to open the *Define Routes* window. Click the down arrow in the **Routes** field and select a route in the list (Figure 8-50).

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Figure 8-50. Define Routes



**3** Click the **Customize** tab **Customize** to view the Layouts page (Figure 8-51).

Figure 8-51. Layouts

- 4 Select a PCS Axis installed layout theme. Click the down arrow in **Select Layout Theme** and select a theme in the selection list, such as **[PCS] Route Grid**.
- 5 Click the toggle arrow b for a field category in the left pane to view a list of fields available for selection, such as All Fields.
- 6 Click the check box for each field you want to include in the theme. Then click the top arrow button ➡ to move selected fields to the right pane. The theme includes all fields listed in the right pane.

**NOTE:** Double-clicking a field in the left pane also moves it to the right pane.

- 7 To remove fields in an installed layout theme:
  - Select one or more fields listed in the right pane, then click the bottom arrow button .

**NOTE:** Double-clicking a field in the right pane also moves it back to the left pane. Fields with a lock icon are required and cannot be removed from the theme, such as **Milepost**.

- 8 Click **B** Save to save changes.
- **9** To revert an installed theme and restore settings prior to editing, click **Gevert**, then click **Yes** when the *Confirm Revert* message displays.
- **10** Click **Save and Close** to save changes and return to the *Define Routes* window.

#### Adding a Layout Theme Addition

Complete the following steps to add a layout theme addition:

Select one or more pipeline segments in the Select ROWs window (Figure 8-52).
 Click Save to close the window.

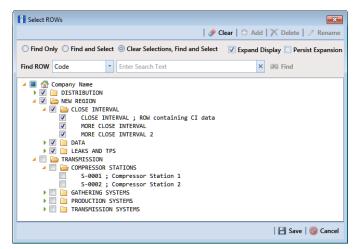


Figure 8-52. Select ROWs

- 2 Click Data Entry > Define Routes to open the Define Routes window. Click the down arrow in the Routes field and select a route in the selection list (Figure 8-50, page 423).
- **3** Click the **Customize** tab **Customize** to view the Layouts page (Figure 8-51).
- 4 Click 🛟 Add to open the New Layout Theme dialog box (Figure 8-53).

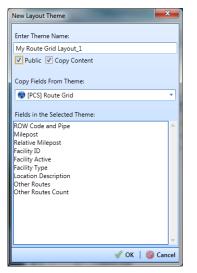


Figure 8-53. New Layout Theme

- 5 Type a name for the theme in the field **Enter Theme Name**.
- 6 Select the **Public** check box if you want the new theme available to all PCS Axis users. When a theme is not public, it is a private theme available only to the user who creates it.

**NOTE:** Creating public themes is a function available only to users assigned the SysAdmin user role. Private themes can be created by users assigned the User, Read Only, or SysAdmin user role. See *System Security* (page 855) for more information.

- 7 Select a layout theme with fields you want to copy to the new layout theme. Click the Copy Content check box and then click the down arrow in Copy Fields From Theme and select a theme in the selection list.
- 8 Click **V** OK to save changes and return to the *Layouts* page.
- **9** Verify the name of the new layout theme displays in the field *Select Layout Theme*. If not, click the down arrow in **Select Layout Theme** and select the new theme in the selection list.
- **10** Add and remove fields in the new layout theme as required. If needed, refer to *Editing a Layout Theme Addition* (page 427). When you finish, click established as a set of the set of
- **11** To apply the new layout theme in the *Define Routes* grid, follow these steps:
  - a Click the **Options** tab Options to open the options page (Figure 8-54).

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Figure 8-54. Options

- **b** Click the down arrow in **Select Layout Theme** and select the new layout theme in the selection list.
- c Click 💾 Apply to apply changes and return to the grid in *Define Routes*.

**NOTE:** Clicking **O Cancel** allows you to close the *Options* page without saving changes.

#### Editing a Layout Theme Addition

Information in this section explains how to perform the following tasks when working with a layout theme addition:

- add or remove fields in a layout theme addition
- revert a layout theme addition
- create a new baseline layout theme addition
- delete a layout theme addition

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-55).
 Click Save to close the window.

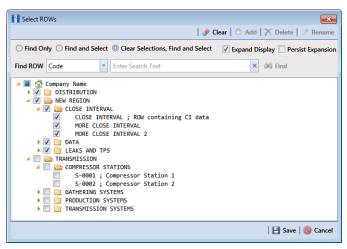


Figure 8-55. Select ROWs

- 2 Click Data Entry > Define Routes to open the Define Routes window. Click the down arrow in the Routes field and select a route in the selection list (Figure 8-50, page 423).
- **3** Click the **Customize** tab **Customize** to view the *Layouts* page (Figure 8-51, page 424).
- 4 Click the down arrow in **Select Layout Theme** and select a layout theme in the selection list.
- **5** To add fields in a layout theme addition:
  - a Click the toggle arrow ▶ for a field category in the left pane to view a list of fields available for selection, such as ▶ All Fields.
  - Click the check box for each field you want to include in the theme. Then click the top arrow button is to move selected fields to the right pane. The theme includes all fields listed in the right pane.

**NOTE:** Double-clicking a field in the left pane also moves it to the right pane.

**c** Click **B** Save to save changes.

- 6 To remove fields in a layout theme addition:
  - Select one or more fields listed in the right pane of the window, then click the bottom arrow button <.

To multi-select fields in the right pane, press the *Ctrl* key when selecting fields in non-consecutive order; or press the *Shift* key when selecting fields in consecutive order.

7 Click **Save** to save changes. The layout theme includes all fields listed in the right pane (Figure 8-56).

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Figure 8-56. Layouts

- 8 To revert a layout theme addition and restore settings prior to editing, click **Revert**, then click **Yes** when the *Confirm Revert* message displays.
- 9 To save current settings as new baseline settings, click **Wew Baseline**. When future changes are made and then reverted, PCS Axis restores the theme with baseline settings.
- **10** To delete a layout theme addition:
  - **a** Click the down arrow in **Select Layout Theme** and select a layout theme addition.
  - **b** Click  $\mathbf{X}$  **Delete**, then click **Yes** when the *Confirm Delete* message displays.
- **11** Click **Close** to close the *Layouts* page and return to the *Define Routes* window.

### Working with a Sort Theme

A sort theme is a named set of one or more fields that indicate the sorting order of grid rows in the route grid. A sort theme also determines the sorting order when printing a route.

Two types of sort themes are available for use. They include *installed* and *addition* sort themes. An installed sort theme is one that has been installed during the PCS Axis software installation, such as *[PCS]* Address, *[PCS]* Facility *ID*, and *[PCS]* ROW Code and *Milepost*. A sort theme addition is one that you create.

Topics in this section explain how to work with a sort theme and include those in the following list:

- Editing an Installed Sort Theme
- Adding a Sort Theme Addition (page 432)
- Editing a Sort Theme Addition (page 435)

### Editing an Installed Sort Theme

An installed sort theme includes [PCS] in the name of the theme, such as **(***PCS***)** *Facility ID*. The procedure in this section explains how to complete the following tasks to edit an installed layout theme:

- add fields in an installed sort theme
- remove fields in an installed sort theme
- revert an installed sort theme

To edit an installed sort theme, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-57).
 Click Save to close the window.

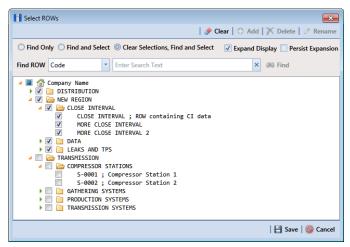


Figure 8-57. Select ROWs

- 2 Click Data Entry > Define Routes to open the *Define Routes* window. Click the down arrow in the Routes field and select a route in the selection list (Figure 8-50, page 423).
- 3 Click the **Customize** tab *F* **Customize**, then the **Sorts** button **Sorts** to open the *Sorts* page (Figure 8-58, page 432).
- 4 Click the down arrow in **Select Sort Theme** and select a PCS Axis installed sort theme, such as **(PCS) Facility ID**.
- 5 Click the toggle arrow b for a field category in the left pane to view a list of fields available for selection, such as All Fields.
- 6 Click the check box for each field you want to include in the theme. Then click the top arrow button ➡ to move selected fields to the right pane. The theme includes all fields listed in the right pane.

**NOTE:** Double-clicking a field in the left pane also moves it to the right pane.

- 7 Select a sort method for each field listed in the right pane. To sort grid rows in ascending order, click the toggle button to select ASC ASC . To sort in descending order, click the toggle button to select DESC DESC.
- 8 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.
- 9 Click 💾 Save.

					Options 🥜 Custo
Sorts: Define Routes		🛛 🔐 Save and Close 🛛 💾 Sa	ave 🛛 🔿 Add 🛛 📉 Delete 🛛 🗠 Ri	evert 🛛 🚳 Cancel	📰 Layouts
Select Sort Theme					Sorts
[PCS] ROW Code and Milepost     Search For Field	*	ROW Code			Tilters
All Fields	<u>^</u>	Milepost	ASC	_	Close
ROW Permanent Information Fields		Pipe	ASC		
Facility Fields     Facility Information Fields		RFID	ASC		
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	$\overline{\mathbf{C}}$	)		$\overline{\mathbf{O}}$	

Figure 8-58. Sorts

- **10** To apply the sort theme in the grid, follow these steps:
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click the down arrow in **Select Sort Theme** and select the sort theme in the selection list.
  - c Click e Apply to apply changes and return to the grid in *Define Routes*.

**NOTE:** Clicking **O Cancel** allows you to close the *Options* page without saving changes.

#### Adding a Sort Theme Addition

Complete the following steps to add a sort theme addition:

Select one or more pipeline segments in the Select ROWs window (Figure 8-59).
 Click Save to close the window.

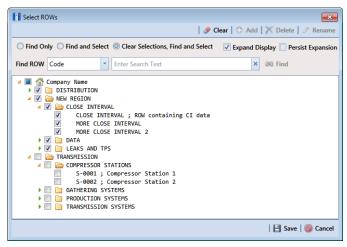


Figure 8-59. Select ROWs

- 2 Click Data Entry > Define Routes to open the Define Routes window. Click the down arrow in the Routes field and select a route in the selection list (Figure 8-50, page 423).
- 3 Click the **Customize** tab *F* **Customize**, then the **Sorts** button **<sup>™</sup> Sorts** to open the *Sorts* page (Figure 8-58, page 432).
- 4 Click C Add to open the New Sort Layout dialog box (Figure 8-60).

New Sort Layout	X
Enter Theme Name:	
My Sorting Theme_1	
Public Copy Content	
Copy Fields From Theme:	
😵 [PCS] Address	•
Fields in the Selected Theme: ROW Code	
Milepost RFID	
Pipe	
L	💞 OK   🔞 Cancel

Figure 8-60. New Sort Layout

5 Type a name for the theme in the field **Enter Theme Name**.

6 Select the **Public** check box if you want the new theme available to all PCS Axis users. When a theme is not public, it is a private theme available only to the user who creates it.

**NOTE:** Creating public themes is a function available only to users assigned the SysAdmin user role. Private themes can be created by users assigned the User, Read Only, or SysAdmin user role. See *System Security* (page 855) for more information.

- 7 Select a layout theme with fields you want to copy to the new layout theme. Click the Copy Content check box and then click the down arrow in Copy Fields From Theme and select a theme in the selection list.
- 8 Click **V** OK to save changes and return to the Sorts page.
- **9** Verify the name of the new sort theme displays in the field *Select Sort Theme*. If not, click the down arrow in **Select Sort Theme** and select the new theme in the selection list (Figure 8-61, page 435).
- **10** Add and remove fields in the new theme as required. If needed, refer to *Editing a Layout Theme Addition* (page 427).
- **11** Select a sorting method for each field listed in the right pane. To sort grid records in ascending order, click the toggle button to select **ASC ASC**. To sort in descending order, click the toggle button to select **DESC**.
- 12 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.
- **13** Click **B** Save to save changes.
- **14** To apply the sort theme in the grid, follow these steps:
  - a Click the **Options** tab Options to open the options page (Figure 8-61).

Select Layout Theme My Route Grid Layout 1 Select Sort Theme My Route Grid Layout 1 Select Sort Theme My Route Sorting Theme 1  For Sorting Theme For Sorting Theme 1  For Sorti	Define Routes ×		OCS Axis		
View  Select Layout Theme My Route Grid Layout, Select Sort Theme My Routes Sorting Theme, Ny				0	
Select Layout Theme  My Route Grid Layout 1 Select Sort Theme My Route Sorting Theme, 1 Select Sort Theme My Route Sort Theme My R	Define Routes				Apply 🔞 Car
Select Layout Theme  My Route Grid Layout 1 Select Sort Theme My Route Sorting Theme, 1 Select Sort Theme My Route Sort Theme My R	10 Manu				
PICS Address     PICS Address     PICS Facility ID     New 'OF     PICS Facility ID		rid Lavout 1	🔹 Calcat Cast Thomas 🐨 M	y Routes Sorting Theme_1	
Active Facilities on Inactive ROWs     Active Facilities on Inactive ROWs	Select Layout Theme			CS] Address	
COSTROW Code and Milegost     Active Facilities only     Active Facilities on Inactive ROWs     Active Facilities on Inactive ROWs	Y Filters				New 'Or' G
Active Facilities Only     Active Facilities Only     Inactive Facilities and Facilities on Inactive ROWs	(				
Inactive Facilities on Inactive ROWs					•
		1	(STM	y koules solung mene_i	
Kelative Milepost is between		n Inactive ROWs		4	
	inclutive initepost is between		py and		

Figure 8-61. Options

- **b** Click the down arrow in **Select Sort Theme** and select the sort theme in the selection list.
- c Click 💾 Apply to apply changes and return to the grid in *Define Routes*.

**NOTE:** Clicking **O Cancel** allows you to close the *Options* page without saving changes.

#### Editing a Sort Theme Addition

The following procedure explains how to perform the following tasks to edit a sort theme addition:

- add or remove one or more sort fields
- revert a sort theme addition
- delete a sort theme addition

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-62).
 Click Save to close the window.

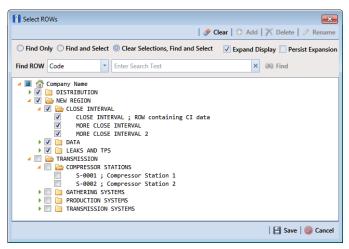


Figure 8-62. Select ROWs

- 2 Click Data Entry > Define Routes to open the *Define Routes* window. Click the down arrow in the Routes field and select a route in the selection list (Figure 8-50, page 423).
- 3 Click the **Customize** tab **Customize**, then the **Sorts** button **Sorts** to open the *Sorts* page (Figure 8-63).

Define Routes ×			ave   🗘 Add   🗙 Delete   👒 Re		Options & Customi:
Solits: Define Notices Select Sort Theme @ [PCS] ROW Code and Milepost Search For Field	×	ROW Code		Vert   @ Cancel	Sorts
<ul> <li>All Fields</li> <li>COV Permanent Information Fields</li> <li>Facility Fields</li> <li>Facility Information Fields</li> </ul>	¢		ACC	©	Close

Figure 8-63. Sorts

- 4 Click the down arrow in **Select Sort Theme** and select a sort theme addition.
- **5** To add fields and select a sort order:
  - a Click the toggle arrow ▶ for a field category in the left pane to view a list of fields available for selection, such as ▶ All Fields.

Click the check box for each field you want to include in the theme. Then click the top arrow button is to move selected fields to the right pane. The theme includes all fields listed in the right pane.

**NOTE:** Double-clicking a field in the left pane also moves it to the right pane.

- c Select a sorting method for each field listed in the right pane. To sort grid rows in ascending order, click the toggle button to select **ASC**. To sort in descending order, click the toggle button to select **DESC**.
- **d** To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.
- e Click 💾 Save to save changes.
- **6** To remove fields in the sort theme addition:
  - Select one or more fields listed in the right pane of the window, then click the bottom arrow button (). Click Save to save changes. The sort theme includes all fields listed in the right pane.

To multi-select fields in the right pane, press the *Ctrl* key when selecting fields in non-consecutive order; or press the *Shift* key when selecting fields in consecutive order.

- 7 To revert a sort theme addition and restore settings prior to editing:
  - Click 🔄 **Revert**, then click **Yes** when the *Confirm Revert* message displays.
- **8** To delete a sort theme addition:
  - a Click the down arrow in Select Sort Theme and select a sort theme addition.
  - **b** Click  $\mathbf{X}$  **Delete**, then click **Yes** when the *Confirm Delete* message displays.
- **9** To apply a sort theme addition in the grid, follow these steps:
  - a Click the **Options** tab **Options** to open the options page (Figure 8-61, page 435).
  - **b** Click the down arrow in **Select Sort Theme** and select the sort theme in the selection list.

c Click 💾 Apply to apply changes and return to the grid in *Define Routes*.

**NOTE:** Clicking **O Cancel** allows you to close the *Options* page without saving changes.

### Adding an AND Filter Group

An AND filter group is a named set of one or more filters that affect the data output in a route selected in *Define Routes*. Adding an AND filter group produces a subset of records that meet *all* filter conditions. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an AND filter group, follow these steps:

 Select one or more pipeline segments in the Select ROWs window (Figure 8-64). Click Save to close the window.

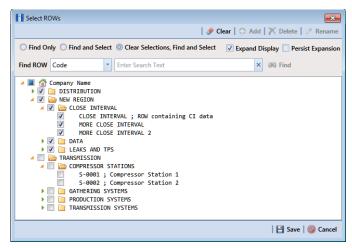


Figure 8-64. Select ROWs

- 2 Click Data Entry > Define Routes to open the *Define Routes* window. Then click the down arrow in Routes and select a route in the selection list (Figure 8-50, page 423).
- 3 Click the **Customize** tab **Customize**, then the **Filters** button **Filters** to open the *Filters* page.
- 4 Click () New 'And' Group to open a filter properties group box (Figure 8-65).

- 5 Type a name for the filter group in the field **Filter Group Caption**.
- **6** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

			( <b>\$</b>	Options 🥜 Cus
Filters: Define Routes			💾 Save and Close   💾 Save   🗠 Revert   🚳 Cancel	📰 Layouts
			New 'And' Group     New 'Or' Group	🛚 Sorts
Filter Group Captio			o   X	Y Filters
Active Facilities Or	y .			🔀 Close
// Inactive Facilities a	d Facilities on Inactive ROWs			
Relative Milepost I	between [ ] and [ ]			
			4)	
Filter Group Captio			<b>0</b>   <b>X</b>   <b>0</b>	
Account Contain	[ ]			
E Filter Is Always	n		×	
Account	- Contains	-	/	
Enter Custom Filte	Caption			
			/	

Figure 8-65. Filters

- 7 If you want the filter to remain on for all sessions when working with the selected route, click the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- 8 Type a name for the filter in the field **Enter Custom Filter Caption**.
- **9** If you want to set up additional filter criteria for the filter group:
  - a Click **C** Add to open another filter properties group box. Then click the *P* edit icon to display selection fields.
  - **b** Type a name for the filter in the field **Enter Custom Filter Caption**. Repeat **step 6** through **step 8** to set up filter criteria.
- **10** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle to change the cursor to a vertical resize cursor **1**.

**b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

#### 11 Click 💾 Save.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **12** To apply one or more filters to the selected route and the *Define Routes* grid (Figure 8-66):
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click the check box for each filter you want to apply. Then click **Apply** to save changes and return to the *Define Routes* grid.

PCS			
	Modules Data Entry Reports / Graphs Tools Fit Define Routes ×	ld Computer Help 🔅 PCS Axis	Welcome John Smith   😣   🔀 Log Out
۹.	Denne Routes X		Options of Customize
	Define Routes		Apply   🚱 Cancel
	570		
	Select Layout Theme Select Layout_1	Select Sort Theme 💿 [PCS] ROW Code and Mile	post 🔹
	🍸 Filters		💿 New 'And' Group   🔘 New 'Or' Group
	۵		•
	Active Facilities Only Active Facilities Only Active Facilities and Facilities on Inactive ROV Relative Milepost is between	s Ø and	
Ws	0		•
Selected ROWs	<ul> <li>Facility ID is missing</li> <li>Address is missing</li> </ul>	,	
Selec			
			*

Figure 8-66. Options

### Adding an OR Filter Group

An OR filter group is a named set of one or more filters that affect the data output of a route selected in *Define Routes*. Adding an OR filter group produces a subset of records that meet any filter condition. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an OR filter group, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-67).
 Click Save to close the window.

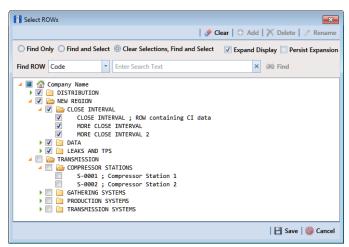


Figure 8-67. Select ROWs

- 2 Click Data Entry > Define Routes to open the *Define Routes* window. Then click the down arrow in Routes and select a route in the selection list (Figure 8-50, page 423).
- 3 Click the **Customize** tab **Customize**, then the **Filters** button **Filters** to open the *Filters* page.

				85 (	Options 👉 Cust
Filters: Define Routes			🛛 😫 Save and Close 🛛 🗄 Save 🗠 Revi		Layouts
			New 'And' Group		Sorts
	]				T Filters
Filter Group Caption     Active Facilities Only				•   X	Close
Inactive Facilities and Faci	ities on Insetius POM/s				
Relative Milepost Is between the second s					
Relative Milepost is betwe	en ( jand ( j			]	
Include records that match	any of these conditions			• X	
Account Contains [	1				
	1				
Filter Is Always On				×	
# Account	<ul> <li>Contains</li> </ul>	*			
Enter Custom Filter Captio	n				

4 Click **(())** New 'Or' Group to open a filter properties group box (Figure 8-68).

Figure 8-68. Filters

- **5** Type a name for the filter group in the field **Include records that match any of these conditions**.
- **6** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- 7 If you want the filter to remain on for all sessions when working with the selected route, click the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- 8 Type a name for the filter in the field Enter Custom Filter Caption.
- **9** If you want to set up additional filter criteria for the filter group:
  - a Click **C** Add to open another filter properties group box. Then click the *P* edit icon to display filter selection fields.
  - **b** Repeat **step 5** through **step 8step 8** to set up the filter group.

- **10** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle to change the cursor to a vertical resize cursor  $\hat{\mathbf{I}}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

#### 11 Click 💾 Save.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **12** To apply one or more filters to the selected route and the *Define Routes* grid (Figure 8-69):
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click the check box for each filter you want to apply. Then click **Apply** to save changes and return to the *Define Routes* grid.

PCS		
	Aodules Data Entry Reports / Graphs Tools Field Computer Help 🛛 💮 PCS Axis	Welcome John Smith   📵   🔀 Log
Q	Define Routes ×	
		🔅 Options 🗲 Customiz
	Define Routes	💾 Apply   🚳 Cancel
	🔀 View	
	Select Layout Theme 🗣 My Route Grid Layout_1	*
	Y Filters	① New 'And' Group 0 New 'Or' Group
		•
	Active Facilities Only     Inactive Facilities on Inactive ROWs	
	Relative Milepost is between and a clinic soft in active rows	/
	Include records that match any of these conditions	0
	Address is missing     Facility ID is missing	
	V Facility ID is missing	

Figure 8-69. Options

### Editing and Arranging Filters and Filter Groups

PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group. Filter groups are processed similarly. Information in this section explains how to edit filter property settings and how to arrange filters and filter groups.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-70).
 Click Save to close the window.

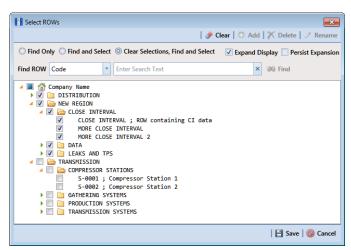


Figure 8-70. Select ROWs

- 2 Click **Data Entry** > **Define Routes** to open the *Define Routes* window. Then click the down arrow in **Routes** and select a route in the selection list (Figure 8-50, page 423).
- 3 Click the **Customize** tab **Customize**, then the **Filters** button **Filters** to open the *Filters* page.

4 Click the edit icon 🥜 to display a filter's property settings (Figure 8-71).

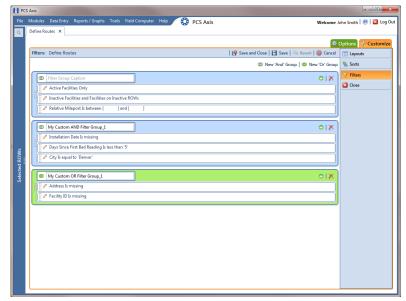


Figure 8-71. Filters

- 5 To delete a filter in a filter group, click the filter's X delete button. Then click
   ✓ OK when the *Delete* message displays.
- 6 To rename a filter, type a description in the filter's name field.
- **7** To change filter criteria, use filter selection fields to select a PCS Axis field, operator, and one or more filter conditions.
- 8 To enable a filter for all sessions of the data entry grid, click the check box Filter is Always On to place a check mark inside the check box. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- 9 Click the 🔀 close button to close the filter's property settings group box.

- **10** To move a filter to a different position in a filter group, or to move a filter group to a different position, follow these steps:
  - **a** Point the mouse at the handle of a filter or filter group to display a vertical resize cursor  $\hat{\mathbf{I}}$ .
  - **b** Drag and drop the filter or filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

- 11 Click 💾 Save.
- **12** To apply filter changes to the selected route and the *Define Routes* grid:
  - a Click the **Options** tab **Options** to open the options page.
  - **b** Click **H Apply** to apply filter changes and return to the *Define Routes* grid.

### Previewing a Route

Information in this section describes how to view, print, and export a route with selected or available facilities.

Selected facilities are those included in the route. These facilities are also listed in the *Facilities in Route* grid of the *Define Routes* window (Figure 8-73, page 448). Available facilities are linked to the current ROW selection, but are *not* included in the route. Available facilities are listed in the *Facilities Available* grid of the *Define Routes* window.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 8-72).
 Click Save to close the window.

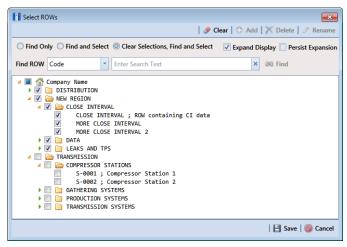


Figure 8-72. Select ROWs

- 2 Click **Data Entry** > **Define Routes** to open the *Define Routes* window. Click the down arrow in the **Routes** field and select a route in the selection list.
- **3** To view selected facilities in a *Print Preview* window (Figure 8-73), click the **Selected Facilities** button in the *Facilities in Route* grid.

To view available facilities in a Print Preview window, click the Available Facilities button in the Facilities Available grid.

Clicking Selected Facilities allows you to view a report with facilities included in the route. Clicking Available Facilities opens a report with facilities listed in the Facilities Available grid.

- 4 Click the Print button to open the *Print* dialog box and select a printer to print the route. Or, click the Quick Print button to print the route using the default printer set up in Windows.
- 5 If you want to export the route, click the **Export Document** button and select any of the following file formats: PDF, HTML, MHT, RTF, XLS, XLSX, CSV, TXT, IMG, and XPS.

6 Click the X **Close** button to close the *Print Preview* window and return to the *Define Routes* window.

				Fa	My Pipeline Com cilities in Route "My					
				10	childes in Route Twy	NUGIC_14				
ROW Code									Location	
and Pipe	Milepost	Relative Milepost	Facility ID	RFID	Serial Number	Facility Active	Facility Type	Address	Description	
T-1401	73.180	73.180				True	Test Point		Lake Creek Pint	
T-1401	73.179	73.179				True	TP		Rectifier F-73	
T-1401	72.863	72.863				True	TP		Plant Road	
T-1401	71.500	71.500				True	TP		PL Crossing	
T-1401	69.481	69.481				True	TP		Texas 6 & RR	
T-1401	68.744	68.744				True	TP		Texas 164	
T-1401	68.700	68.700				True	TP		BV-F6	
T-1401	67.717	67.717				True	TP		Rectifier F-68	
T-1401	65.309	65.309				True	TP		County Road	- 12
T-1401	64.909	64.909				True	TP		County Road	
T-1401	63.327	63.327				True	TP		County Road	
T-1401 T-1401	61.610	61.610				True	TP		FM 939	
T-1401 T-1401	61.604	61.604				True	TP		Rectifier F-62	
T-1401	59.786	59.786				True	TP		Fence Row	
T-1401	59.486	59.486				True	TP			
T-1401	58.164	58.164				True	TP		Kirk Station	
T-1401	55.471	55.471				True	TP		County Road	
T-1401	54.631	54.631 53.757				True	TP		FM 339	
T-1401	53.757 51.532	53./5/				True	TP TP		County Road	
T-1401						True			County Road	
T-1401 T-1401	48.243 46.925	48.243 46.925				True	TP TP		FM 1245 Thelma Sta. (New)	
T-1401 T-1401	46.925	46.925				True	TP		Valve	
T-1401	46.615	46.915				True	TP		Valve Pvt. Rd. (Test Sta.)	
T-1401	40.015	46.515				True	TP		PVT. Kd. (Test Sta.) Rectifier F-47	
T-1401	45.088	45.088				True	TP		County Road	
T-1401	45.068	44.348				True	TP		FM 1633	
T-1401	43.144	43.144				True	TP		FM 2705	
T-1401	41.291	41.291				True	TP		County Road	
	41471	41.101					16		county house	
					Page 1/3					

Figure 8-73. Print Preview

# Exporting and Importing a Route

The following information explains how to import or export a defined route in either Microsoft Excel (.xls) or CSV (.csv) format. Facilities for inspection are based on the pipeline segment(s) you select in the *Select ROWs* window.

Complete the following steps:

1 Click the Select ROWs button P to open the Select ROWs window (Figure 8-74). Select one or more pipeline segments with facilities you want to include in the route. Click Save to close the window.

**NOTE:** A check mark inside a check box indicates a selection. To clear a selection, click the check box again to remove the check mark. A shaded check box indicates selection of some, not all, child folders, ROWs, and pipelines.

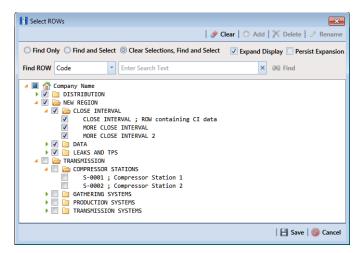


Figure 8-74. Select ROWs

2 Click **Data Entry** > **Define Routes** to open the *Define Routes* window. Click the down arrow in the **Routes** field and select a route in the list (Figure 8-75).

			2				Coptions 🖗	
Facility Types	noutes	loute1020		- 18	Save 🚺 😋 Add 🛛 🥜	Rename   🗡 Delete	🛛 🛞 Cancel 🛛 🕲 Imp	ort   🛃 Exp
PCS] All Facility Types		MyRoute11 MyRoute924					le Selected Facilities	🛷 Remove
O Ad Hoc Theme		Route1020		E Milepost	Facility ID	Facility Active	Facility Type	Address
Select All I Clear All	→ T-190 p			302		V	Test Point	
CPDM	T-1903		28.788	128.788			Test Point	
Test Point	T-1903	11	26,863	126.863		V	Test Point	
Rectifier	T-1903	1	25,873	125.873			Test Point	
Foreign Bond	T-1903	1	23,608	123,608		V	Test Point	
Galvanic Anode	T-1903	13	23.599	123.599			Foreign Bond	
Valve ACM	-							×
ACM								Row Count:
ACM Atmospheric ICM	Facilities		1				Available Facilitie	Row Count:
ACM Atmospheric Coupon Samples	Facilities	ROW Code and Pipe		Relative Mile	post Facility ID	Facility Activ	Available Facilitie	Row Count:
ACM Atmospheric Coupon Samples Probe	Facilities	ROW Code and Pipe RECTIFIER DEMO	1	1		ST 🗸	Available Facilitie Ve Facility Type Rectifier	Row Count:
ACM Atmospheric Coupon Samples	Facilities	ROW Code and Pipe RECTIFIER DEMO T-1400	1 0.000	1 0.000	post Facility ID	IST 🗸	Available Facilitie Facility Type Rectifier Test Point	Row Count:
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ACM Accoupters Coupon Sources Samples Probe ISM		ROW Code and Pipe RECTIFIER DEMO T-1400 T-1400 T-1400 T-1400	1 0.000 0.500 0.669 1.000	1 0.000 0.500 0.669 1.000	post Facility ID	IST V V V	Available Facilitie ve Facility Type     Rectifier     Test Point     Test     Test	Row Count:
ACM Accoupters Coupon Sources Samples Probe ISM	Facilities.	ROW Code and Pipe RECTIFIER DEMO T-1400 T-1400 T-1400 T-1400 T-1400	1 0.000 0.500 0.669 1.000 1.028	1 0.000 0.500 0.669 1.000 1.028	post Facility ID	IST V	Available Facilitie     Facility Type     Rectifier     Test Point     Test Point     Test Point     Test Point     Test Point     Test Point	Row Count:
ACM Accoupters Coupon Sources Samples Probe ISM		ROW Code and Pipe RECTIFIER DEMO T-1400 T-1400 T-1400 T-1400	1 0.000 0.500 0.669 1.000	1 0.000 0.500 0.669 1.000	post Facility ID	IST V V V	Available Facilitie     Facility Type     Rectifier     Test Point	Row Count:

Figure 8-75. Define Routes

If you have not defined any routes, refer to *Creating a Route* for instructions on creating a route.

- **3** To add a facility to the *Facilities in Route* grid, double-click the name of the facility in the *Facilities Available* grid.
- 4 Click 💾 Save to save the changes.
- **5** To export the route, click **Export**.
- 6 Click **Yes** in the *Confirm Export* dialog box (Figure 8-76).

Confirm Export		×
Are you sure you want to exp	ort the 'Route!	1020' route?
	🛛 🖋 Yes	No 🛛

Figure 8-76. Confirm Export

- **a** Choose an export file type. Click the down arrow in the **Save as type** field and select one of the following file types:
  - Excel files (\*.xlsx)
  - Text files (\*.csv)
- 7 When the file has been created, the Info dialog box displays (Figure 8-77). Click OK.

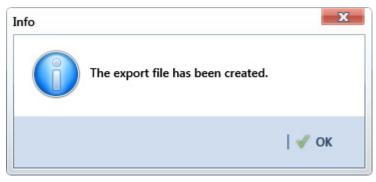


Figure 8-77. Export File Created

- 8 To import a saved file, follow these steps:
  - **a** Click the down arrow in the **Routes** field and select a route. This route will be replaced by the route to be imported.
  - b Click 🍟 Import.
- **9** Navigate to the file and click **Open**. The file is loaded in the *Facilities in a Route* grid, and replaces the route previously shown.

## Using a Route in PCS Axis

You can use a route in PCS Axis to perform any of the following tasks:

- View inspection records in a grid based on a route. Refer to *Viewing Records Based on a Schedule* (page 257).
- Transfer a survey to the Allegro Field PC based on a route. Refer to *Using Field Computer* (page 595).

# Notes

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# Using a Schedule

This chapter explains how to work with a schedule. The information is intended for users with *SysAdmin*, *User*, and *Read Only* permissions. Topics in this chapter include those in the following list:

- What is Scheduling?
- Scheduling Workflow (page 454)
- Setting Up Scheduling Criteria (page 455)
- Creating a Schedule (page 477)
- Working with a Schedule Definition (page 482)
- Using a Schedule in PCS Axis (page 488)

## What is Scheduling?

A schedule is a group of facilities to be surveyed for a specific time period, such as a month or year. The same schedule can include multiple facility types as well as facilities requiring bi-monthly, annual, and multi-year inspections, if those inspections are due in the same year. You can set up some schedules to include every facility that may be due for inspection and others to include one type of facility or survey period. PCS Axis dynamically generates a schedule with the most current information.

A schedule is different from a route, which assigns a specific order to facility inspections. A schedule is a list of facilities that are due to be inspected. A schedule is always ordered by due date and then as an option, sorted by facility ID, address, or route order. If you plan to create a schedule in route order, routes must be defined first (*Data Entry > Define Routes*).

A valuable feature of scheduling is the ability to transfer a survey based on a schedule to the Allegro Field PC. Once the survey is complete, the PCS Axis database is easily updated by transferring inspection data from the Allegro Field PC to PCS Axis.

# Scheduling Workflow

The process for working with a schedule includes the following tasks (Figure 9-1):

- Set up scheduling properties in *Edit Schedule Settings* (*Data Entry > Edit Schedule Settings*). Scheduling properties define the parameters PCS Axis uses to calculate facility inspection due dates.
- Create a schedule definition with one or more schedule types in *Define Schedules* (*Data Entry > Define Schedules*). A schedule type identifies which facility types to include in the schedule, and as an option, to include all facility types on a ROW that are due for an inspection.
- Use a schedule to view facility records in a data grid based on a schedule; transfer a survey based on a schedule to the Allegro Field PC; and view and print a data collection form based on a schedule.

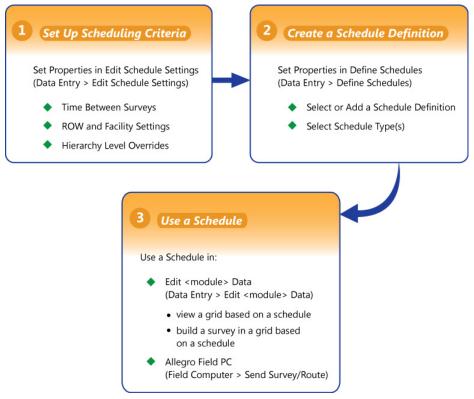


Figure 9-1. Scheduling Workflow

# Setting Up Scheduling Criteria

Setting up scheduling criteria begins with setting properties in the *Time Between Survey Settings* tab of *Edit Schedule Settings*. Settings apply system wide but can be overridden based on your company's survey policy. You can set up scheduling overrides by facility type, at the hierarchy level, or at the facility level.

Topics in this section explain how to set up scheduling properties using the following three tabs in *Edit Schedule Settings*:

- Time Between Survey Settings
- Schedule Type Settings (page 461)
- Hierarchy Level Overrides (page 472)

**NOTE:** Certain conventions are used in *Edit Schedule Settings* to indicate whether or not a scheduling property is set up with a baseline setting or an override. Bold text indicates an override. A setting inside parentheses indicates a baseline setting. Those with N/A (not applicable) indicate the setting does not apply to the scheduling property.

### Time Between Survey Settings

*Time Between Survey Settings* allows you to set up scheduling properties for a survey, such as an annual, periodic, 5 year, or 10 year survey. Setting up survey scheduling properties includes identifying the survey start month and year; grace period; delinquent time period; and the number of inspections required in a calendar year.

PCS Axis provides baseline settings based on government compliance regulations and industry standards. Baseline settings can be changed so that they match your company's survey policy.

To set up survey scheduling properties, follow these steps:

1 Click the Select ROWs button P to open the Select ROWs window (Figure 9-2, page 456). Select one or more pipeline segments by clicking the check box for each pipeline segment. Click Save to close the Select ROWs window.

**NOTE:** A check mark inside a check box indicates a selection. To clear a selection, click the check box again to remove the check mark. A shaded check box indicates selection of some, not all, child folders, ROWs, and pipelines.

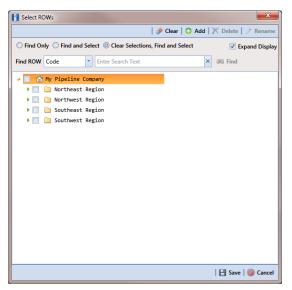


Figure 9-2. Select ROWs

2 Click Data Entry > Edit Schedule Settings > Time Between Survey Settings tab (Figure 9-3).

	Between urveys	Target Month	Target Year	Early Survey Limit Days	Multi-Year Survey Start	Grace Period	Grace Period Unit	Required Inspections Per Calendar Year	Minimum Percent Scheduled	Include Delinquent Within Days
r 1 Mc	onth	January	N/A		0 N/A	5	Days	12	N/A	10
2 Mo	nths	January	N/A	1	5 N/A	15	Days	6	N/A	10
3 Mo	nths	January	N/A	1	5 N/A	15	Days	4	N/A	10
4 Mo	nths	January	N/A		5 N/A	20	Days	3	N/A	10
6 Mo	nths	January	N/A	2	0 N/A	45	Days	2	N/A	15
12 M	onths	January	N/A	3	0 N / A	3	Months	1	N/A	30
2 Yea		January	1 2012,2014,	3			Months	N / A	50.00	
3 Yea		January	1 2012,2015,	3			Months	N / A	33.33	
4 Yea		January	1 2012,2016,	3			Months	N / A	25.00	
5 Yea		January	1 2010,2015,	3			Months	N/A	20.00	
6 Yea		January	1 2012,2018,	3			Months	N/A	16.67	
7 Yea		January	1 2007,2014,	3			Months	N/A	14.29	
8 Yea		January	1 2008,2016,	3			Months	N/A	12.50	
9 Yea		January	1 2009,2018,	Э			Months	N/A	11.11	
10 Ye	tars	January	1 2010,2020,	3	0 2000	3	Months	N/A	10.00	30

Figure 9-3. Time Between Survey Settings

**3** Refer to the following table (Table 9-1, page 457) for a description of survey property settings and how to set up each of these.

Property Name	Property Description
Time Between Survey	A list of surveys indicating the number of months or years between inspections. These fields cannot be changed.
	An arrow 🕨 or edit icon 🛃 displays beside the survey indicating a selection.
Target Month	<i>Target Month</i> is only used when <i>Targets</i> is selected as the scheduling method. Otherwise, property settings are ignored and do not need to be set up.
	<i>Target Month</i> refers to the first survey month. Options in the selection list are based on the <i>Time</i> <i>Between Survey</i> value.
	For example, if <i>Time Between Surveys</i> is 2 months and the <i>Target Month</i> (first survey month) is January, surveys are set at 2 month intervals beginning in January. The next survey is due in March, the next in May, and so on.
	To select a target month:
	<b>1</b> For a survey listed in <i>Time Between Surveys</i> , click the <i>Target Month</i> field to display a drop down arrow.
	2 Click the down arrow and select a target month in the selection list.

#### Table 9-1. Setting Up Time Between Survey Settings

Property Name	Property Description	
Target Year	<i>Target Year</i> is only used when <i>Targets</i> is selected as the scheduling method. Otherwise, property settings are ignored and do not need to be set u	
	Target Year is the year within the survey period when you want the first survey to take place. This field is only used for facilities with more than 12 months between surveys. PCS Axis calculates Target Year based on the current year and values in the fields Time Between Surveys and Multi- Year Survey Start.	
	The target year selection list includes a list of valid survey years with corresponding target year dates.	
	To select a target year:	
	<b>1</b> For a survey listed in <i>Time Between Surveys</i> , click the <i>Target Year</i> field to display a drop down arrow.	
	<b>2</b> Click the down arrow and select a target survey year.	
	If an appropriate survey year is not listed, type a different year in the field <i>Multi-Year Survey Start</i> to update items in the selection list.	
Grace Period, Grace Period Unit	A period of time in days or months an inspection can be late without incurring a compliance violation.	
	To set a grace period:	
	<b>1</b> Type a value in the <i>Grace Period</i> field.	
	<b>2</b> Select the <i>Grace Period Unit</i> field. Click the down arrow and select either <i>Days</i> or <i>Months</i> in the selection list.	

Table 9-1. Setting Up Time Between Survey Settings (continued)

Property Name	Property Description
Early Survey Limit Days	<i>Early Survey Limit Days</i> is only used when <i>Targets</i> is selected as the scheduling method. When the selected scheduling method is <i>Last Survey</i> or <i>X years / Y%</i> , PCS Axis displays <i>N/A</i> (not applicable) indicating <i>Early Survey Limit Days</i> does not apply.
	<i>Early Survey Limit Days</i> refers to how early an inspection can occur before the actual due date and still count as an inspection for that survey period.
	To set the number of days an inspection can occur before the actual due date:
	• Type a value in the field <i>Early Survey Limit Days</i> .
Include Delinquent Within Days	If a facility inspection will become delinquent within a number of days, include the facility in the schedule with those due for inspection. For example, if a facility inspection is delinquent in 5 days, include that facility in the schedule with others due for inspection.
	To set a delinquent time period in days:
	• Type a value in the field <i>Include Delinquent Within Days</i> .
Required Inspections Per Calendar Year	Number of required inspections per calendar year. To set the number of required inspections:
	• Type a value in the field <i>Required Inspections Per Calendar Year</i> .

Table 9-1. Setting Up Time Between Survey Settings (continued)	
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Property Name	Property Description	
Multi-Year Survey Start	Refers to the year a multi-year survey starts (starting point). PCS Axis uses the starting year to calculate future survey dates available for selection in the <i>Target Year</i> selection list.	
	To set a starting year for a multi-year survey:	
	• Type a year in the field <i>Multi-Year Survey Start</i> .	
Minimum Percent Scheduled	Refers to a minimum percentage of facilities that must be inspected. This setting works in conjunction with the due date calculation method <i>X years/Y%</i> selected in the <i>Schedule Type</i> <i>Settings</i> tab.	
	To set a minimum percentage of facilities that must be inspected:	
	• Type a value in the field <i>Minimum Percent Scheduled</i> . The field supports decimal formatting, such as 30.75.	

Table 9-1. Setting Up Time Between Survey Settings (continued)

#### Schedule Type Settings

Scheduling properties set up in *Schedule Type Settings* apply at the facility type level. Some scheduling properties inherit settings from those previously set up in *Time Between Survey Settings*. Inherited settings changed at the facility type level override and have precedent over those in *Time Between Survey Settings*.

To set up scheduling properties at the facility type level, follow these steps:

- 1 Click the Select ROWs button P to open the Select ROWs window. Select one or more pipeline segments by clicking the check box for each pipeline segment (Figure 9-2, page 456). Click Save to close the Select ROWs window.
- 2 Click Data Entry > Edit Schedule Settings > Schedule Type Settings tab (Figure 9-4).

Ad noci heme     Calculation method     Surveys       Select All          Yes     Amougheric     Targets     12 Months     January       CPDM          Yes     Annual Bond     Targets     12 Months     January       V Test Point          Auto Select Periodic Bond - Cinical         Targets         12 Months         January           Ø Foreign Bond          Yes         Coupon Months         January           Ø Foreign Bond          Yes         Coupon Months         January           Ø Tarak          Yes         Coupon         Targets         12 Months         January           Ø Tarak          Yes         Coupon         Targets         12 Months         January           Ø Wave          Yes         Coupon         Targets         12 Months         January           Ø Valve          Yes         Inhibitor Injector         Targets         12 Months         January           Ø Valve          Yes         Probe Site          Targets         12 Months         January           Ø Valve          Yes          Probe Site          Targets         12 Months         January           Ø Valve          Yes          Targets         <	anuary N / A anuary N / A	Limit Days         Survey S           30         N / A
Ad Hoc Theme     Selected     Scheduling Type Name     Calculations and the barries of the source of	anuary N/A anuary N/A	Limit Days         Survey S           30         N / A           30         N / A
CPDM     Yes     AnnayBenc     Targets     12 Months     January       V Test Point     Auto Select     Periodic Bord - Critical     Targets     12 Months     January       V Test Point     Auto Select     Periodic Bord - Critical     Targets     12 Months     January       V Forsign Bond     Yes     Coupon     Targets     12 Months     January       V Galanci Anode     Yes     Coupon     Targets     12 Months     January       V Galanci Anode     Yes     Galanci Anode     Targets     12 Months     January       V Solution Anode     Yes     Galanci Anode     Targets     12 Months     January       V Solution Anode     Yes     Coupon     Targets     12 Months     January       V Solution Anode     Yes     Coupon     Targets     12 Months     January       V Solution Anode     Yes     Yes     Targets     12 Months     January       V Solution Anode     Yes     Yes     Targets     12 Months     January       V Annosheric     Yes     Targets     12 Months     January       Yes     Tank     Targets     12 Months     January       Yes     Tank     Targets     12 Months     January       Yes     Tan	anuary N / A anuary N / A	30 N/A 5 N/A 30 N/A 30 N/A 30 N/A
V Test Point     Auto Select     Periodic Bond - Critical     Targets     2 Mosths     January       V Test Point     Farsgets     12 Months     January       Auto Select     Periodic Bond - Critical     Targets     12 Months     January       Y Foreign Bond     Yes     Caupon     Targets     12 Months     January       Y Gabrinic Anode     Yes     Gaboric Anode     Targets     12 Months     January       Y Tark     Yes     Gaboric Anode     Targets     12 Months     January       VM     Yes     Caboric Anode     Targets     12 Months     January       Valve     Yes     Leek Survey     Targets     12 Months     January       Yahr     Yes     Annual Rectifier     Targets     12 Months     January       W Annus/Feric     Yes     Prode Site     Targets     12 Months     January       Yes     Prode Site     Targets     12 Months     January       Yes     Periodic Rectifier     Targets     12 Months     January       Yes     Pacific Rectifier     Targets     12 Months     January       Yes     Prode Rectifier     Targets     12 Months     January       Yes     Annual Rectifier     Targets     12 Months <td< td=""><td>anuary N / A anuary N / A</td><td>5 N / A 30 N / A 30 N / A 30 N / A</td></td<>	anuary N / A anuary N / A	5 N / A 30 N / A 30 N / A 30 N / A
Verter     Periodic Bond - Critical     Targets     2 Months     January       Ø Rectifier     Periodic Bond - Critical     Targets     12 Months     January       Ø rodeing Bond     Yes     Caupon     Targets     12 Months     January       Ø Galvanic Anode     Yes     Galvanic Anode     Targets     12 Months     January       Ø Galvanic Anode     Yes     Galvanic Anode     Targets     12 Months     January       Ø Tarak     Yes     Galvanic Anode     Targets     12 Months     January       Ø Vare     Yes     Calvanic Anode     Targets     12 Months     January       Ø Vare     Yes     Loek Survey     Targets     12 Months     January       Ø Vare     Yes     Annual Rectifier     Targets     12 Months     January       Ø Atmospheric     Yes     Annual Rectifier     Targets     2 Months     January       Ø Coupon     ICM     Yes     Tark     Targets     12 Months     January       Ø Coupon     Yes     Annual Rectifier     Targets     12 Months     January       Ø Coupon     Yes     Annual Rectifier     Targets     12 Months     January       Ø Coupon     Yes     Tarkehot     Targets     12 Months     Janu	anuary N / A anuary N / A	30 N/A 30 N/A 30 N/A
Q Rectifier     Auto Select     Periodic Bond - Non-Critical     Targets     12 Months     January       Y Forsign Bond     Yes     Coupon     Targets     12 Months     January       Y Forsign Bond     Yes     Coupon     Targets     12 Months     January       Y Tank     Yes     Gobanic Anode     Targets     12 Months     January       Y Tank     Yes     Inhibitor Ingrets     12 Months     January       VM     Yes     Probe Size     Targets     12 Months     January       Y Valve     Yes     Probe Size     Targets     12 Months     January       ACM     Yes     Annual Rectifier     Targets     12 Months     January       Y Atmospheric     Yes     Tank     Targets     12 Months     January       Y Coupon     Yes     Tark     Targets     12 Months     January       Y Coupon     Yes     Tark     Targets     12 Months     January	anuary N/A anuary N/A anuary N/A anuary N/A anuary N/A anuary N/A anuary N/A	30 N/A 30 N/A
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Image: Second	anuary N / A anuary N / A	
VM     Yes     Inhibitor Injector     Targets     12 Months     January       VM     Yes     Leak Survey     Targets     12 Months     January       Valve     Yes     Leak Survey     Targets     12 Months     January       ACM     Yes     Anoual Rectifier     Targets     12 Months     January       Valve     Active     Yes     Annual Rectifier     Targets     12 Months     January       Ves     Annual Rectifier     Targets     12 Months     January       Ves     Mandik Rectifier     Targets     12 Months     January       Ves     Tank     Targets     12 Months     January       Ves     Ves     Tant     Targets     12 Months     January       Volue     Yes     Tart     Targets     12 Months     January	anuary N/A anuary N/A anuary N/A anuary N/A anuary N/A	
Ves     Probe Site     Targets     12 Months     January       ACM     Yes     Annual Rectifier     Targets     12 Months     January       @ Atmospheric     Pres     Proidic Rectifier     Targets     2 Months     January       ICM     Yes     Tank     Targets     12 Months     January       ICM     Yes     Tark     Targets     12 Months     January       ICM     Yes     Test Point     Targets     12 Months     January       ICM     Yes     Ves     Targets     12 Months     January	anuary N/A anuary N/A anuary N/A anuary N/A	30 N/A
Walve     Yes     Probe Site     Targets     12 Months     January       ACM     Yes     Annual Rettifter     Targets     12 Months     January       Wes     Proble Site     Targets     12 Months     January       Wes     Proble Site     Targets     2 Months     January       Wes     Proble Site     Targets     12 Months     January       ICM     Yes     Tark     Targets     12 Months     January       Yes     Test Point     Targets     12 Months     January       Yes     Vete     Targets     12 Months     January	anuary N/A anuary N/A anuary N/A	30 N/A
ACM Yes Annual Rectifier Targets 12 Months January Yes Periodic Rectifier Targets 2 Months January Yes Tants Targets 12 Months January Yes Tant Targets 12 Months January Yes Tart Tart Targets 12 Months January Yes Valve Targets 12 Months January Yes Valve Targets 12 Months January	anuary N/A anuary N/A anuary N/A	30 N / A
ACM         Yes         Periodic Rectifier         Targets         2 Months         January           # Atmospheric         Yes         Tank         Targets         12 Months         January           ICM         Yes         Test Point         Targets         12 Months         January           ICM         Yes         Velove         Targets         12 Months         January           ICM         Yes         Velove         Targets         12 Months         January	anuary N/A anuary N/A	30 N / A
Ves         Tank         Targets         12 Months         January           ICM         Ves         Test Point         Targets         12 Months         January           ICOupon         Ves         Volve         Targets         12 Months         January	anuary N / A	5 N/A
ICM Ves Test Point Targets 12 Months January Coupon Yes Valve Targets 12 Months January		30 N/A
Coupon Yes Valve Targets 12 Months January		30 N/A
		30 N/A
Samples Yes Sample Targets 12 Months January		30 N/A
V Probe		
✓ Inhibitor Injector		
LSM		
∠ Leak Survey		
C Leak Survey		

Figure 9-4. Schedule Type Settings

- **3** Select the facility type you want to work with using one of the following methods described in step "a" or "b":
  - **a** To select a facility type theme, click the themes option button and then click the down arrow and select a theme in list, such as *[PCS] Rectifier Survey* (Figure 9-5).

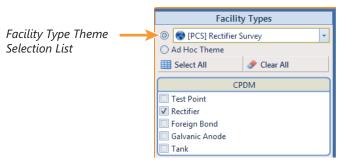


Figure 9-5. Facility Type Theme Option

**b** To select multiple facility types, click the **Ad Hoc Theme** option and then click the check box for one or more facility types, such as *Test Point*, *Rectifier*, and *Foreign Bond* (Figure 9-6).

**NOTE:** An *Ad Hoc Theme* only applies to the current session and is not saved. A facility type is selected when a check mark appears inside the check box. To clear the check mark, click the check box again.

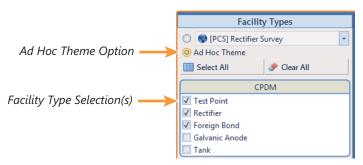


Figure 9-6. Ad Hoc Theme Option

**4** Refer to the following table (Table 9-2, page 463) for a description of facility type scheduling properties and how to set up each of these.

**IMPORTANT:** Certain property names in the following table include an asterisk (\*). The asterisk identifies scheduling properties you can set at the facility type level that will override and take precedent over those in *Time Between Survey Settings*.

Property Description
Include or exclude schedule settings at the facility type level when generating a schedule with facilities due for inspection.
To include or exclude schedule settings:
<b>1</b> Click <b>Selected</b> to display a drop down arrow.
<b>2</b> Click the drop down arrow and select one of the following options in the selection list:
• <b>No</b> : Excludes schedule settings when generating a schedule.
• <b>Yes</b> : Includes schedule settings when generating a schedule.
• <b>Auto Select</b> : If an <i>Auto Select Expression</i> has previously been created, select to include the expression with other schedule settings when generating a schedule.
For information about how to create an expression, see <i>Auto Select Expression</i> (page 465).

 Table 9-2.
 Schedule Type Settings

Property Name	Property Description
Scheduling Type Name	A named set of schedule settings for a facility type, such as <i>Periodic Rectifier</i> and <i>Annual Rectifier</i> .
	To add a new scheduling type:
	<ol> <li>Select a Facility Types theme or set up an Ad Hoc Theme with a facility type you want to add a new scheduling type.</li> </ol>
	2 Click <b>Add</b> to open the <i>Add Schedule Type</i> dialog box.
	<b>3</b> Type a name for the new scheduling type in the field <b>Scheduling Type Name</b> .
	4 Set up schedule settings as required.

Property Name	Property Description
Auto Select Expression	A database query set up for a scheduling type that defines the criteria for including specific facilities in a survey schedule. The expression is a combination of an operator, PCS Axis field, condition, and user- selected criteria.
	To create an expression for a scheduling type:
	<ol> <li>Click Create Expression to display an ellipsis button (). Click the button to open the Auto Select Expression dialog box.</li> </ol>
	2 Select an expression operator by selecting either <b>New 'And' Group</b> or <b>New 'Or' Group</b> .
	3 Type a name for the expression and then click the add button .
	<b>3</b> Set up expression fields in the following manner:
	<ul> <li>Click the down arrow and select a PCS Axis field.</li> </ul>
	<ul> <li>Click the down arrow and select a condition, such as <i>Is equal to</i> or <i>Is missing</i>.</li> </ul>
	<ul> <li>Type criteria in the last expression field if the field is present. This field is present based on selections in the previous two expression fields.</li> </ul>
	4 Click Save.

Table 9-2. Schedule Type Settings (continued)

Property Name	Property Description
Scheduling Priority	Facilities due for inspection are scheduled for survey at the facility type level based on the priority level of the scheduling type. Priority level is any value from 1 to 99 with 1 being the highest priority To set a priority level at the facility type level for a scheduling type:
	<b>1</b> Verify <b>Yes</b> is set for the scheduling property Only Highest Priority Due Is Scheduled.
	2 Type a value for <b>Scheduling Priority</b> using any number from 1 to 99.
	<b>Note:</b> A priority level set at the facility type level can be overridden at the ROW level in <i>Hierarchy Level Overrides</i> .
Due Date Calculation Method	Facilities due for inspection are scheduled for survey at the facility type level based on the due date calculation method of the scheduling type.
	To set a due date calculation method for a scheduling type:
	<b>1</b> Click <b>Due Date Calculation Method</b> to display a drop down arrow.
	<b>2</b> Select one of the following options in the selection list:
	• <b>Targets</b> : Facilities due for inspection are scheduled for survey based on the <i>Last Inspection Date</i> , <i>Target Month</i> and <i>Target Year</i> .
	<ul> <li>Last Survey: Facilities due for inspection are scheduled for survey based on the Last Inspection Date and setting for the scheduling property Time Between Surveys</li> </ul>
	• X years/Y%: Facilities due for inspection are scheduled for survey based on the Last Inspection Date and settings for the scheduling properties Time Between Surveys, Multi-Year Survey Start, and Minimum Percent Scheduled.

Table 9-2. Schedule Type Settings (continued)

Property Name	Property Description
Only Highest Priority Due Is Scheduled	If the scheduling type is set up with a <i>Scheduling</i> <i>Priority</i> level, include only those facilities with the highest priority level that are due for inspection in the survey schedule.
	Complete the following steps:
	<ol> <li>For a scheduling type listed in <i>Scheduling Type</i> <i>Name</i>, click the field <b>Only Highest Priority</b> <b>Due Is Scheduled</b> to display a drop down arrow.</li> </ol>
	2 Click the down arrow and select one of the following options in the selection list:
	• <b>Yes</b> : Only those facilities due for inspection with the highest priority level are scheduled for survey.
	• <b>No</b> : Any facility due for inspection is scheduled for survey.
Percent Needed to Complete Survey	A value from 0 to 100 indicating the percentage of facilities that must be surveyed before the survey (annual or multi-year) is considered complete.
	To set a percentage:
	• Type a value in the field <b>Percent Needed To</b> <b>Complete Survey</b> for a scheduling type listed in <i>Scheduling Type Name</i> .
*Time Between Surveys	Number of months or years between inspections. (See note about overrides in step 4 on page 463.)
	To set the time between surveys:
	<ol> <li>For a scheduling type listed in Scheduling Type Name, click the field Time Between Surveys to display a drop down arrow.</li> </ol>
	2 Click the down arrow and select the number of months or years in the selection list.

Table 9-2.	Schedule	Type Settings	(continued)
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Property Name	Property Description
*Target Month	Used only when <i>Targets</i> is selected as the scheduling method. Refers to the first survey month. Options in the selection list are based on the <i>Time Between Survey</i> value. (See note about overrides in step 4 on page 463.)
	As an example, if <i>Time Between Surveys</i> is 2 months and the <i>Target Month</i> (first survey month) is January, surveys are set at 2 month intervals beginning in January. The next survey is due in March, the next in May, and so on.
	To set the target month:
	1 For a scheduling type listed in <i>Scheduling Type</i> <i>Name</i> , click the field <b>Target Month</b> to display a drop down arrow.
	2 Click the down arrow and select a month in the selection list.
*Target Year	Used only when <i>Targets</i> is selected as the scheduling method. Refers to the first survey year when <i>Time Between Surveys</i> is more than 12 months. (See note about overrides in step 4 on page 463.)
	To set the target year:
	<b>1</b> For a scheduling type listed in <i>Scheduling Type</i> <i>Name</i> , click the field <b>Target Year</b> to display a drop down arrow.
	2 Click the down arrow and select a year in the selection list.

Table 9-2. Sched	ule Type Settings	(continued)
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Property Name	Property Description
*Grace Period / *Grace Period Unit	Refers to a period of time in days or months an inspection can be late without incurring a compliance violation. (See note about overrides in step 4 on page 463.)
	To set a grace period for a scheduling type listed in <i>Scheduling Type Name</i> :
	<b>1</b> Type a value in the <i>Grace Period</i> field.
	2 Click the <b>Grace Period Unit</b> field to display a drop down arrow. Click the drop down arrow and select either <b>Days</b> or <b>Months</b> in the selection list.
*Early Survey Limit Days	Refers to how early an inspection can occur before the actual due date and still count as an inspection for the survey period. (See note about overrides in step 4 on page 463.)
	To set an early survey limit for a scheduling type listed in <i>Scheduling Type Name</i> :
	• Type the number of days in the field <i>Early Survey Limit Days</i> .
*Include Delinquent Within Days	If an inspection will become delinquent within a number of days, include the facility in the schedule with facilities due for inspection. (See note about overrides in step 4 on page 463.)
	To set a delinquent time period in days for a scheduling type listed in Scheduling Type Name:
	• Type the number of days in the field <i>Include Delinquent Within Days</i> .
*Required Inspections Per Calendar Year	Number of required inspections per calendar year. (See note about overrides in step 4 on page 463.)
	To set the number of required inspections for a scheduling type listed in <i>Scheduling Type Name</i> :
	• Type a value in the field <i>Required Inspections Per Calendar Year.</i>

Table 9-2. Schedule Type Settings (continued)

Property Name	Property Description
*Multi-Year Survey Start	Refers to the year a multi-year survey starts. PCS Axis uses the starting year to calculate future survey dates available for selection in the <i>Target</i> <i>Year</i> selection list. (See note about overrides in step 4 on page 463.)
	To set the starting year of a multi-year survey for a scheduling type listed in <i>Scheduling Type Name</i> :
	• Type a year in the field <i>Multi-Year Survey Start</i> .
*Minimum Percent Scheduled	Refers to a minimum percentage of facilities that must be inspected in a multi-year survey. This setting works in conjunction with the due date calculation method <i>X years/Y%</i> . (See note about overrides in step 4 on page 463.)
	To set a minimum percentage of facilities that must be inspected for a scheduling type listed in <i>Scheduling Type Name</i> :
	• Type a value in the field <i>Minimum Percent</i> <i>Scheduled</i> . The field supports decimal formatting, such as 30.75.
*Survey Season Start Month	Refers to the starting month in the survey season for a multi-year survey. (See note about overrides in step 4 on page 463.)
	To set the starting month in the survey season for a scheduling type listed in <i>Scheduling Type Name</i> :
	<ol> <li>Click the field Survey Season Start Month to display a drop down arrow.</li> </ol>
	<b>2</b> Click the drop down arrow and select a starting month in the selection list.

Table 9-2. Schedule Type Settings (continued)

Property Name	Property Description
*Survey Season End Month	Refers to the ending month in the survey season for a multi-year survey. (See note about overrides in step 4 on page 463.)
	To set the ending month in the survey season for a scheduling type listed in <i>Scheduling Type Name</i> :
	<ol> <li>Click the field Survey Season Start Month to display a drop down arrow.</li> </ol>
	2 Click the drop down arrow and select a starting month in the selection list.
Level Work Load	Refers to PCS Axis balancing the work load for facilities that are due for inspection in a multi-year survey. The property setting applies at the facility type level.
	To enable this scheduling option:
	<ul> <li>Click the check box Level Work Load for a scheduling type listed in Scheduling Type Name.</li> </ul>
	To disable the option, clear the check mark by clicking the check box again.
Hide	Refers to hiding a scheduling type in the <i>Facility</i> <i>Level Override</i> mini-grid of the data entry grid. Hiding the mini-grid prevents scheduling changes at the facility level when working with the data entry grid based on a schedule.
	To enable this scheduling option:
	• Click the <b>Hide</b> check box for a scheduling type listed in <i>Scheduling Type Name</i> .
	To disable the option, clear the check mark by clicking the check box again.

Table 9-2. Schedule Type Settings (continued)

#### **Hierarchy Level Overrides**

Scheduling properties set up in *Hierarchy Level Overrides* apply at the ROW (pipeline) level. Some scheduling properties inherit settings from those previously set up in *Time Between Survey Settings* and *ROW and Facility Settings*. Inherited settings changed at the ROW level override and have precedent over those in the *Time Between Survey Settings* and *ROW and Facility Settings*.

To set up scheduling properties at the ROW level, follow these steps:

- 1 Click the Select ROWs button P to open the Select ROWs window. Select one or more pipeline segments by clicking the check box for each pipeline segment (Figure 9-2, page 456). Click Save to close the Select ROWs window.
- 2 Click **Data Entry** > **Edit Schedule Settings** > **Hierarchy Level Overrides** tab (Figure 9-7).

ichedule Type Settings Hierarchy Level Overrid	des Time Between Survey Settings					
Facility Types	My Pipeline Company     My Pipeline Folder	Selected	Scheduling Type Name	Due Date Calculation Method	Time Between Surveys	Target Month
Ad Hoc Theme	Northeast Region	Yes	Atmospheric	Targets	12 Months	January
Select All	✓ ■ ◆Northwest Region	Yes	Annual Bond	Targets	12 Months	January
Select All Clear All	COMPRESSOR STATIONS	Auto Select	Periodic Bond - Critical	Targets	2 Months	January
CPDM	GATHERING SYSTEMS	Auto Select	Periodic Bond - Non-Criti	-	12 Months	January
Test Point	PRODUCTION SYSTEMS	Yes	Coupon	Targets	12 Months	January
Rectifier		Yes	Galvanic Anode	Targets	12 Months	January
🗹 Foreign Bond	TRANSMISSION SYSTEMS	Yes	Inhibitor Injector	Targets	12 Months	January
Galvanic Anode	RECTIFIER DEMO	Yes	Leak Survey	Targets	12 Months	January
☑ Tank	RECTIFIER DEMO 2	Yes	Probe Site	Targets	12 Months	January
VM	T-1400 ; Waco to College Station	Yes	Annual Rectifier	Targets	12 Months	January
Valve	T-1401 ; College Station to Austi	Yes	Periodic Rectifier	Targets	2 Months	January
ACM	T-1402 ; Midland to Dallas	Yes	Tank	Targets	12 Months	January
Atmospheric	T-1403 : Dallas to Houston	Yes	My Scheduling Type_1	Targets	3 Months	January
	T-1600 ; Transmission Scheduling	Yes	My Scheduling Type_2	Targets	6 Months	January
ICM	T-1700 ; Longview to Kilgore	Yes	Test Point	Targets	12 Months	January
Coupon	T-1700 ; Eoligview to kilgore	Yes	Valve	Targets	12 Months	January
Samples		Yes	Sample	Targets	12 Months	January
Probe	T-1903 ; Station 400 to Station 4					
Inhibitor Injector	Southeast Region					
LSM	Southwest Region					
Leak Survey						

Figure 9-7. Hierarchy Level Overrides

- **3** Select the facility type(s) you want to work with by selecting a *facility type theme* or setting up an *Ad Hoc Theme* in *Facility Types*. See Figure 9-5 or Figure 9-6 on page 462.
- **4** Select the ROW(s) you want to work with by clicking the check box for each ROW in the middle pane of the *Hierarchy Level Overrides* window (Figure 9-8).

Edit Schedule Setting: ×	PCS Axis			
		ols Field Computer Help 🛛 😯 PCS Axis		Welcome John Smith   🕑   🔀 Log I
Facility Types         Image: Company         Selected         Scheduling Type Name         Due Date         Time           Image: Company         Imag	Edit Schedule Settings × Schedule Type Settings Hierarchy Level Overrid Facility Types © (PCS) Rectifier Survey Ad Hoc Theme Select All CPDM Test Point Rectifier Foreign Bond Galvanic Anode Tank VM Valve ACM Atmospheric ICM Coupon Samples Probe Inhibitor Injector LSM	Time Between Survey Settings  My Pipeline Company My Pipeline Folder Northeast Region COMPRESSOR STATIONS GATHERING SYSTEMS COMPRESSOR STATIONS GATHERING SYSTEMS COMPRESSOR STATIONS GATHERING SYSTEMS RECTIFIER DEMO RECTIFIER DEMO RECTIFIER DEMO RECTIFIER DEMO T-1402 ; Midland to Dallas T-1403 ; Sallast 6 Houston T-1903 ; Station 400 to Station 401 Southeast Region Southwest Region	Yes Annual Rectifier Yes My Scheduling Type 2 Yes Periodic Rectifier	Due Date         Time Bet           Calculation Method         Surve           Targets         12 Month ≠           Targets         6 Months
A III A IIIII A III A IIII A IIIII A IIIII A IIII A IIIII A IIIII A IIIII A IIIII A IIIII A IIIII A IIIIII		. € [		Row Count: 3

Figure 9-8. ROW Selection(s)

**5** Refer to the following table (Table 9-3, page 474) for a description of scheduling properties that apply at the ROW level and how to set up each of these.

**IMPORTANT:** Certain property names in the following table include an asterisk (\*). The asterisk identifies scheduling properties you can set at the ROW level that will override and take precedent over those in *ROW and Facility Settings* and *Time Between Survey Setting* 

Property Name	Property Description		
Selected	Include or exclude schedule settings at the ROW level when generating a schedule with facilities due for inspection.		
	To include or exclude schedule settings:		
	<b>1</b> Click <b>Selected</b> to display a drop down arrow.		
	2 Click the drop down arrow and select one of the following options in the selection list:		
	• <b>No</b> : Excludes schedule settings when generating a schedule.		
	• <b>Yes</b> : Includes schedule settings when generating a schedule.		
	• Auto Select: If an Auto Select Expression has previously been created in the Schedule Type Settings tab, select to include the expression with other schedule settings when generating a schedule.		
	For information about how to create an expression, see <i>Auto Select Expression</i> (page 465).		
Scheduling Type Name	A named set of schedule settings for a facility type created in the <i>Schedule Type Settings</i> tab.		
	For information about how to create a <i>Scheduling Type Name</i> , see page 464.		
Due Date Calculation Method	Shows the property setting inherited from <i>Due</i> <i>Date Calculation Method</i> in the <i>Schedule Type</i> <i>Settings</i> tab.		

 Table 9-3. Hierarchy Level Overrides

Property Name	Property Description				
*Time Between Surveys	Number of months or years between inspections. (See note about overrides in step 5 on page 473.)				
	To set the time between surveys:				
	<ol> <li>For a scheduling type listed in Scheduling Type Name, click the field Time Between Surveys to display a drop down arrow.</li> </ol>				
	2 Click the down arrow and select the number of months or years in the selection list.				
*Target Month	Refers to the first survey month. Options in the selection list are based on the <i>Time Between Survey</i> value. (See note about overrides in step 5 on page 473.)				
	As an example, if <i>Time Between Surveys</i> is 2 months and the <i>Target Month</i> (first survey month) is January, surveys are set at 2 month intervals beginning in January. The next survey is due in March, the next in May, and so on.				
	To set the target month:				
	<ol> <li>For a scheduling type listed in Scheduling Type Name, click the field Target Month to display a drop down arrow.</li> </ol>				
	2 Click the down arrow and select a month in the selection list.				
*Target Year	Refers to the first survey year when <i>Time Between Surveys</i> is more than 12 months. (See note about overrides in step 5 on page 473.)				
	To set the target year:				
	<ol> <li>For a scheduling type listed in Scheduling Type Name, click the field Target Year to display a drop down arrow.</li> </ol>				
	2 Click the down arrow and select a year in the selection list.				

Table 9-3.	Hierarchy	Level	Overrides	(continued)
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Property Name	Property Description		
*Grace Period / *Grace Period Unit	Refers to a period of time in days or months an inspection can be late without incurring a compliance violation. (See note about overrides in step 5 on page 473.)		
	To set a grace period for a scheduling type listed in <i>Scheduling Type Name</i> :		
	<b>1</b> Type a value in the <i>Grace Period</i> field.		
	2 Click the <b>Grace Period Unit</b> field to display a drop down arrow. Click the drop down arrow and select either <b>Days</b> or <b>Months</b> in the selection list.		
*Early Survey Limit Days	Refers to how early an inspection can occur before the actual due date and still count as an inspection for the survey period. (See note about overrides in step 5 on page 473.)		
	To set an early survey limit for a scheduling type listed in <i>Scheduling Type Name</i> :		
	• Type the number of days in the field <i>Early Survey Limit Days</i> .		

 Table 9-3. Hierarchy Level Overrides (continued)

## Creating a Schedule

Information in this section explains how to create a schedule based on a scheduling method. Scheduling methods include *Targets*, *Last Survey*, and *X years/Y%*. The scheduling method in conjunction with other schedule settings determines when facilities are due for inspection.

Topics in this section include those in the following list:

- Creating a Schedule Based on Targets
- Creating a Schedule Based on Last Survey (page 479)
- Creating a Schedule Based on X years/Y% (page 480)

#### Creating a Schedule Based on Targets

If you want to schedule facilities for survey using a recurring time period, such as every January of each year, create a schedule based on the Targets scheduling method. With this method, facilities due for inspection are scheduled for survey based on the *Last Inspection Date*, *Target Month*, and *Target Year*.

To create a schedule based on the *Targets* scheduling method, follow these steps:

- 1 Select a pipeline segment in the *Select ROWs* window. Click **Save** to close the window.
- 2 Click Data Entry > Edit Schedule Settings > Time Between Survey Settings tab.
- 3 Set up all related scheduling properties for a survey selected in *Time Between Surveys*. Scheduling properties marked with *N/A* (not applicable) are not required, such as *Target Year* for a survey with *Time Between Surveys* of 12 months or less. If needed, refer to Table 9-1 on page 457 for field descriptions.

**NOTE:** Scheduling properties set up in *Time Between Surveys* apply system wide. Settings can however be overridden at the facility type level in *ROW and Facility Settings*; at the hierarchy level in *Hierarchy Level Overrides*; and at the facility level in the *Facility Level Override* mini-grid of the *Information* grid.

- **4** To select the *Targets* due date method:
  - a Click the Schedule Type Settings tab.

- **b** Select one or more facility types in the *Facility Types* pane using either an installed facility type theme or an *Ad Hoc Theme*.
- For a scheduling type listed in *Scheduling Type Name*, click the field **Due Date Calculation Method** to display a drop down arrow. Click the arrow and select **Targets** in the selection list.
- **d** Set up remaining scheduling properties as required. Scheduling properties inherit values from those in the *Time Between Survey Settings* tab and can be overridden at the facility type level as needed. Property settings marked *N/A* (not applicable) are not required. Refer to Table 9-2 on page 463 for field descriptions.
- **5** If you want to override one or more scheduling properties at the ROW level, complete the following steps:
  - a Click the Hierarchy Level Overrides tab.
  - **b** Select one or more facility types in the *Facility Types* pane using either an installed facility type theme or an *Ad Hoc Theme*.
  - **c** Select the ROW(s) you want to set up a survey schedule. Select one or more ROWs (pipeline segments) listed in the middle pane of the window.
  - **d** For a scheduling type listed in *Scheduling Type Name*, set up scheduling properties as required. Scheduling properties inherit values from those in the *Schedule Type Settings* tab and can be overridden at the ROW level as needed. Refer to Table 9-3 on page 474 for field descriptions.

The schedule is now set up with the *Targets* scheduling method.

#### Creating a Schedule Based on Last Survey

If you want to schedule facilities for survey based on the last time facilities were inspected, create a schedule based on the *Last Survey* scheduling method. With this method, facilities due for inspection are scheduled for survey based on *Last Inspection Date* and settings for the scheduling property *Time Between Surveys*.

To create a schedule based on the Last Survey scheduling method, follow these steps:

- 1 Select a pipeline segment in the *Select ROWs* window. Then click **Save** to close the window.
- 2 Click Data Entry > Edit Schedule Settings > Time Between Survey Settings tab.
- 3 Set up all related scheduling properties for a survey selected in *Time Between Surveys*. Scheduling properties marked with *N/A* (not applicable) are not required, such as *Target Year* for a survey with *Time Between Surveys* of 12 months or less. If needed, refer to Table 9-1 on page 457 for field descriptions.

**Note:** Scheduling properties set up in *Time Between Surveys* apply system wide. Settings can however be overridden at the facility type level in *ROW and Facility Settings*; at the hierarchy level in *Hierarchy Level Overrides*; and at the facility level in the *Facility Level Override* mini-grid of the *Information* grid.

- 4 To select the *Last Survey* due date method:
  - a Click the Schedule Type Settings tab.
  - **b** Select one or more facility types in the *Facility Types* pane using either an installed facility type theme or an *Ad Hoc Theme*.
  - For a scheduling type listed in *Scheduling Type Name*, click the field **Due Date Calculation Method** to display a drop down arrow. Click the arrow and select **Last Survey** in the selection list.
  - **d** Set up remaining scheduling properties as required. Scheduling properties inherit values from those in the *Time Between Survey Settings* tab and can be overridden at the facility type level as needed. Property settings marked *N/A* (not applicable) are not required. Refer to Table 9-2 on page 463 for field descriptions.
- **5** If you want to override one or more scheduling properties at the ROW level, complete the following steps:
  - a Click the Hierarchy Level Overrides tab.

- **b** Select one or more facility types in the *Facility Types* pane using either an installed facility type theme or an *Ad Hoc Theme*.
- **c** Select the ROW(s) you want to set up a survey schedule. Select one or more ROWs (pipeline segments) listed in the middle pane of the window.
- **d** For a scheduling type listed in *Scheduling Type Name*, set up scheduling properties as required. Scheduling properties inherit values from those in the *Schedule Type Settings* tab and can be overridden at the ROW level as needed. Refer to Table 9-3 on page 474 for field descriptions.

The schedule is now set up with the *Last Survey* scheduling method.

#### Creating a Schedule Based on X years/Y%

If facilities require inspection based on a multi-year cycle, use the *X years/Y%* scheduling method. With this method, facilities due for inspection are scheduled for survey based on the *Last Inspection Date* and settings for the scheduling properties *Time Between Surveys, Multi-Year Survey Start*, and *Minimum Percent Scheduled*.

To create a schedule for a multi-year survey based on the *X years/Y%* method, follow these steps:

- 1 Select a pipeline segment in the *Select ROWs* window. Click **Save** to close the window.
- 2 Click Data Entry > Edit Schedule Settings > Time Between Survey Settings tab.
- 3 Set up all related scheduling properties for a survey selected in *Time Between Surveys*. Scheduling properties marked with *N/A* (not applicable) are not required, such as *Required Inspections Per Calendar Year* for a survey with *Time Between Surveys* of 2 Years or more. If needed, refer to Table 9-1 on page 457 for field descriptions.

**Note:** Scheduling properties set up in *Time Between Surveys* apply system wide. Settings can however be overridden at the facility type level in *ROW and Facility Settings*; at the hierarchy level in *Hierarchy Level Overrides*; and at the facility level in the *Facility Level Override* mini-grid of the *Information* grid.

- **4** To select the *X* years/Y% due date method:
  - a Click the Schedule Type Settings tab.

- **b** Select one or more facility types in the *Facility Types* pane using either an installed facility type theme or an *Ad Hoc Theme*.
- For a scheduling type listed in *Scheduling Type Name*, click the field **Due Date Calculation Method** to display a drop down arrow. Click the arrow and select **X years/Y%** in the selection list.
- **d** Set up remaining scheduling properties as required. Scheduling properties inherit values from those in the *Time Between Survey Settings* tab and can be overridden at the facility type level as needed. Property settings marked *N/A* (not applicable) are not required. Refer to Table 9-2 on page 463 for field descriptions.
- **5** If you want to override one or more scheduling properties at the ROW level, complete the following steps:
  - a Click the Hierarchy Level Overrides tab.
  - **b** Select one or more facility types in the *Facility Types* pane using either an installed facility type theme or an *Ad Hoc Theme*.
  - **c** Select the ROW(s) you want to set up a survey schedule. Select one or more ROWs (pipeline segments) listed in the middle pane of the window.
  - **d** For a scheduling type listed in *Scheduling Type Name*, set up scheduling properties as required. Scheduling properties inherit values from those in the *Schedule Type Settings* tab and can be overridden at the ROW level as needed. Refer to Table 9-3 on page 474 for field descriptions.

The schedule is now set up with the *X years/Y%* scheduling method.

# Working with a Schedule Definition

A schedule definition is a named set of one or more scheduling types to be included in a schedule. For example, a schedule definition can include test point, rectifier, and bond scheduling types – each with different scheduling properties set up in *Edit Schedule Settings* (page 461). A schedule definition is used when performing any of the following tasks in PCS Axis:

- viewing facilities in a data entry grid based on a schedule
- building a survey in a data entry grid based on a schedule
- transferring a survey that is based on a schedule to the Allegro Field PC
- printing a data collection form that is based on a schedule for manually recording survey data

**NOTE:** A scheduling type is a named set of scheduling properties for a facility type set up in *Edit Schedule Settings*. For more information, see *Schedule Type Settings* (page 461).

Two types of schedule definitions are available for use. They include *installed* and *addition* schedule definitions. An *installed* schedule definition is one that has been installed during the PCS Axis software installation. An *addition* schedule definition is one that you create.

Topics in this section explain how to work with a schedule definition and include those in the following list:

- Editing an Installed Schedule Definition (page 483)
- Adding a Schedule Definition Addition (page 486)
- Editing a Schedule Definition Addition (page 487)

#### Editing an Installed Schedule Definition

An installed schedule definition includes [PCS] in the title of the schedule definition name, such as [PCS] Installed Schedule Definition. The procedure in this section explains how to complete the following tasks to edit an installed schedule definition:

- add a schedule type
- remove a schedule type
- revert an installed schedule definition

To edit an installed schedule definition, follow these steps:

- Click Data Entry > Define Schedules to open the Define Schedules window (Figure 9-9).
- **2** Click the down arrow in the **Select Schedule Definition** field and select an installed schedule definition, such as *[PCS] Installed Schedule Definition*.

Figure 9-9. Define Schedules

- **3** To add one or more schedule types to an installed schedule definition:
  - **a** Select a schedule type listed in the *Available Schedule Types* pane, such as *Periodic Rectifier*. To select multiple schedule types, press the **Ctrl** key on the computer keyboard while selecting each schedule type.
  - **b** Click the top arrow button  $\bigcirc$  to move the schedule type(s) to the *Selected Schedule Types* pane (Figure 9-10). Click **Save**.

**NOTE:** Double-clicking a schedule type in the *Available Schedule Types* pane also moves it to the *Selected Schedule Types* pane.

PCS Axis				
File Modules Data Entry Reports / Graphs Too	ls Field Co	mputer Help	O PCS Axis	Welcome John Smith 🛛 🕙 🔀 Log Out
Define Schedules ×			•	
	B Save	🗘 Add   🗙 Del	ete   🚳 Cancel   🗠 Rever	rt
Select Schedule Definition				
[PCS] Installed Schedule Definition				•
Schedule Name				
[PCS] Installed Schedule Definition				
Schedule all facilities on a ROW on the same D	u			
Available Schedule Types	Sel	ected Schedule T	ypes	_
Atmospheric	Pe	riodic Rectifier		
Annual Bond	Te	st Point		
Periodic Bond - Critical				
Periodic Bond - Non-Critical				
Coupon				
Galvanic Anode				
Inhibitor Injector				
Leak Survey Probe Site				
Annual Rectifier				
My Scheduling Type_2				
Periodic Rectifier	$\mathbf{\bullet}$			
Tank				
My Scheduling Type_1				
Test Point	-			
Valve				
Sample				

Figure 9-10. Adding a Schedule Type

- 4 To remove one or more schedule types from an installed schedule definition:
  - a Select a schedule type listed in the *Selected Schedule Types* pane (Figure 9-10). To select multiple schedule types, press the **Ctrl** key on the computer keyboard while selecting each schedule type.
  - **b** Click the bottom arrow button (1) to move the schedule type to the *Available Schedule Types* pane. Click **Save**.

**NOTE:** Double-clicking a schedule type in the *Selected Schedule Types* pane also moves it to the *Available Schedule Types* pane.

- **5** After saving changes to an installed schedule definition, complete the following step to revert to installed values:
  - Click **Revert** then click **Ves** when the *Revert* message displays (Figure 9-11).

Revert	×
Revert the se	elected Schedule Definitition to installed values?
	🖋 Yes 🛛 🔀 No

Figure 9-11. Revert Message

#### Adding a Schedule Definition Addition

To add a schedule definition addition, follow these steps:

- 1 Click **Data Entry** > **Define Schedules** to open the *Define Schedules* window (Figure 9-12).
- 2 Click **Add** and then type a name for the addition in the *Schedule Name* field. The field supports up to 120 characters including spaces.
- **3** Select a schedule type listed in the *Available Schedule Types* pane, such as *Periodic Bond-Critical*. To select multiple schedule types, press the **Ctrl** key on the computer keyboard while selecting each schedule type.
- 4 Click the top arrow button  $\bigcirc$  to move the schedule type(s) to the *Selected Schedule Types* pane (Figure 9-12). Click **Save**. The addition is now available in the *Select Schedule Definition* selection list.

**NOTE:** Double-clicking a schedule type in the *Available Schedule Types* pane also moves it to the *Selected Schedule Types* pane.

fine Schedules ×			
	🔡 Sar	re   😳 Add   🗡 Delete   🛞 Cancel   🗠 Revert	
elect Schedule Definition			
/ly Schedule Definition_1		*	
Schedule Name	_		
My Schedule Definition_1	_		
Schedule all facilities on a ROW on the same	Du	ode de doche della Transi	
Available Schedule Types	-	Selected Schedule Types	
Atmospheric		Annual Bond	
Annual Bond		Periodic Rectifier	
Periodic Bond - Critical		Test Point	
Periodic Bond - Non-Critical			
Coupon Galvanic Anode			
Inhibitor Injector			
Leak Survey			
Probe Site			
Annual Rectifier			
My Scheduling Type_2			
Periodic Rectifier	$\mathbf{E}$		
Tank			
My Scheduling Type_1			
Valve			
Sample			

Figure 9-12. Adding a Schedule Definition Addition

#### Editing a Schedule Definition Addition

The following procedure explains how to delete, rename, or edit a schedule definition addition.

Complete the following steps:

- Click Data Entry > Define Schedules to open the Define Schedules window (Figure 9-12, page 486).
- **2** Click the down arrow in the *Select Schedule Definition* field and select an addition in the selection list.
- **3** If you want to delete the addition, click **>> Delete**, then click **>> Yes** when the *Delete* message displays (Figure 9-13).

Delete	×
Delete the selected Schedule Definition?	
🗹 Ye	5   🔀 No

Figure 9-13. Delete Message

- 4 If you want to rename an addition, type a new name in the *Schedule Name* field and then click **Save**.
- **5** If you want to edit the addition by adding one or more schedule types, follow these steps:
  - **a** Select a schedule type listed in the *Available Schedule Types* pane. To select multiple schedule types, press the **Ctrl** key on the computer keyboard while selecting each schedule type.
  - **b** Click the top arrow button () to move the schedule type(s) to the *Selected Schedule Types* pane, then click **Save**.
- **6** If you want to edit the addition by removing one or more schedule types, follow these steps:
  - **a** Select a schedule type listed in the *Selected Schedule Types* pane. To select multiple schedule types, press the **Ctrl** key on the computer keyboard while selecting each schedule type.
  - **b** Click the bottom arrow button (1) to move the schedule type to the *Available Schedule Types* pane, then click **Save**.

# Using a Schedule in PCS Axis

After setting up scheduling criteria in *Edit Schedule Settings* and creating a schedule definition in *Define Schedules*, you can use a schedule in any of the following ways:

- View records in a grid based on a schedule. For instructions, see *Viewing Records Based on a Schedule* (page 257).
- Build a survey in an inspection grid based on a schedule. For instructions, see *Building a Survey in the Inspection Grid* (page 270).
- Transfer a survey to the Allegro Field PC based on a schedule. For instructions, see *Using Field Computer* (page 595).

Notes	

# 10

# Using Bridge

Bridge is an optional add-on feature that allows you to transfer data between PCS Axis and an external system, such as a GIS (geographic information system) or work management system. If you have an account on American Innovations' Bullhorn<sup>®</sup> Asset Tracker (BAT<sup>™</sup>) website, you can transfer facility survey data to PCS Axis, such as rectifier, bond, or test point inspection readings.

If your company purchased the optional Bridge add-on or you plan to transfer data from BAT in PCS Axis, running Bridge for the first time requires you to enter a Bridge activation key. If you are unable to locate your Bridge activation key, contact PCS Technical services for assistance at <u>pcstechservices@aiworldwide.com</u>. For more information, refer to *Activating Bridge Import for Operation* (page 15).

Topics in this chapter include those in the following list:

- Understanding the Bridge Transition File
- Using a Facility Key in Bridge (page 492)
- Adding a Bridge Definition (page 494)
- Viewing Bridge Job Status and Log (page 556)
- Icons and Colors Used in Bridge Job Status (page 559)

## Understanding the Bridge Transition File

Bridge uses a transition file to import and export data. The import file is in a format that both Bridge and the external system can read and write. File formats supported by Bridge include those in the following list:

- Excel Spreadsheet 2007 or higher (.xlsx)
- ASCII, comma-delimited (.txt or .csv)
- Extensible Markup Language (.xml)

# Using a Facility Key in Bridge

Bridge provides the option of associating a facility key in PCS Axis with an external system ID when setting up a Bridge import definition. The facility key must be unique for each facility. It is used to update mileposts, ROWs, or facility IDs for existing facilities.

A facility key is a user-defined field set up in PCS Axis. An external system ID is typically a unique identifier generated by an external system, such as a GIS or work management system. The facility key is used in place of the PCS Axis fields labeled *ROW Code* or *Milepost* when setting up the Bridge import definition. The facility key allows you to map (or link) facilities between PCS Axis and the external system.

**NOTE:** The Facility Key feature applies only to a Bridge Import.

To add a facility key for an external system ID, follow these steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 10-1, page 493).
- 2 Open the folders labeled **Facility Surveys** and **Common to All Facilities** in the selection tree. Then click **ROW and Pipeline** to display related fields in the grid.

**NOTE:** Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

Id and UDF Customizations ×						
	•	🕀 🕕 Normal   🗔 Cal	culated   🥥 Milepost	🗃 Picklist   🖣 On/	'Off Pair 🛛 🖉 Sumn	nation 🛛 🛪 Delete 🛛 🥜 Customi
Properties	Original Caption	Caption	Field Definition	Bridge - Required for Import	Bullhorn Engineering Unit	Field Computer - Available Field Computer AC/DC
Facility Surveys	Bridge ID	Bridge ID	🧃 uniqueidentifier		N/A	N/A
<ul> <li>Common to All Facilities</li> </ul>	Creation Date	Creation Date	DateTime		N/A	N/A
ROW and Pipeline Permanent Information	Milepost	Milepost	Character (15)		N/A	N/A
Information	Primary Link	Primary Link	Logical		N/A	N/A
Inspection 1	Relative Milepost	Relative Milepost	Character (15)		N/A	N/A
Maintenance Sub Facility	ROW Code and Pipe	ROW Code and Pipe	uniqueidentifier		N / A	N/A
CPDM     M     M	Series	Series	oniqueidentifier		N/A	N/A

Figure 10-1. Field and UDF Customizations

- **3** Click **Normal** in the toolbar to open the *Add Normal Field* dialog box (Figure 10-2).
- **4** Type a unique name for the UDF in the **Caption** field. Then click **B** Save to save changes and close the dialog box.

The UDF is now ready to be used as the *Facility Key* in a Bridge import or export definition file.

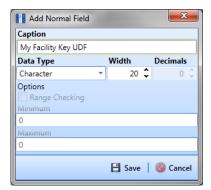


Figure 10-2. Add Normal Field

# Adding a Bridge Definition

Information in this section explains how to add a Bridge import, export, import/export, and Bullhorn definition. Topics include those in the following list:

- Adding a Bridge Import Definition
- Adding a Bridge Import Definition for an SDL Survey File
- Adding a Bridge Export Definition (page 513)
- Adding a Bridge Import/Export Definition (page 527)
- Adding a Bullhorn Bridge Definition (page 543)

#### Adding a Bridge Import Definition

A Bridge import definition specifies the property settings and options for importing data in PCS Axis. It defines the data transfer options; location of the import file; and field mappings in PCS Axis and the import file.

To add a Bridge import definition, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 10-3). Select pipeline segment(s) with facilities you want to include in the Bridge definition. Click Save to close the window.

Select ROWs		×
🛛 🤌 Clear   😋 Add	🔀 Delete	🖋 Rename
○ Find Only ○ Find and Select ◎ Clear Selections, Find and Select	t 🗸	Expand Display
Find ROW Code	< 00 Fin	d
<ul> <li>My Pipeline Company</li> <li>Northeast Region</li> <li>LG123</li> <li>KHL001</li> <li>MTL-123 ; My 123 Transmission Line</li> <li>MTL-456 ; My MTL 456 Transmission Line</li> <li>Northwest Region</li> <li>Southeast Region</li> <li>Southwest Region</li> </ul>		
<b>▲</b>		+
	🗎 Sav	e   🚳 Cancel

Figure 10-3. Select ROWs

2 Click **Tools** > **Bridge** to open the *Bridge* window (Figure 10-4).

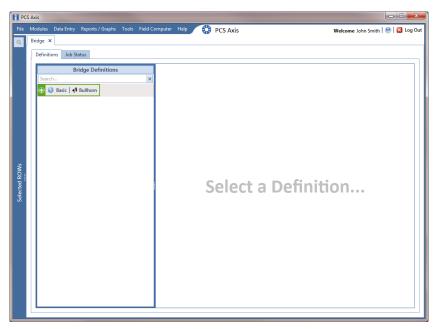


Figure 10-4. Bridge Definitions

**3** Click **Basic** to open the basic definition panel (Figure 10-5).

Axis		
	I Computer Help 🛛 😯 PCS Axis	Welcome John Smith   🕺   🔀 Log Out
Bridge ×		
Definitions Job Status		
Bridge Definitions	🗞 Prevalidate 👔 Import 🔒 Export 📋 Copy To Clipboard 🌼 Job Status	📔 Save   🚳 Cancel   🗍 Copy   🗡 Delete
Search	✓ (i) It appears that you have some invalid options, please correct the following (3)	
🕀 📦 Basic 📢 Bullhorn		/ Edit
		No Filter Defined
	From Selected ROWS, export: All Records	No Filter Defined
	Public Use Facility Key Rename files on manual bridge runs.	
	E Full View Add Data Item	
	No Data Items De	fined
	Modules Data Entry Reports / Graphs Tools Field Bridge X Definitions Job Status Bridge Definitions Search	Medule:       Deta Entry Reports / Graphis Tools Field Computer Help       Image: PCS Axis         Bridge X           Orfinitions:       bb Status          Fridge Definitions:           Image: Image

Figure 10-5. Basic Definition Panel

4 Type a unique name for the definition in the **Name** field.

**NOTE:** Clicking the *Bridge Definitions* bar collapses the panel allowing you to view more of the definition panel. Clicking the bar again expands the panel.

**5** To set properties in the *Data Transfer* group box, follow these steps (Figure 10-6):

	idge : Definit	x	Welcome John Smith   🥹   🔽 Log
		🗞 Prevalidate   🖞 Import   🔒 Export   🗍 Copy To Clipboard   😜 Job Status	💾 Save   🚳 Cancel   🗍 Copy   🗡 Delete
		∇ (i) It appears that you have some invalid options, please correct the following (1)	
		Name	Filters // Edit
		My Bridge Import_1	
		Data Transfer     Import     Scheduled     12:00 AM     Import       Export     Scheduled     12:00 AM     Import       From Selected ROWs, export:     All Records     *	No Filter Defined
		From Selected ROWs, export: All Records	
		Public Use Facility Key Rename files on manual bridge runs.	
Selected ROWs 	Bridge Definitions	Eil Full View   O Add Data Item	
X	Bride		ms Defined

Figure 10-6. Bridge Import Definition

- a Click the Import check box.
- If you are importing large amounts of data, click the check box Reindex after import to reindex the PCS Axis database after the import process completes.

**Note:** Enabling this option prevents index fragmentation from occurring in the PCS Axis database, which in turn may result in slow system performance. Index fragmentation may occur after importing large amounts of data in PCS Axis using *Bridge Import*, *Bullhorn Bridge*, or *Field Computer*. You can also reindex the database using the option *Reindex Database* in *Job Service Viewer* (Tools > Job Service Viewer).

**c** If you want PCS Axis to automatically run the import file at a scheduled time, click the **Scheduled** check box and then type a scheduled time in the adjacent field. Enter a scheduled time using 12-hour time format to specify the hour, minute, and AM/PM setting (HH:MM AM or PM).

When the import file is not scheduled to run automatically, you can run it manually by clicking the **TIMPORT** button.

**IMPORTANT:** When scheduling a time to run *Bridge*, choose a time that does not impact other network services or computer resources. For example, consider a staggered time schedule instead of running *Bridge* at the same time as other scheduled network services.

- 6 To set properties in the *Options* group box (Figure 10-6), follow these steps:
  - **a** Click the **Public** check box if you want the import definition file available for use by all PCS Axis users. When the check box is empty, the definition file is available only to the user who creates it.
  - **b** Click the check box **Use Facility Key** if you plan to map facilities to a user defined field (UDF) set up previously for an external system ID. See *Using a Facility Key in Bridge* (page 492) for more information if needed.

When facilities are not mapped to a facility key, they are mapped to the following required fields: *ROW Code*, *Milepost*, and *Facility ID*.

- c If you plan to run the Bridge definition manually and want Bridge to rename the file after importing data, click the check box **Rename files on manual bridge runs**.
- 7 Click 💾 Save.
- 8 Click **Full View** to hide the group boxes *Data Transfer* and *Options*. Clicking *Full View* again displays these group boxes.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required property settings.

- 9 Select the data item(s) you want to import in PCS Axis. Click Add Data Item to open the Data Items window (Figure 10-7), and then complete the following steps:
  - **a** Open the folder(s) containing the data item(s) you want to import. Repeat this step as needed for other folders. For example, the folders *CPDM* and *Rectifier* are selected in Figure 10-7.

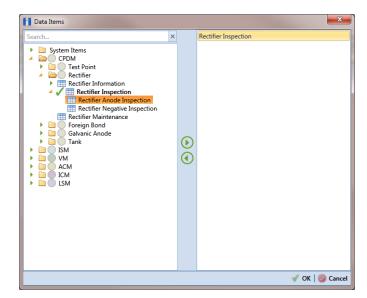


Figure 10-7. Data Items Selected

**NOTE:** The right pane of the *Data Items* window lists all selected data items for import. To remove a data item for import, double-click the data item in the right pane to move it back to the left pane.

- **b** Double-click to select a data item and move it to the right pane of the window. Repeat this step as needed for other data items. For example, the data item *Rectifier Inspection* is selected in Figure 10-7.
- c Click **V** OK to close the dialog box and return to the definition panel.
- d Click 💾 Save.

**10** Identify the location of the import file using the following steps:

- **a** Click the ellipsis button ... in the field **Import File Name** to open the *Import File* dialog box. Navigate to the import file and then select it.
- **b** Click **Open** to close the dialog box and return to the definition panel. The path to the import file displays in the field *Import File Name*.

- 11 To assign inspections to a survey folder based on the inspection date, complete one or both of the following steps in the *Options* group box as required (Figure 10-8):
  - **a** If you want to assign inspections to an annual survey folder, click the check box **Assign inspections to an Annual Survey**.
  - **b** If you want to assign inspections to a periodic survey folder, click the check box **Assign inspections to a Periodic Survey**.

0		dge >		iraphs Tools Field Computer Help	😯 PCS Axis		Welcome John Sm	ith   🖤   🔽 D
	_	Definit						
	1		🗞 Prevalidate 👔 Imp	port 🛛 🔍 Export 🗍 🗍 Copy To Clipboard 🛛 🔮	o Job Status	IB	Save 🔞 Cancel 🗍	Copy 🔀 Delet
			∇ (i) It appears that you	I have some invalid options, please correct the fol	lowing (1)			
			🔛 Full View 🕒 🕀 Add	Data Item				
			>					
			• Rectifier Inspection	Rectifier Inspection				🗡 Delete
			• Necuner Inspection	Import File Name		Filters		/ Edit
				C:\Users\John.Smith\Desktop\Bridge Im	nportVmport Rect.xlsx ····			
				Options				
				Assign inspections to an Annual Survey				
				Assign inspections to a Periodic Survey		No Filt	er Defined	
Š.		suo						
21		Bridge Definitions		Maps			Q, Pre	view 🖌 🥜 Edit
Selected ROWs 		Def		Internal Field	Transition Field	Verify	Import Voltage C	onversion
ee.		lge		🔒 ROW Code		N/A	N/A	
		Brie		Facility ID		N/A	N/A	
				A Milepost		N / A	N/A	
				Inspection Date		N/A	N/A	•
				4	11			• •
							=== R	ow Count: 4
				Validations				
				1. ff [ROW Facility] [ROW Code] is not	mapped to a transition field.			
				2. ff [Facility] [Facility ID] is not mapp				
				3. 🏦 [ROW Links] [Milepost] is not ma				
				4 fracility Inspection) [Inspection D	ate] is not mapped to a transition	on field.		
				4. In tracincy inspection timspection c				
				4. In tracincy inspection (inspection c				
				<ul> <li>a. and it acately inspection (inspection c</li> </ul>				

Figure 10-8. Definition

- **12** To map fields in PCS Axis with fields in the import file, follow these steps:
  - a Click *C* Edit in the *Maps* group box to open a field mapping window (Figure 10-9).

Rectifier Inspection							_ D <mark>* X</mark>
🗡 Delete Map							📔 🟦 Auto Map 🛛 🔍 Preview
Internal Fields	Mappings					_	Transition Fields
Search For Field	Internal F	ield	Transition Field	Verify	Import Voltage Conversion		Sort Alphabetically
<ul> <li>Recurrer inspection rields</li> </ul>	🔒 ROW Cod	le	ROW Code	N/A	N/A	1	Rectifier Output Current Found (Amps)
AC Power Compliance	🔒 Facility ID		Facility ID	NZA	N / A		Rectifier Output Current Left (Amps)
Efficiency	Milepost		Milepost	NZA	N / A		
Ground Bed Resistance	🔒 Inspectio	n Date	Inspection Date	N/A	N / A		
Inspection Date	Rectifier	Output Current Found (Amps)		N/A	Choose a conversion		
Inspection Elevation	Rectifier	Output Current Left (Amps)		N/A	Choose a conversion		
Inspection GPS Accuracy							
Inspection GPS Difference							
Inspection Longitude							
Inspection Remarks						$\odot$	
KWH Meter							i
Number of Surveys In Inspection Year							
Periodic Survey							
Periodic Survey Year     Rectifier Current Adjusted							
Rectifier Current Adjusted Rectifier Output Current Found							
Rectifier Output Current Left							
Rectifier Output Shunt Reading Found							
Rectifier Output Shunt Reading Left     Rectifier Output Volts Found							
Rectifier Output Volts Found						-	
Regulated	•				•	-	
					Row Count:	6	
Scheduling Facility Type Inspected					HI KOW COUNC	×	L
							- 🗸 OK 🛛 🚳 Canc

Figure 10-9. Field Mappings

**NOTE:** Fields in the *Mappings* panel with a lock icon are required fields for mapping, such as *ROW Code*, *Milepost*, *Facility ID*, and *Inspection Date* shown in Figure 10-9.

- **b** Select PCS Axis fields for mapping. Click the **b** toggle arrow for a field category in the *Internal Fields* panel to view a list of available fields. For example, *Rectifier Inspection Fields* is selected in Figure 10-9.
- c Click the check box for one or more PCS Axis fields listed in the *Internal Fields* panel. Then click the () top arrow button to move selections to the *Mappings* panel. Double-clicking a field also moves it to the *Mappings* panel.

For example, the PCS Axis fields *Rectifier Output Current Found (Amps)* and *Rectifier Output Volts Found (Volts)* are selected for mapping in Figure 10-9.

- **d** If you want to sort import fields listed in the *Transition Fields* panel in alphabetical order, click the check box **Sort Alphabetically**.
- e To map PCS Axis fields with fields in the import file, follow these steps:

• Select a PCS Axis field in the *Mappings* panel. Map the selected field to a field in the import file by double-clicking a field listed in the *Transition Fields* panel. Repeat this step for remaining fields you want to map.

**NOTE:** When the **1 Auto Map** button is enabled and the names of fields in the import file match those in PCS Axis, double-clicking a PCS Axis field in the *Mappings* panel automatically maps to an import field listed in the *Transition Fields* panel.

- If the definition is set up to use a facility key, click the **Facility Key** option button in the *Mappings* panel for the field you want to use as the facility key, such as *ROW Code* or *Milepost*.
- If the field *Choose a conversion*... is present in the *Mappings* panel for a pair of mapped fields and you want to apply a conversion option, click the field **Choose a conversion** ... and select an option in the selection list.
- **f** If you want to preview fields for mapping in the import file, click the
   **Q** Preview button to open the import file in the *Preview Maps* window.
- **g** To remove a field mapping in the *Mappings* panel, select the field in the *Mappings* panel and then click **X Delete Map**. Double-clicking the field also removes it. Unmapped fields are moved to the *Internal Fields* panel.
- Click OK to close the mapping window and return to the definition window.
   Then click Save.

Field mappings display in the Maps group box.

14 To validate the definition, click the Prevalidate button. When the validation process completes and the following message displays (Figure 10-10), click to pen the Job Status to open the Job Status window or Return to Definition to open the Definitions window.

**NOTE:** The *Prevalidate* process confirms the definition file is set up correctly; it does not post data in the database. Only the first 1,000 records of the import file will be displayed.

	😵 View Job Status
Validated	G Return to Definition

Figure 10-10. Validated Message

- **15** If you want to manually import data in PCS Axis, complete one of the following steps:
  - a If the *Job Status* window is open, click 🚱 **Run** for a selected import file listed in the *Job Status* window. Then click 😋 **Refresh** to update status information.
  - **b** If the *Definitions window* is open for the import file, click **\* Import**.
- **16** To view the status of a Bridge session, click **Solution Job Status** in the *Definitions window* to open the *Job Status* window (Figure 10-11, page 502). Clicking **Log** for a Bridge session opens the log file for the selected session.

**NOTE:** For a description of the icons and colors used in Job Status, see *Icons and Colors Used in Bridge Job Status* (page 559).

E	Definitio			-   Da	ate range: Today	-					
	Deminut	on	Туре		Queue Time	Validation Time	End Time	State	Log Error	Delete	
•	My Bull	horn Bridge	Bullho	orn	12/17/2013 10:07:09 AM	12/17/2013 10:08:20 AM	12/17/2013 10:08:20 AM	Validated		×	-
	My Brid	ge Import Expor	t1 Bridge	e - Export	12/17/2013 10:02:50 AM		12/17/2013 10:02:51 AM	Completed			
	My Brid	ge Import Expor	1 Bridge	e - Import	12/17/2013 10:02:24 AM		12/17/2013 10:02:44 AM	Completed			
	My Brid	ge Import Expo	L1 Bridge	e - Import	12/17/2013 10:01:31 AM	12/17/2013 10:01:47 AM	12/17/2013 10:01:47 AM	Validated		X	
	My Brid	ge Import_1	Bridge	e - Import	12/17/2013 9:58:56 AM	12/17/2013 9:59:09 AM	12/17/2013 9:59:09 AM	Validated		X	
	My Brid	ge Export_1	Bridge	e - Export	12/17/2013 9:54:37 AM		12/17/2013 9:54:41 AM	Completed			
	My Bull	horn Bridge	Bullho	orn	12/17/2013 9:50:33 AM	12/17/2013 9:51:47 AM	12/17/2013 9:51:47 AM	Validated		X	
Data		lectifier	•								
			lilepost	Facility ID	Rectifier Output Volts	Found (Volts) Rectifier O	utput Current Found (Amps			Inspection Rema	rks
		PLG123C	1+10 1+10	AR234	10.70347847417 12.2698419727385			2013-11-3		Bullhorn Import Bullhorn Import	- 1
	÷ /		1+00	AR100	1212030423727303	-0.00383964	243155788	2013-12-1		Bullhorn Import	
	2	🔍 LG123C				0.007/702	3486311575	A 2013-12-0	7712.22.42	Bullhorn Import	
		2 LG123C	1+00	R100		-0.00767922	1400311373		/110.00.42	builton import	
	3 4		1+00 1+10 1+00		0	-0.00767922		2013-12-1 2013-11-3	4T13:18:49	Bullhorn Import Bullhorn Import	

Figure 10-11. Job Status

- **17** To copy the Bridge definition to a file, such as a Notepad or Microsoft Word file, follow these steps:
  - a Click the **Definitions** tab if the *Definitions window* is not open.
  - **b** Click Copy to Clipboard.
  - c Start the software program, such as Notepad or Microsoft Word.
  - d Open a new file and then Paste the definition file. Click Save.

## Adding a Bridge Import Definition for an SDL Survey File

Information in this section explains how to set up a Bridge definition for importing one or more stationary data logger (SDL) survey files. The Bridge definition specifies property settings and options for importing data in PCS Axis; defines the data transfer options; and identifies the location of the SDL survey file(s).

**IMPORTANT:** *Bridge Import* is an optional add-on that requires an activation key for operation. Running *Bridge Import* for the first time requires you to enter your Bridge activation key. If you are unable to locate your Bridge activation key, contact PCS Technical services for assistance at <u>pcstechservices@aiworldwide.com</u>. For more information, refer to *Activating Bridge Import for Operation* (page 15).

To add a Bridge Import definition and import an SDL survey file, follow these steps:

- Select one or more pipeline segments in the Select ROWs window. Select pipeline segment(s) you want to import SDL survey files. Click Save to close the window (Figure 10-3, page 494).
- 2 Click **Tools** > **Bridge** to open the *Bridge* window (Figure 10-12).

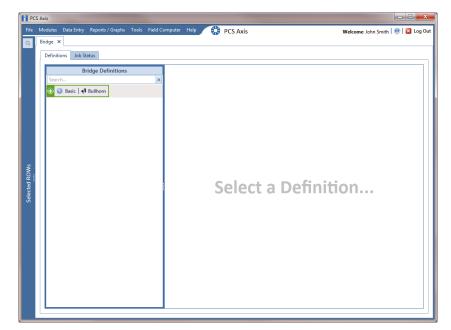


Figure 10-12. Bridge Import Definition

**3** Click **Basic** to open the basic definition panel. Then click the title bar of the *Bridge Definitions* panel to hide the panel. (Figure 10-13).

PCS Axis	s Data Entry Reports / Graphs Tools Field Computer Help 🛛 🙀 PCS A	xis Welcome John Smith   @   🖬 kag Ok
Bridge Defin		
	🔗 Prevalidate   🎱 Import   🔒 Export   🗍 Copy To Clipboard   🎭 Job Status	🎦 Save   🛞 Cancel   🗍 Copy   🗡 Delete
	∇ (i) It appears that you have some invalid options, please correct the following (3)	
	Name	Filters / Edit
	😣 Enter a unique name	
	Data Transfer	
	Import 🔇 🗌 Scheduled 12:00 AM	
	Export S Scheduled 12:00 AM	
		No Filter Defined
	From Selected ROWs, export: All Records	No Filter Defined
	Options	
dge Definitions	Public Use Facility Key 🛄 Rename files on manual bridge runs.	
Bridge Definitions	🔛 Full View   🔿 Add Data Item	
Bridg		ems Defined

Figure 10-13. Basic Definition Panel

- 4 Type a unique name for the definition in the Name field (Figure 10-14, page 505).
- **5** Complete the following steps to set properties in the *Data Transfer* group box (Figure 10-14, page 505):
  - a Click the Import check box.

**NOTE:** Because SDL imports are typically run manually "on demand", setting property settings for *Scheduled* option are not required.

**b** Click the check box **Reindex after import** to reindex the PCS Axis database after the import process completes.

**IMPORTANT:** Enabling this option prevents index fragmentation from occurring in the PCS Axis database, which in turn may result in slow system performance. Index fragmentation may occur after importing large amounts of data in PCS Axis using *Bridge Import*, *Bullhorn Bridge*, or *Field Computer*. You can also reindex the database using the option *Reindex Database* in Job Service Viewer (Tools > Job Service Viewer).

PC	CS Axi	s		
File		dules	Data Entry Reports / Graphs Tools Field Computer Help	xis Welcome John Smith   😕   🛛 Log Out
a	Brid	dge 🕽	x	
	Ĺ	Definit	ions Job Status	
		Jennit		
			🗞 Prevalidate 🛛 Import 🛛 🕃 Export 🗍 Copy To Clipboard 🗣 Job Status	💾 Save   🚳 Cancel   🗍 Copy   🗡 Delete
			∇ (i) It appears that you have some invalid options, please correct the following (1)	
			Name My SDL Survey Import_1	Filters 🖉 Edit
			Data Transfer	
			Import Scheduled 12:00 AM	
			Export Scheduled 12:00 AM	No Filter Defined
			From Selected ROWs, export: All Records	No Filter Defined
			Options	
×s S		suc	🗹 Public 🔲 Use Facility Key 📃 Rename files on manual bridge runs.	
S S		initi		
Selected ROWs		Defi	🚼 Full View 🛛 🔿 Add Data Item	
Sele		Bridge Definitions	No Data Ite	ems Defined

Figure 10-14. Bridge Import Definition

- **6** Complete the following steps to set properties in the *Options* group box (Figure 10-14):
  - **a** Click the **Public** check box if you want the import definition file available for use by all PCS Axis users. When the check box is empty, the definition file is available only to the user who creates it.

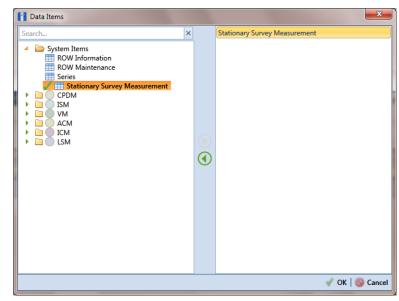
**NOTE:** The option labeled *Use Facility Key* does not apply when using Bridge to import SDLs. See *Using a Facility Key in Bridge* (page 492) for more information if needed.

- **b** If you want the Bridge import process to rename the import file after importing data, click the check box **Rename files on manual bridge runs**.
- 7 Click **Save** and then click **Full View** to hide the group boxes *Data Transfer* and *Options*. Clicking *Full View* again displays these group boxes.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required property settings.

- 8 Select the PCS Axis data item used to import SDL survey files. Click Add Data Item to open the *Data Items* window and then complete the following steps (Figure 10-7):
  - **a** Click the **b** toggle arrow to open the **System Items** folder (Figure 10-15).
  - **b** Double-click **Stationary Survey Measurement** to move the data item to the right pane of the window.

**NOTE:** The right pane of the *Data Items* window lists all selected data items for import. To remove a data item for import, double-click the data item in the right pane to move it back to the left pane.



**c** Click **V OK** to close the dialog box and return to the definition panel.

Figure 10-15. Data Items

- 9 Click 💾 Save to save the definition file.
- **10** Complete the following steps to identify the location of the SDL survey file(s) (Figure 10-16):
  - a Click the ellipsis button ... in the field Import File Name.
  - **b** When the *Import File* dialog box opens, navigate to the SDL survey file(s) and select each one you want to import. Then click **Open**.

	Definit	ions Job Status					
		🗞 Prevalidate 🛛 🕼 Import 🛛 🔜 Exp	ort   📋 Copy To Clipboard   🎭 Job Statu	5	🔡 Sav	ve   🛞 Cancel   🗍 Cop	y   🗡 Dele
		$ abla \left( ig)  ight)$ It appears that you have some inv	valid options, please correct the following (1)				
		🔀 Full View 🕒 Add Data Item					
		•					
		Stationary Survey Measurement	Stationary Survey Measurement			I	🗡 Delete
			Import File Name		Filters		🖉 Edit
			8				
			Options				
			Assign inspections to an Annual Survey				
			Assign inspections to a Periodic Survey	6	No Filte	r Defined	
	8						
	tions		Mana				1.4.5.0
	efinitions		Maps			Q Preview	-
	e Definitions		Internal Field	Transition Field	Verify	Import V	oltage (
	idge Definitions		Internal Field	Transition Field	N/A	Import V N / A	·
	Bridge Definitions		Internal Field  ROW Code  Milepost	Transition Field	N/A N/A	Import V N / A N / A	oltage (
	Bridge Definitions		Internal Field ROW Code Milepost Survey Name	Transition Field	N/A N/A N/A	Import V N / A N / A N / A	oltage (
	Bridge Definitions		Internal Field ROW Code Milepost Survey Name Survey Name	Transition Field	N/A N/A N/A N/A	Import V N / A N / A	'oltage (
	Bridge Definitions		Internal Field & ROW Code & Milepost & Survey Name & Survey Date/Time & Measurement Index	Transition Field	N/A N/A N/A	Import V N / A N / A N / A	'oltage (
	Bridge Definitions		Internal Field ROW Code Milepost Survey Name Survey Name	Transition Field	N/A N/A N/A N/A	Import V N / A N / A N / A N / A	ioltage (
	Bridge Definitions		Internal Field & ROW Code & Milepost & Survey Name & Survey Date/Time & Measurement Index	Transition Field	N/A N/A N/A N/A	Import V N / A N / A N / A	ioltage (
	Bridge Definitions		Internal Field & ROW Code & Milepost & Survey Name & Survey Date/Time & Measurement Index	Transition Field	N/A N/A N/A N/A	Import V N / A N / A N / A N / A	ioltage (
****	Bridge Definitions		Internal Field ROW Code ROW Code Survey Name Survey Name Messurement Index	Transition Field	N/A N/A N/A N/A	Import V N / A N / A N / A N / A	ioltage (
****	Bridge Definitions		Internal Field Internal Field Megoot Survey Name Survey Name Megoot Megoot Megoot Megoot Megoot Validations Validations		N/A N/A N/A N/A	Import V N / A N / A N / A N / A	ioltage (
****	Bridge Definitions		Internal Field Internal Field Milepot Milepot Survey Date/Time Milepot Messurement Index Miledations I Molimot File defined. The Constrainty [ROW Code] is not Simplify [ROW Code] is not Milepost file defined, Simplify [ROW Code] is not Milepost file Milepost file	t mapped to a transition fits	N / A N / A N / A N / A N / A Id.	Import V N / A N / A N / A N / A	ioltage (
****	Bridge Definitions		Internal Field Internal Field Megost Megost Survey Name Survey Name Messurement Index Validations 1. Po No import file defined. 2. mm [ROW Facility] (ROW Code) is not	t mapped to a transition file not mapped to a transition	N / A N / A N / A N / A N / A N / A N / A	Import V N / A N / A N / A N / A	ioltage (

Figure 10-16. Select SDL Import File

**11** When the *Stationary Survey(s)* window opens (Figure 10-17, page 507), select the SDL survey file and then click the **Snap To Facility** button to open the *Snap To Facility* window (Figure 10-18, page 508).

**NOTE:** A yellow Snap To Facility button indicates the SDL survey file is matched to an unregistered milepost location. A green Snap To Facility button indicates the SDL survey file has been automatically matched to a milepost location already established in PCS Axis. A blue Snap To Facility button indicates a match was not found for the pipeline segment or pipeline Series.

	ROW Code	Milepost	Series Number	Relative Milepost	Survey Date	Name	Snap To Facility		
Þ	LG123-A	25220		25.220	6/7/2013	SDLA0033_2013_upstream	📫 LG123-A :	25220	
1									Þ
								Row Cour	_
96									

Figure 10-17. Stationary Survey(s)

**12** When the milepost location of the SDL survey *does not* match a pipeline segment already established in PCS Axis, it is identified as an *UnRegistered Milepost* (Figure 10-18).

When the milepost location of the SDL survey *does* match an existing pipeline segment in PCS Axis, use the *Snap To Facility* window to match the SDL survey to a milepost location on the pipeline segment. This process ensures telluric compensation calculations are accurate.

To match the SDL survey to an existing milepost location, follow these steps:

- a Click Existing Facilities to enable the grid for use (Figure 10-18).
- **b** If the pipeline segment is not selected in the **ROW** field, click the down arrow and select the pipeline segment in the selection list.
- **c** Select a milepost record in the grid and then click **V OK** to snap the SDL survey to the selected milepost.

OW Code	LG123-A				
Ailepost	25220				
eries Number	Series Number				
elative Milepost					
xisting Facilities					
ROW Code	Milepost	Series Number	Relative Milepost		
LG123-A	1.967		1.967		
LG123-A	3.816		3.816		
LG123-A	5.733		5.733		
LG123-A	7.700		7.700		
LG123-A	9.794		9.794		
LG123-A	11.659		11.659		
LG123-A	12.878		12.878		
LG123-A	15.191		15.191		
LG123-A	17.117		17.117		
LG123-A	18.962		18.962		
LG123-A	20.572		20.572		
<ul> <li>LG123-A</li> </ul>	23.079		23.079		
LG123-A	25.144		25.144		
LG123-A	26.950		26.950		
LG123-A	28.423		28.423		
					ERow Cor

Figure 10-18. Snap To Facility

**13** When the *Stationary Survey(s)* window opens, click **Process Files** to automatically map data fields in the SDL survey with data fields in PCS Axis (Figure 10-19).

im 📫 LG123-A :	6/7/2013 SDLA0033_2013_upstream	23.079
23.079 6/7/2013 SDLA0033_2013_upstrea	25.079	25.079 0/7/2015 SDLA0055_2015_upstream 4 Ed125-A :

Figure 10-19. Process Files / Stationary Survey(s)

After processing files, the definition window opens. The *Maps* group box includes a list of field mappings in the columns labeled *Internal Field* (PCS Axis) and *Transition Field* (SDL survey) as shown in the following example (Figure 10-20).

Defini	tions Job Status					
	🗞 Prevalidate 🔰 Import   退 Exp	ort   🗍 Copy To Clipboard   🎭 Job Sta	tus		💾 Save   🛞 Cancel   🗍 C	opy   🗡 Del
	🔀 Full View 🖨 Add Data Item					
	▶ ✓ Stationary Survey Measurement	Stationary Survey Measurement	:			🗡 Delete
	<ul> <li>Stationary survey Measurement</li> </ul>	Import File Name		Filters		/ Edit
			Iridge Import\SDLA0033_2013_upstre			1 2 Cure
		Options				
		Assign inspections to an Annual Su	rvey.			
		Assign inspections to a Periodic Sur		Na	Filter Defined	
				INC	Filter Defined	
		Maps			🔍 Prev	iew   🥜 Edit
Bridge Definitions		Internal Field	Transition Field	Verify	Import Voltage Conversion	
init:		ROW Code	rowcode	N/A	N/A	<b>^</b>
Def		Milepost	milepost	N/A	N/A	
ge		Survey Name	name	N / A	N / A	
Brid		Survey Date/Time	surveydate	N/A	N / A	_
		Measurement Index	measurementindex	N/A		_
		Pipe	pipeid	N / A	N / A	
		Series Id Caption	seriesid	N/A N/A	N/A	
		On Voltage	onvoltage			_
		Off Voltage	offvoltage	N/A		_
		AC On Voltage	aconvoltage	N / A		_
		AC Off Voltage	acoffvoltage	N/A		
		On Date/Time	ontime	N/A	N/A	
		Off Date/Time	offtime	N/A	N/A	-
		<u> </u>				
					Rov	w Count: 13
		Validations				

Figure 10-20. Bridge Definition

- **14** If you want to apply an **Import Voltage Conversion** filter to survey measurements (such as *On Voltage* survey measurements), complete the following steps:
  - a Click *F* Edit in the *Maps* group box to open the *Stationary Survey Measurement* dialog box (Figure 10-21).

Internal Fields		Ma	ppings					_	Transition Fields
earch For Field	×		Internal Field	Transition Field	Verify	Import Voltage Conversion			Sort Alphabetically
All Fields		Þ	🔒 ROW Code	rowcode	N/A	N/A			
			Milepost	milepost	N/A	N/A			
			🔒 Survey Name	name	N/A	N / A			
			Survey Date/Time	surveydate	N / A	N / A			
			Measurement Index	measurementindex	N/A	Choose a conversion	*		
			Pipe	pipeid	N/A	N/A			
			Series Id Caption	seriesid	N/A	N/A	_		
			On Voltage	onvoltage	N/A	Choose a conversion	*		
	$\mathbf{U}$		Off Voltage	offvoltage	N/A	Choose a conversion	*		
			AC On Voltage	aconvoltage	N/A	Choose a conversion	*		
			AC Off Voltage	acoffvoltage	N/A	Choose a conversion	*		
			On Date/Time	ontime	N/A	N/A			
			Off Date/Time	offtime	N/A	N/A			

Figure 10-21. Stationary Survey Measurement

- Select a survey measurement field in the grid. Then click the down arrow in the Import Voltage Conversion field and select one of the following filter options in the selection list (Figure 10-22, page 511).
  - No Conversion
     Does not apply a voltage conversion filter.
  - (# \* 0.001) Convert mV to V
     Converts millivolt measurements to volts.
  - (# \* 1000) Convert V to mV
     Converts voltage measurements to millivolts.
  - (# \* -1) Invert polarity Reverses the polarity of survey measurement.
  - (# \* -0.001) Invert polarity and convert mV to V Reverses the polarity and converts millivolt measurements to volts.
  - (# \* -1000) Invert polarity and convert V to mV Reverses the polarity and converts voltage measurements to millivolts.
- **c** Click **V OK** to apply settings and close the *Stationary Survey Measurement* dialog box.

🗙 Delete Map							🟦 Auto Map   🔍 Pre
Internal Fields		Maj	ppings				Transition Fields
Search For Field	×		Internal Field	Transition Field	Verify	Import Voltage Conversion	Sort Alphabetically
All Fields			ROW Code	rowcode	N/A	N/A	version
			Milepost	milepost	N / A	N / A	deviceclass
			🔒 Survey Name	name	N/A	N / A	description
			Survey Date/Time	surveydate	N/A	N / A	serialnumber
			Measurement Index	measurementindex	N/A	Choose a conversion	selecteduom
			Pipe	pipeid	N/A	N / A	hasonreading
			Series Id Caption	seriesid	N / A	N / A	hasoffreading
		Þ	On Voltage	onvoltage	N/A	Choose a conversion	datano
			Off Voltage	offvoltage	N/A	No Conversion	reformindex
			AC On Voltage	aconvoltage	N/A	(# * 0.001) - Convert mV to V	
			AC Off Voltage	acoffvoltage	N/A	(# * 1000) - Convert V to mV	
			On Date/Time	ontime	N / A	(# * -1) - Invert polarity	
			Off Date/Time	offtime	N / A	(# * -0.001) - Invert polarity and convert m	
						(# * -1000) - Invert polarity and convert V	to mV
						Row Count: 13	

Figure 10-22. Stationary Survey Measurement

- **15** To assign the SDL survey to a survey folder based on the survey date, complete one or both of the following steps in the *Options* group box as required (Figure 10-20, page 509):
  - **a** If you want to assign the SDL survey to an annual survey folder, click the check box **Assign inspections to an Annual Survey**.
  - **b** If you want to assign the SDL Survey to a periodic survey folder, click the check box **Assign inspections to a Periodic Survey**.
  - c Click 💾 Save to save the definition file.
- 16 To validate the Bridge definition, click the Prevalidate button. When the validation process completes and the following message displays, click View Job Status to open the *Job Status* window or Return to Definition to open the *Definitions window* (Figure 10-23).

**NOTE:** The *Prevalidate* process confirms the definition file is set up correctly; it does not post data in the database. Only the first 1,000 records of the import file will be displayed.

	💡 View Job Status
Validated	G Return to Definition

Figure 10-23. Validated Message

- 17 To import the SDL survey in PCS Axis, click **Import** in the *Definitions* window (Figure 10-20, page 509).
- **18** To view the status of the Bridge session, click **C** Job Status in the Definitions window to open the Job Status window (Figure 10-24, page 512). Clicking **Log** for a Bridge session opens the log file for the selected session.

**NOTE:** For a description of the icons and colors used in Job Status, see *lcons and Colors Used in Bridge Job Status* (page 559).

	es Data E	intry Report	ts / Graphs To	ools Field Computer	Help	OR Axis				Welcome John Sm	nith   🕑   🔀 I
0.0		ob Status									
Deti	nitions	ob Status									
5	Refresh	Definition	My SDL Import	1 • Date range:	Today	*					
	Definit	ion	Туре	Queue Time		Validation Time	End Time	State	Log Error	Delete	
•	My SDI	Import_1	Bridge - Imp	ort 11/25/2014 2	:23:08 PM	11/25/2014 2:30:09 PM	11/25/2014 2:30:09	PM Validated		×	
										E	Row Count: 1
Da	ta Items		-								
	Row	ROW Code	Pipe	ROW Effective Date	Series Nur	mber point_caption	Alpha Caption	Series Id Caption	Survey Date/Time	Survey Name	Milepost
•	0	ALG123-A	A 1	A		23079000000		<i>.</i>	A2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream	23.079
	1	👷 LG123-A	<b>R</b> 1	2	2	23079000000	2		2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream	23.079
	2	👷 LG123-A	<b>P</b> 1	2	2	23079000000	2	2	X 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream	23.079
	3	📯 LG123-A	921	92	9	23079000000	8	92	X 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream	23.079
	4	👷 LG123-A	921	92	9	<b>X</b> 23079000000	8	<b>X</b>	X 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream	23.079
	5	📯 LG123-A	921	92	9	23079000000	8	<b>X</b>	X 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream	23.079
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	•		921	92	2	23079000000	<b>X</b>	<b>X</b>	2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream	23.079
	7	📯 LG123-A				230790000000				SDLA0033 2013 upstream	23.079
	-	R LG123-A R LG123-A	<b>9</b> 1	9	×	23079000000	- <b>X</b> 1	<b>X</b>	X 2013-06-07T12:14:20.1080000	and the second second second second	23.079
	7	CG123-A	2 1 2 1	<b>哭</b> 哭	<u>%</u>	230790000000		ŵ	2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream	23.079
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	7 8 9 10 11	LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A	R1 R1 R1 R1 R1 R1 R1			230790000000 230790000000 230790000000 230790000000	*****	2 2 2	2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream	23.079 23.079 23.079
	7 8 9 10 11 12	LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A	<b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1		**************************************	23079000000           23079000000           23079000000           23079000000           23079000000           23079000000	****	R R R R	2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream	23.079 23.079 23.079 23.079 23.079
	7 8 9 10 11 12 13	LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A	<b>R</b> 1 <b>R</b> 1 <b>R</b> 1	<u>ም</u> ም ም ም ም ም	* * * * * *	23079000000           23079000000           23079000000           23079000000           23079000000           23079000000           23079000000           23079000000	RRRRRR	R R R R R	2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream	23.079 23.079 23.079 23.079 23.079 23.079
	7 8 9 10 11 12 13 14	LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u>ም</u> ምም ምም ምም ምም ምም	**************************************	23079000000 23079000000 23079000000 23079000000 23079000000 23079000000 23079000000	R R R R R R R R R	R R R R R R	2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream	23.079 23.079 23.079 23.079 23.079 23.079 23.079
	7 8 9 10 11 12 13 14 15	LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A LG123-A	<b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1 <b>R</b> 1	<u>ም</u> ም ም ም ም ም	**	23079000000 23079000000 23079000000 23079000000 23079000000 23079000000 23079000000	***	R R R R R R	2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000 2013-06-07T12:14:20.1080000	SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream SDLA0033_2013_upstream	23.079 23.079 23.079 23.079 23.079 23.079 23.079 23.079

Figure 10-24. Job Status

- **19** To copy the Bridge definition to a file, such as a Notepad or Microsoft Word file, follow these steps:
  - a Click the **Definitions** tab if the *Definitions* window is not open.
  - **b** Click **Copy to Clipboard**.
  - c Start the software program, such as Notepad or Microsoft Word.
  - d Open a new file and then Paste the definition file. Click Save.

## Adding a Bridge Export Definition

A Bridge export definition specifies the property settings and options for exporting data from PCS Axis. It defines the data transfer options; file format and location of the export file; and the data to be exported.

**NOTE:** Bridge currently supports use of a facility key only in a Bridge import file. Future enhancements will include use of a facility key in a Bridge export file.

To add a Bridge export definition, follow these steps:

Select one or more pipeline segments in the Select ROWs window. Select pipeline segment(s) with facilities you want to include in the Bridge definition. Click Save to close the window (Figure 10-25).

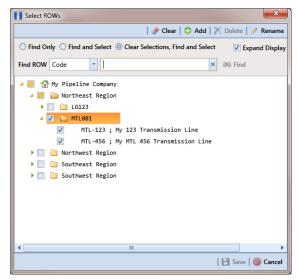


Figure 10-25. Select ROWs

2 Click **Tools** > **Bridge** to open the *Bridge* window (Figure 10-26, page 514)

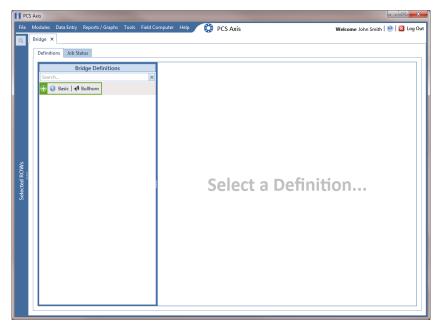


Figure 10-26. Bridge

3 Click 📦 Basic to open the basic definition panel (Figure 10-27).

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required property settings.

PCS	Axis		
File	Modules Data Entry Reports / Graphs Tools Field	Computer Help 🚯 PCS Axis	Welcome John Smith   🕑   🔀 Log Out
Q	Bridge ×		
	Definitions Job Status		
	Bridge Definitions	🚱 Prevalidate 🍟 Import 🗟 Export 🗍 Copy To Clipboard 🎭 Job Status	Save   🚳 Cancel   🗍 Copy   🗙 Delete
	Search	∇ (i) It appears that you have some invalid options, please correct the following 3)	
	🕀 📦 Basic 🛛 📣 Bullhorn	Name Filters	🖉 Edit
		Data Transfer	
		Import Scheduled 12:00 AM	
		Export 8 Scheduled 12:00 AM	
		From Selected ROWs, export: All Records	No Filter Defined
		Options	
		Public 🔝 Use Facility Key 🔄 Rename files on manual bridge runs.	
SNs SNs			
d RC		Full View O Add Data Item	
Selected ROWs		No Data Items De	fined

Figure 10-27. Basic Bridge Definition

**4** Type a unique name for the definition in the **Name** field (Figure 10-28, page 516).

**NOTE:** Clicking the *Bridge Definitions* bar collapses the panel allowing you to view more of the definition. Clicking the bar again expands the panel.

- **5** To set properties in the *Data Transfer* group box, follow these steps (Figure 10-28, page 516):
  - a Click the **Export** check box.
  - **b** If you want PCS Axis to automatically run the export file at a scheduled time, click the **Scheduled** check box and then type a scheduled time in the adjacent field. Enter a scheduled time using 12-hour time format to specify the hour, minute, and AM/PM setting (HH:MM AM or PM).

**IMPORTANT:** When scheduling a time to run *Bridge*, choose a time that does not impact other network services or computer resources. For example, consider a staggered time schedule instead of running *Bridge* at the same time as other scheduled network services.

c Select which records to export. Click the down arrow in the field From
 Selected ROWs, export and select an option in the selection list, such as All Records.

**NOTE:** When the export file is not scheduled to run automatically, it is a manual Bridge definition. You can run the export file manually by clicking the **Report** button in the *Definitions window*.

- **6** To set properties in the *Options* group box, follow these steps (Figure 10-28, page 516):
  - **a** Click the **Public** check box if you want the export definition available for use by all PCS Axis users. When the check box is empty, the export definition is available only to the user who creates it.

**IMPORTANT:** Do not enable the option *Use Facility Key* in an export definition. Bridge does not currently support this option in the export file.

- b If you plan to run the Bridge definition manually and want Bridge to rename the file after exporting data, click the check box Rename files on manual bridge runs.
- 7 Click 💾 Save.

PCS Axis	s Data Entry Reports / Graphs Tools Field Computer Help 🔗 PCS Axis	Welcome John Smith   🕑   🔀 Log C
Q Bridge	x	
Defin	itions Job Status	
	🗞 Prevalidate 🛛 Import 🛛 🗟 Export 🗍 🗍 Copy To Clipboard 🖓 Job Status	💾 Save   🚳 Cancel   🗇 Copy   🗡 Delete
	(i) It appears that you have some invalid options, please correct the following (1) Name	
	My Bridge Export_2	Filters / Edit
	Data Transfer	
	Import Scheduled 12:00 AM	
	Export Scheduled 12:00 AM	
		No Filter Defined
	From Selected ROWs, export: All Records -	
	Options	
	Public Use Facility Key Rename files on manual bridge runs.	
	E Full View O Add Data Item	
Bridge Definitions	No Data Ite	ems Defined

Figure 10-28. Bridge Export Definition

8 If you want to set up one or more filters that apply to *all* data items in the export definition, click *Filter* **Edit** in the *Filters* group box to open the *Edit Filter* dialog box (Figure 10-29).

**NOTE:** You can also apply filters to a selected data item instead of all data items in the export definition. Information is provided later in **step 15** on page 521.

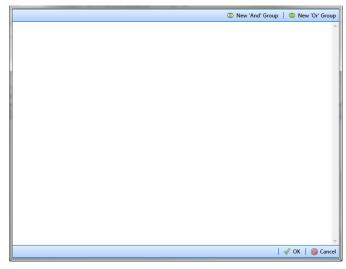


Figure 10-29. Edit Filter

- **9** If you want to include a subset of records in the export file that meet *all* filter conditions, create an AND filter group using the following steps:
  - a Click () New 'And' Group to open the filter properties group box (Figure 10-30).
  - **b** Type a name for the filter group in the field **Filter Group Caption**.

Edit Filter	×
(1) New 'And' Gro	up   🔘 New 'Or' Group
My Filter Group Caption	0   X   0
X Milepost Is missing	
Image: Second secon	×
	v
	√ OK   🚫 Cancel

Figure 10-30. New 'And' Filter Group

- **c** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- **d** If you want the filter to remain on for all sessions of the export definition, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- e Type a name for the filter in the field Enter Custom Filter Caption.
- **f** If you want to set up additional filter criteria for the filter group:
  - Click the **G** Add button to open another filter properties group box.
  - Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 9 c** through **e** to set up filter criteria.
- **10** If you want to include a subset of records in the export definition that meet *any* filter condition, create an OR filter group using the following steps:
  - a Click () New 'Or' Group to open a filter properties group box (Figure 10-31, page 518).
  - **b** Type a name for the filter group in the field **Include records that match any of these conditions**.
  - **c** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

New 'And' Group      New 'And' Group     New 'Or 'Group Caption     New 'And' Group     New 'Or 'Group Caption     Include records that match any of these conditions     Include records that match any of these conditex (Include records that match any of these conditions     Includ	lepost Is missing ude records that match any of these conditions		<ul> <li>New 'Or' Gro</li> <li>New 'Or' Gro</li> </ul>
	lepost Is missing ude records that match any of these conditions		
Include records that match any of these conditions Include records that match any of the any	ude records that match any of these conditions		
	scility Active Is equal to No		
Facility Active Is equal to No           Filter Is Always On           Facility Active           Facility Active           Is equal to           No			•   X
Facility Active	Filter Ir Alwayr On		
··· Facility Active • Is equal to • No •	Filter to Always Off		X
Enter Custom Filter Caption	Facility Active	*	
	ter Custom Filter Caption		

Figure 10-31. New 'Or' Filter Group

- **d** If you want the filter to remain on for all sessions of the export definition, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- e Type a name for the filter in the field Enter Custom Filter Caption.
- **f** If you want to set up additional filter criteria for the filter group:
  - Click the **G** Add button to open another filter properties group box.
  - Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 10 c** through **e** to set up filter criteria.
- **11** Click **V OK** to close the *Edit Filter* dialog box and return to the definition window.

**NOTE:** Filter settings apply automatically when the export definition is set up to run at a scheduled time. When the export definition is run manually, a dialog box opens allowing you to select which filters to apply before running the export definition.

- **12** Click **Save** and then click **Full View** to hide the group boxes *Data Transfer, Options,* and *Filters.* Clicking *Full View* again displays these group boxes.
- **13** Select the data item(s) you want to export from PCS Axis. Click **Add Data Item** to open the *Data Items* window and then complete the following steps (Figure 10-32, page 520):
  - **a** Open the folder(s) containing the data item(s) you want to export. Repeat this step as needed for other folders. For example, the folders *CPDM* and *Rectifier Inspection* are selected in the next figure.
  - **b** Double-click to select a data item and move it to the right pane of the window. Repeat this step as needed for other data items. For example, the data item *Rectifier Inspection* is selected for exporting in the next figure.

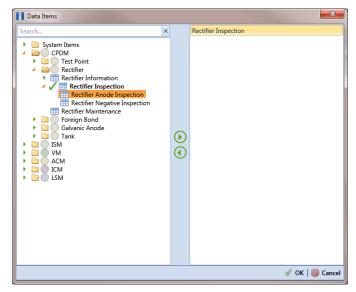


Figure 10-32. Data Items

**NOTE:** The right pane of the *Data Items* window lists all selected data items for export. To remove a data item for export, double-click the data item in the right pane to move it back to the left pane.

c Click **V** OK to close the dialog box and return to the definition window (Figure 10-33). Then click **Save**.

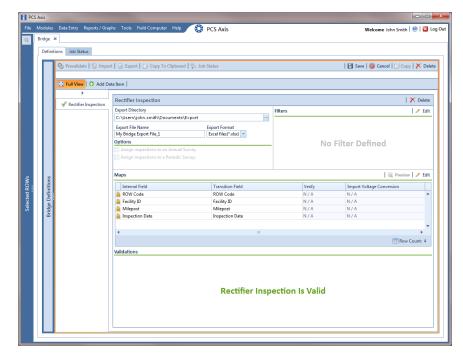


Figure 10-33. Bridge Definition

- **14** Select a file format and a location to save the export file using the following steps:
  - a Click the ellipsis button ... in the field Export Directory to open the Browse For Folder dialog box. Navigate to a folder on your computer where you want to save the export file. Then click OK to close the dialog box and return to the definition window.
  - **b** Type a name for the export file in the field **Export File Name**. Then click the down arrow in the field **Export Format** and select a file format for the export file. Options include *Excel files* (\*.*xlsx*) and *Text files* (\*.*txt*, \*.*csv*).
  - c Click 💾 Save.
- **15** If you want to set up one or more filters that apply *only* to the currently selected data item, follow these steps:
  - **a** If more than one data item is included in the export file, select a data item in the menu on the left side of the window.
  - Click *F* Edit in the *Filters* group box to open the *Edit Filter* dialog box (Figure 10-34).

Edit Filter	
	💿 New 'And' Group   💿 New 'Or' Gro
	🗹 OK   🚳 Can

Figure 10-34. Edit Filter

- **16** If you want to include a subset of records in the export file that meet *all* filter conditions, create an AND filter group using the following steps:
  - a Click () New 'And' Group to open the filter properties group box (Figure 10-35, page 522).
  - **b** Type a name for the filter group in the field **Filter Group Caption**.

Edit Filter	×
New 'And' Gro	up   🧔 New 'Or' Group
My Filter Group Caption	0   X   Û
X Milepost Is missing	
V Filter Is Always On	×
Enter Custom Filter Caption	
	√ OK   🚳 Cancel

Figure 10-35. New 'And' Filter Group

- **c** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- **d** If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- e Type a name for the filter in the field Enter Custom Filter Caption.
- **f** If you want to set up additional filter criteria for the filter group:
  - Click the 🛟 Add button to open another filter properties group box.
  - Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 16 c** through **e** to set up filter criteria.
- **17** If you want to include a subset of records in the export file that meet *any* filter condition, create an OR filter group using the following steps:
  - a Click () New 'Or' Group to open a filter properties group box (Figure 10-36, page 523).
  - **b** Type a name for the filter group in the field **Include records that match any of these conditions**.
  - **c** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

Edit Filter	X
Q	🕽 New 'And' Group   🧔 New 'Or' Group
My Filter Group Caption	0   X
Milepost Is missing	
Include records that match any of these conditions	
Facility Active Is equal to No	
Filter Is Always On Facility Active Is equal to No	×
	·
Enter Custom Filter Caption	
	🖋 OK   🚳 Cancel

Figure 10-36. New 'Or' Filter Group

- **d** If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- e Type a name for the filter in the field Enter Custom Filter Caption.
- **f** If you want to set up additional filter criteria for the filter group:
  - Click the 🛟 Add button to open another filter properties group box.
  - Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 17 c** through **e** to set up filter criteria.
- **18** Click **V** or **K** to close the *Edit Filter* dialog box and return to the definition window.

**NOTE:** Filter settings apply automatically when the export file is set up to run at a scheduled time. When the export file is run manually, a dialog box opens allowing you to select which filters to apply before running the export file.

## 19 Click 💾 Save.

20 To select the data you want to export from PCS Axis, complete the following steps:

a Click *F* **Edit** in the *Maps* group box to open a field selection dialog box (Figure 10-37, page 524).

- **b** Click the toggle arrow ▶ for a field category listed in the *Internal Fields* panel to view a list of available fields. In the following example, *Rectifier Inspection Fields* is selected (Figure 10-37).
- **c** Select one or more fields and then click the top arrow button  $\bigcirc$  to move fields to the *Mappings* panel. Double-clicking a field also moves it to the *Mappings* panel.
- **d** If the definition is set up to use a facility key, click the **Facility Key** option button in the *Mappings* panel for the field you want to use as the facility key, such as *ROW Code* or *Milepost*.
- e If the field *Choose a conversion*... is present in the *Mappings* panel for one or more mapped fields and you want to apply a conversion option, click the field **Choose a conversion** ... and select an option in the selection list.
- **21** If you want to rename a field listed in the *Transition Field* column, select the field and then type a description.
- **22** If you want to remove a field in the *Mappings* panel, double-click the field and then click **Yes** when a message displays to verify you want to remove the field.

Fields with a Solution are required and cannot be removed, such as *ROW Code*, *Milepost*, *Facility ID*, and *Inspection Date*.

Internal Fields		N	Mappings					
earch For Field	×	11	Internal Field	Transition Field	Verify	Import Voltage Conversion		
All Fields			ROW Code	ROW Code	N/A	N/A	-	
All Fields     ROW Permanent Information Fields			🔒 Facility ID	Facility ID	N/A	N/A		
Rectifier Facility Fields			A Milepost	Milepost	N/A	N/A		
Rectifier Information Fields     Rectifier Inspection Fields			A Inspection Date	Inspection Date	N/A	N/A		
			Rectifier Output Current Found (Amps)	Rectifier Output Current Found (Amps)	N/A	Choose a conversion		
Compliance Efficiency			Rectifier Output Volts Found (Volts)	Rectifier Output Volts Found (Volts)	N/A	Choose a conversion		
Inspection Latitude Inspection Remarks WH Meter Maintenance Details North Meter North Constraints Periodic Survey Var Rectifier Output Current Found Rectifier Output Current Found Rectifier Output Current Left Rectifier Output Shurt Reading Left Rectifier Output Shurt Reading Left							•	e e

Figure 10-37. Export Field Selections

**23** Click **V OK** to close the field selection dialog box and return to the definition window. Then click **Save**.

- **24** To manually export data from PCS Axis, click **Export** and then complete the following steps to select which filters to apply if the export file is set up with filters:
  - **a** Click the tab **All Data Items**. Click the check box for each filter you want to apply to *all* data items in the export file (Figure 10-38).
  - **b** Click a data item tab. For example, the data item tab labeled *Rectifier Inspection* is selected in the following figure. Click the check box for each filter you want to apply to the selected data item.

Export Filters	<b>X</b>
•	
All Data Items	O New 'And' Group Or Group
Rectifier Inspection	
	☑ Facility Active is yes
	✓ OK   🚳 Cance

Figure 10-38. Export Filters

- c Click **OK** to close the *Export Filters* dialog box and run the Bridge export file.
- **d** When the message *Completed* displays, click **Solution View Job Status** to open the *Job Status* window or **Solution Return to Definition** to open the *Definitions window*.

**25** To view the status of a Bridge session, click **Constitutions Status** in the *Definitions* **window** to open the *Job Status* window (Figure 10-39). Clicking **Log** for a Bridge session opens the log file for the selected session.

**NOTE:** For a description of the icons and colors used in Job Status, see *Icons and Colors Used in Bridge Job Status* (page 559).

			- Da	ate range: Today	-					
		Definition	Туре	Queue Time	Validation Time	End Time	State	Log Error	Delete	
	+	My Bullhorn Bridge	Bullhorn	12/17/2013 10:07:09 AM	12/17/2013 10:08:20 AM	12/17/2013 10:08:20 AM	Validated		×	^
		My Bridge Import Export_1	Bridge - Export	12/17/2013 10:02:50 AM		12/17/2013 10:02:51 AM	Completed			
		My Bridge Import Export_1	Bridge - Import	12/17/2013 10:02:24 AM		12/17/2013 10:02:44 AM	Completed			
		My Bridge Import Export_1	Bridge - Import	12/17/2013 10:01:31 AM	12/17/2013 10:01:47 AM	12/17/2013 10:01:47 AM	Validated		X	
		My Bridge Import_1	Bridge - Import	12/17/2013 9:58:56 AM	12/17/2013 9:59:09 AM	12/17/2013 9:59:09 AM	Validated		×	
		My Bridge Export_1	Bridge - Export	12/17/2013 9:54:37 AM		12/17/2013 9:54:41 AM	Completed			
		My Bullhorn Bridge	Bullhorn	12/17/2013 9:50:33 AM	12/17/2013 9:51:47 AM	12/17/2013 9:51:47 AM	Validated		X	
1									📰 Row Cour	• nt: 7
	Data	Items Rectifier •								
		Row ROW Code Milepo	ost Facility ID	Rectifier Output Volts	Found (Volts) Rectifier O	utput Current Found (Amps			Inspection Rema	
	•	Row ROW Code Milepo 0 ALG123C 1-	ost Facility ID +10 AR234	10.70347847417	Found (Volts) Rectifier O	utput Current Found (Amps)	A 2013-11-3	0T14:45:52	Inspection Rema Bullhorn Import	
	•	Row         ROW Code         Milepo           0         PLG123C         1-           1         PLG123C         1-	ost Facility ID		Found (Volts) Rectifier O			0T14:45:52 7T13:33:42	Inspection Rema	
	•	Row         ROW Code         Milepo           0         ALG123C         1-           1         PLG123C         1-           2         PLG123C         1-           3         PLG123C         1-	ost Facility ID +10 AR234 +10 R234	10.70347847417		1243155788	2013-11-3 2013-12-0	0T14:45:52 7T13:33:42 4T13:18:49	Inspection Rema Bullhorn Import Bullhorn Import	
	•	Row         ROW Code         Milepo           0         ♣LG123C         1-           1         ¥LG123C         1-           2         ¥LG123C         1-           3         ¥LG123C         1-           4         ¥LG123C         1-	ost Facility ID +10 AR234 +10 R234 +00 AR100	10.70347847417	-0.00383964	1243155788 3486311575	2013-11-3 2013-12-0 2013-12-1	0T14:45:52 7T13:33:42 4T13:18:49 7T13:33:42 4T13:18:49	Inspection Rema Bullhorn Import Bullhorn Import Bullhorn Import	

Figure 10-39. Job Status

- **26** To copy the Bridge definition to a file, such as a Notepad or Microsoft Word file, follow these steps:
  - a Click the **Definitions** tab if the *Definitions window* is not open.
  - **b** Click **Copy to Clipboard**.
  - **c** Start the software program, such as Notepad or Microsoft Word.
  - d Open a new file and then **Paste** the definition file. Click **Save**.

## Adding a Bridge Import/Export Definition

A Bridge import/export definition specifies the property settings and options for importing and exporting data in PCS Axis. It defines the data transfer options; location of the import file; location for the export file; and mappings for data items in PCS Axis and the import file.

**NOTE:** Bridge currently supports use of a facility key only in a Bridge import file. Future enhancements will include use of a facility key in a Bridge export file.

To add a Bridge import/export definition, follow these steps:

Select one or more pipeline segments in the Select ROWs window. Select pipeline segment(s) with facilities you want to include in the Bridge definition. Click Save to close the window (Figure 10-40).

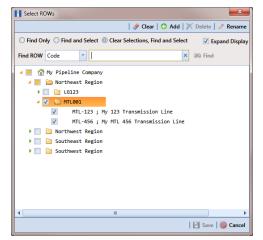


Figure 10-40. Select ROWs

2 Click **Tools** > **Bridge** to open the *Bridge* window (Figure 10-41, page 528)

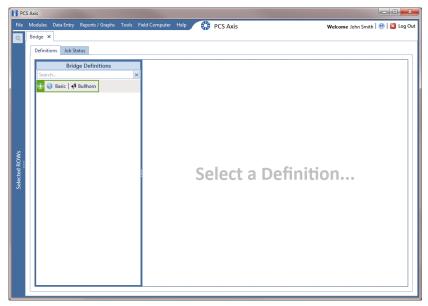


Figure 10-41. Bridge

**3** Click **Basic** to open the definition panel (Figure 10-42).

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required property settings.

S Axis		
Modules Data Entry Reports / Graphs Tools Field	iomputer Help 💮 PCS Axis	Welcome John Smith   🕺   🔀 Log Out
Bridge ×		
Definitions Job Status		
Bridge Definitions	🗞 Prevalidate 🍟 Import 🔒 Export 📄 Copy To Clipboard 🎭 Job Status	🛛 🔄 Save   🚳 Cancel   🗍 Copy   🗙 Delete
Search	∇ (j) It appears that you have some invalid options, please correct the following (3)	
🕀 💿 Basic 🛛 📢 Bullhorn		/ Edit
	Data Transfer	
	Import 😵 🔲 Scheduled 12:00 AM	
	Export 😵 🗌 Scheduled 12:00 AM	
	From Selected ROWs, export: All Records .	No Filter Defined
	Options	
	Public 🔲 Use Facility Key 🔲 Rename files on manual bridge runs.	
	Full View O Add Data Item	
	No Data Items I	Defined
	Modules Data Entry Reports/Graphs Tools Field O Bridge X Definitions Job Status Bridge Definitions Search	Module:     Data Entry     Reports / Graphic     Tools     Feld Computer     Help     Image: PCS Axis       Bridge Continions     Bridge Continions     Image: Provide the "Image: Point of the Status       Bridge Continions     Image: Provide the "Image: Point of the Status       Status     V     It appears that you have some invalid options, please correct the following:     3)       Name     Data Transfer     Image: Point of the Status     Image: Point of the Status       Image: Point of the Status     Data Transfer     Image: Point of the Status     Image: Point of the Status       Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status       Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status       Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status       Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status       Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status     Image: Point of the Status       Image: Point of the Status     Image: Point of the Status

Figure 10-42. Basic Bridge Definition

**4** Type a unique name for the definition in the **Name** field (Figure 10-43, page 530).

**NOTE:** Clicking the *Bridge Definitions* bar collapses the panel allowing you to view more of the Bridge definition. Clicking the bar again expands the panel.

- **5** To set properties in the *Data Transfer* group box, follow these steps (Figure 10-43, page 530):
  - a Click the Import and Export check boxes.
  - **b** If you want PCS Axis to automatically run the import file at a scheduled time, click the **Scheduled** check box and then type a scheduled time in the adjacent field. Enter a scheduled time using 12-hour time format to specify the hour, minute, and AM/PM setting (HH:MM AM or PM).

**IMPORTANT:** When scheduling a time to run *Bridge*, choose a time that does not impact other network services or computer resources. For example, consider a staggered time schedule instead of running *Bridge* at the same time as other scheduled network services.

c If you are importing large amounts of data, click the check box **Reindex after import** to reindex the PCS Axis database after the import process completes.

**NOTE:** Enabling this option prevents index fragmentation from occurring in the PCS Axis database, which in turn may result in slow system performance. Index fragmentation may occur after importing large amounts of data in PCS Axis using *Bridge Import*, *Bullhorn Bridge*, or *Field Computer*. You can also reindex the database using the option *Reindex Database* in *Job Service Viewer* (Tools > Job Service Viewer).

**d** Select which records to export. Click the down arrow in the field **From Selected ROWs, export** and select an option in the selection list, such as *All Records*.

- **6** To set properties in the *Options* group box, follow these steps (Figure 10-43, page 530):
  - **a** Click the **Public** check box if you want the import/export definition file available for use by all PCS Axis users. When the check box is empty, the definition file is available only to the user who creates it.
  - **b** If you want to use a facility key for facilities in the import file, click the check box **Use Facility Key**. This option is not currently available for facilities in the export file. For more information about facility keys, see *Using a Facility Key in Bridge* (page 492).

When facilities are not mapped to a facility key, they are mapped to the following required fields: *ROW Code*, *Milepost*, and *Facility ID*.

**c** If you plan to run the import/export file manually and want Bridge to rename the file, click the check box **Rename files on manual bridge runs**.

	Wris Andrules Data Entry Reports / Graphs Too Bridge × Definitions Job Status	s Field Computer Help 😧 PCS Axis	Wekome John Smith   🕑   🗳 Log Out
	Bridge Definitions	Prevailate ' Import Export Caphoard ' Iso Status     One of the same invalid options, please correct the following(1)     Name     My Import Export File_1     Data Transfer     J' Import Scheduled     I200 AM     Reindex after import     Scheduled     I200 AM     Reindex after import     Scheduled     I200 AM     Reindex after import     Scheduled     I200 AM     Vise Facility Key     Rename files on manual bridge nuns.	
Selected ROWs	с и )	El full View   O Add Data Item   No Data Ite	ems Defined

Figure 10-43. Bridge Import Export Definition

7 If you want to set up one or more filters that apply to *all* data items in the definition file, click *Filter* **Edit** in the *Filters* group box to open the *Edit Filter* dialog box (Figure 10-44, page 531).

**NOTE:** You can also set up one or more filters that *only* apply to a selected data item instead of all data items in the definition file. Information is provided later in **step 16** on page 536.

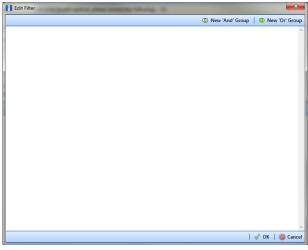


Figure 10-44. Edit Filter

- **8** If you want to include a subset of records in the export file that meet *all* filter conditions, create an AND filter group using the following steps:
  - a Click () New 'And' Group to open the filter properties group box (Figure 10-45).
  - **b** Type a name for the filter group in the field **Filter Group Caption**.

Edit I	Filter	×
	Ø	New 'And' Group   🚳 New 'Or' Group
٥	My Filter Group Caption	0   X
	Milepost Is missing	
	▼ Filter Is Always On	×
	Milepost   Is missing	
H	Enter Custom Filter Caption	
		🛷 OK   🔞 Cance

Figure 10-45. New 'And' Filter Group

- **c** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- **d** If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- e Type a name for the filter in the field Enter Custom Filter Caption.
- **f** If you want to set up additional filter criteria for the filter group:
  - Click the **G** Add button to open another filter properties group box.
  - Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 8 c** through **e** to set up filter criteria.
- **9** If you want to include a subset of records in the export file that meet *any* filter condition, create an OR filter group using the following steps:
  - a Click ( New 'Or' Group to open a filter properties group box (Figure 10-46).
  - **b** Type a name for the filter group in the field **Include records that match any of these conditions**.
  - **c** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

My Filter Group Caption     My Filter Group Caption     Milepost Is missing      Include records that match any of these conditions     C	Edit Filter	New 'And' Group 0 New 'Or' Gro
Milepost Is missing   Include records that match any of these conditions  Include records that match any of these conditions  Facility Active Is equal to No  Facility Active Is equal to  No  No  No  No  No  No  No  No  No		New And Group   Wilew Or Gro
	My Filter Group Caption	0   X
Facility Active Is equal to No     Facility Active Is equal to No     Facility Active * Is equal to     No	Milepost Is missing	
Facility Active Is equal to No     Facility Active Is equal to No     Facility Active * Is equal to     No		
Facility Active + Is equal to + No +	· · · · · · · · · · · · · · · · · · ·	○   X
Facility Active	Security Active Is equal to No	
	Filter Is Always On	×
Enter Custom Filter Caption		
	Enter Custom Filter Caption	

Figure 10-46. New 'Or' Filter Group

- **d** If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- e Type a name for the filter in the field Enter Custom Filter Caption.
- **f** If you want to set up additional filter criteria for the filter group:
  - Click the **Click the** Add button to open another filter properties group box.
  - Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 9 c** through **e** to set up filter criteria.
- **10** Click **V** OK to close the *Edit Filter* dialog box and return to the definition window.

**NOTE:** Filter settings apply automatically when the Bridge definition is set to run at a scheduled time. When the Bridge definition is run manually, a dialog box opens allowing you to select which filters to apply before running the definition.

**11** Click **Save** and then click **Full View** to hide the group boxes *Data Transfer, Options,* and *Filters.* Clicking *Full View* again displays these group boxes.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required property settings.

- **12** Select data item(s) you want to import and export. Click **3** Add Data Item to open the *Data Items* window and then complete the following steps (Figure 10-47):
  - **a** Open the folder(s) containing the data item(s) you want to import and export. Repeat this step as needed for other folders. For example, the folders *CPDM* and *Rectifier* are selected in the next figure.
  - **b** Double-click to select a data item and move it to the right pane of the window. Repeat this step as needed for other data items. For example, the data item *Rectifier Inspection* is selected in the next figure.

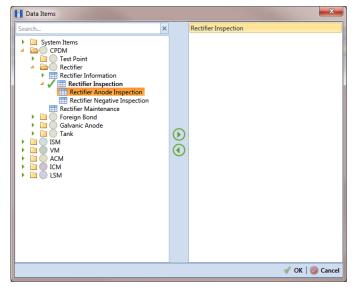


Figure 10-47. Data Items

**NOTE:** The right pane of the *Data Items* window lists all selected data items for import. To remove a data item for import, double-click the data item in the right pane to move it back to the left pane.

- c Click OK to close the dialog box and return to the definition window. Then click Save.
- **13** Identify the location of the import file using the following steps:
  - **a** Click the ellipsis button ... in the field **Import File Name** to open the *Import File* dialog box. Navigate to the import file and then select it.
  - **b** Click **Open** to close the dialog box and return to the definition panel. The path to the import file displays in the field *Import File Name*.

- **14** Select a file format and a location to save the export file using the following steps (Figure 10-48, page 535):
  - a Click the ellipsis button ... in the field Export Directory to open the Browse For Folder dialog box. Navigate to a folder on your computer where you want to save the export file. Then click OK to close the dialog box and return to the definition window.
  - **b** Type a name for the export file in the field **Export File Name**. Then click the down arrow in the field **Export Format** and select a file format for the export file. Options include *Excel files* (\*.*xlsx*) and *Text files* (\*.*txt*, \*.*csv*).
  - c Click 💾 Save.
- **15** If you want to assign inspections in the import file to a survey folder based on the inspection date, complete one or both of the following steps in the *Options* group box as required (Figure 10-48, page 535).
  - **a** If you want to assign inspections to an annual survey folder, click the check box **Assign inspections to an Annual Survey**.
  - **b** If you want to assign inspections to a periodic survey folder, click the check box **Assign inspections to a Periodic Survey**.

E	Bridge 3 Definit	<	phs Tools Field Computer Help 🔅 PC	CS Axis		Welcome John Smith   🥹		
		🗞 Prevalidate 🛛 🔞 Impo	rt   🔒 Export   🗍 Copy To Clipboard   🎭 Job Sta	itus		💾 Save   🚳 Cancel   🗍 Copy   🗡	Delete	
		▼ (i) It appears that you h       It appears that you h       Full View	ave some invalid options, please correct the following (	(1)				
		Full View   C Add D	ata item					
		Rectifier Inspection	Rectifier Inspection			🛛 🗡 Del	lete	
			Import File Name		Filters	P 1	🥒 Edit	
			C:\Users\donna.russell\Desktop\MTL518_import_Re	ectifierInspection.xlsx ···				
			Export Directory					
			C:\Users\donna.russell\Desktop					
				cel files(*.xlsx)		No Filter Defined		
			Options					
			Assign inspections to an Annual Survey. 🔽 Assi					
	50							
	5		Maps			🔯 Preview 🥖	Edit	
	finition		Internal Field	Transition Field	Verify	Import Voltage Conversion	Edit	
1	Definition		Internal Field	Transition Field	N/A	Import Voltage Conversion	Edit	
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****	Bridge Definition		Internal Field                 Rockity, D	It a transition field.	N/A N/A N/A	Import Voltage Conversion N / A N / A N / A N / A N / A N / A N / A	*	
	Bridge Definition		Internal Field  Gradity ID  Gradity ID  Multipot  Multipot  Validations  1  Multipot  Multipot  A  A  A  A  A  A  A  A  A  A  A  A  A	to a transition field. ansition field. transition field.	N/A N/A N/A	Import Voltage Conversion N / A N / A N / A N / A N / A N / A N / A	*	
	Bridge Definition		Internal Field           Internal Field           Facility ID           Imagest	to a transition field. ansition field. transition field.	N/A N/A N/A	Import Voltage Conversion N / A N / A N / A N / A N / A N / A N / A	*	
	Bridge Definition		Internal Field           Internal Field           Facility ID           Imagest	to a transition field. ansition field. transition field.	N/A N/A N/A	Import Voltage Conversion N / A N / A N / A N / A N / A N / A N / A	*	
	Bridge Definition		Internal Field           Internal Field           Facility ID           Imagest	to a transition field. ansition field. transition field.	N/A N/A N/A	Import Voltage Conversion N / A N / A N / A N / A N / A N / A N / A	*	
****	Bridge Definition		Internal Field           Internal Field           Facility ID           Imagest	to a transition field. ansition field. transition field.	N/A N/A N/A	Import Voltage Conversion N / A N / A N / A N / A N / A N / A N / A	*	

Figure 10-48. Bridge Import Export

- **16** If you want to set up one or more filters for the export file that apply *only* to the currently selected data item, follow these steps:
  - **a** If more than one data item is included in the export file, select a data item in the menu on the left side of the window.
  - **b** Click *F* **Edit** in the *Filters* group box to open the *Edit Filter* dialog box (Figure 10-49).

Edit Filter				×
	🔘 New 'And' Group	0	New '	Dr' Group
				-
		1 -11 0	v   4	Cancel
		V (	K (	y Cancel

Figure 10-49. Edit Filter

- **17** If you want to include a subset of records in the export file that meet *all* filter conditions, create an AND filter group using the following steps:
  - a Click () New 'And' Group to open the filter properties group box (Figure 10-50).
  - **b** Type a name for the filter group in the field **Filter Group Caption**.

Edit Filter	×
New 'And' Grou	p   🔘 New 'Or' Group
My Filter Group Caption	0   X
Milepost Is missing	
	×
Enter Custom Filter Caption	
	_
	_
	_
	_
	_
	_
	_
	│ √ OK │ 🚫 Cancel

Figure 10-50. New 'And' Filter Group

- **c** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- **d** If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- e Type a name for the filter in the field Enter Custom Filter Caption.
- **f** If you want to set up additional filter criteria for the filter group:
  - Click the 🛟 Add button to open another filter properties group box.
  - Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 17 c** through **e** to set up filter criteria.
- **18** If you want to include a subset of records in the export file that meet *any* filter condition, create an OR filter group using the following steps:
  - a Click () New 'Or' Group to open a filter properties group box (Figure 10-51).
  - **b** Type a name for the filter group in the field **Include records that match any of these conditions**.
  - **c** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

Edit Filter	×
	💿 New 'And' Group   🔘 New 'Or' Group
My Filter Group Caption	0   X
Milepost Is missing	
Include records that match any of these conditions	•   X
Recility Active Is equal to No	
Filter Is Always On Facility Active Is equal to Is equal to Inter Custom Filter Caption	×
	🛛 🗹 OK 🗎 🚫 Cance

Figure 10-51. New 'Or' Filter Group

- **d** If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- e Type a name for the filter in the field Enter Custom Filter Caption.
- **f** If you want to set up additional filter criteria for the filter group:
  - Click the 🛟 Add button to open another filter properties group box.
  - Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 18 c** through **e** to set up filter criteria.
- **19** Click **V** or **K** to close the *Edit Filter* dialog box and return to the definition window.

**NOTE:** Filter settings apply automatically when the Bridge definition is set to run at a scheduled time. When the Bridge definition is run manually, a dialog box opens allowing you to select which filters to apply before running the definition.



- **21** To map fields in PCS Axis with fields in the import file, follow these steps:
  - a Click *C* Edit in the *Maps* group box to open a field mapping window (Figure 10-52).

**NOTE:** Fields in the *Mappings* panel with a lock icon are required fields for mapping, such as *ROW Code*, *Milepost*, *Facility ID*, and *Inspection Date* shown in the following example (Figure 10-52, page 539).

- **b** Select PCS Axis fields for mapping. Click the **b** toggle arrow for a field category in the *Internal Fields* panel to view a list of available fields. For example, *Rectifier Inspection Fields* is selected in the next figure.
- c Click the check box for one or more PCS Axis fields listed in the *Internal Fields* panel. Then click the () top arrow button to move selections to the *Mappings* panel. Double-clicking a field also moves it to the *Mappings* panel.

For example, the PCS Axis fields *Rectifier Output Current Found (Amps)* and *Rectifier Output Volts Found (Volts)* are selected for mapping in the next figure.

×	Map	ppings Internal Field	_			_	
	Н	Internal Field				_	Transition Fields
1			Transition Field	Verify	Import Voltage Conversion		Sort Alphabetically
_		ROW Code	ROW Code	N/A	N/A		Rectifier Output Current Found (Amp
		Facility ID	Facility ID	N/A	N/A		Rectifier Output Current Left (Amps)
		Milepost	Milepost	N/A	N/A		
		Inspection Date	Inspection Date	N/A	N/A		
		Rectifier Output Current Found (Amps)		N/A	Choose a conversion		
		Rectifier Output Current Left (Amps)		N/A	Choose a conversion		
	•		<ul> <li>U</li> </ul>				

Figure 10-52. Field Mappings

**d** If you want to sort import fields listed in the *Transition Fields* panel in alphabetical order, click the check box **Sort Alphabetically**.

- e To map PCS Axis fields with fields in the import file, follow these steps:
  - Select a PCS Axis field in the *Mappings* panel. Map the selected field to a field in the import file by double-clicking a field listed in the *Transition Fields* panel. Repeat this step for remaining fields you want to map.

**NOTE:** When the **1 Auto Map** button is enabled and the names of fields in the import file match those in PCS Axis, double-clicking a PCS Axis field in the *Mappings* panel automatically maps to an import field listed in the *Transition Fields* panel.

- If the definition is set up to use a facility key, click the **Facility Key** option button in the *Mappings* panel for the field you want to use as the facility key, such as *ROW Code* or *Milepost*.
- If the field *Choose a conversion*... is present in the *Mappings* panel for a pair of mapped fields and you want to apply a conversion option, click the field **Choose a conversion** ... and select an option in the selection list.
- **f** If you want to preview fields for mapping in the import file, click the
   **Q** Preview button to open the import file in the *Preview Maps* window.
- 22 Click OK to close the mapping window and return to the definition window.
   Then click Save.

Field mappings display in the Maps group box.

23 To validate the definition, click the Prevalidate button. When the validation process completes and the following message displays, click iterations or Return to Definition (Figure 10-53).

**NOTE:** The *Prevalidate* process confirms the Bridge definition is set up correctly; it does not post data in the database. Only the first 1,000 records of the import file will be displayed.

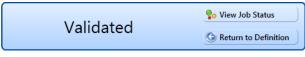


Figure 10-53. Validated Message

- 24 If you want to manually import data in PCS Axis, click import in the Definitions window. When the message Completed displays, click view Job Status to open the Job Status window or Return to Definition to open the Definitions window.
- **25** To manually export data from PCS Axis, click **Export** in the *Definitions* window and then complete the following steps to select which filters to apply if the Bridge definition is set up with filters:
  - **a** Click the tab **All Data Items**. Click the check box for each filter you want to apply to *all* data items in the Bridge definition (Figure 10-54).
  - **b** Click a data item tab. For example, the data item tab labeled *Rectifier Inspection* is selected in the following figure. Click the check box for each filter you want to apply to the selected data item.

Export Filters		
All Data Items	① New 'And' Group   ③ New 'Or' Group	
Rectifier Inspection	Image: Constraint of the second se	
	🗹 OK   🚳 Canc	el

Figure 10-54. Export Filters

- c Click **OK** to close the *Export Filters* dialog box and run the Bridge export file.
- **d** When the message *Completed* displays, click **Solution View Job Status** to open the *Job Status* window or **Solution Return to Definition** to open the *Definitions window*.

**26** To view the status of a Bridge session, click **Constitutions Status** in the *Definitions* **window** to open the *Job Status* window (Figure 10-55). Clicking **Log** for a Bridge session opens the log file for the selected session.

**NOTE:** For a description of the icons and colors used in Job Status, see *Icons and Colors Used in Bridge Job Status* (page 559).

		100	ite range: Today	-					
	Definition	Туре	Queue Time	Validation Time	End Time	State	Log Error	Delete	
•	My Bullhorn Bridge	Bullhorn	12/17/2013 10:07:09 AM	12/17/2013 10:08:20 AM	12/17/2013 10:08:20 AM	Validated		×	
	My Bridge Import Export_1	Bridge - Export	12/17/2013 10:02:50 AM		12/17/2013 10:02:51 AM	Completed			
	My Bridge Import Export_1	Bridge - Import	12/17/2013 10:02:24 AM		12/17/2013 10:02:44 AM	Completed			
	My Bridge Import Export_1	Bridge - Import	12/17/2013 10:01:31 AM	12/17/2013 10:01:47 AM	12/17/2013 10:01:47 AM	Validated		×	
	My Bridge Import_1	Bridge - Import	12/17/2013 9:58:56 AM	12/17/2013 9:59:09 AM	12/17/2013 9:59:09 AM	Validated		×	
	My Bridge Export_1	Bridge - Export	12/17/2013 9:54:37 AM		12/17/2013 9:54:41 AM	Completed			
	My Bullhorn Bridge	Bullhorn	12/17/2013 9:50:33 AM	12/17/2013 9:51:47 AM	12/17/2013 9:51:47 AM	Validated		X	
Data	a Items Rectifier								
Data	Row ROW Code Milepo	ost Facility ID	Rectifier Output Volts	Found (Volts) Rectifier O	utput Current Found (Amps			Inspection Rem	
•	Row ROW Code Milepo 0 ALG123C 1-	ost Facility ID +10 AR234	10.70347847417	Found (Volts) Rectifier O	utput Current Found (Amps	A 2013-11-3	30T14:45:52	Bullhorn Import	
Þ	Row         ROW Code         Milepo           0         PLG123C         1-           1         PLG123C         1-	+10				2013-11-3 2013-12-0	30T14:45:52 07T13:33:42	Bullhorn Import Bullhorn Import	
•	Row         ROW Code         Milepo           0 $ ho$ LG123C         1-           1 $ ho$ LG123C         1-           2 $ ho$ LG123C         1-	Facility ID           ▶10         ♣ R234           ▶10         ♀ R234           ▶00         ♣ R100	10.70347847417	Found (Volts) Rectifier O -0.0038396- -0.0076792	4243155788	2013-11-3 2013-12-0 2013-12-1	30T14:45:52 07T13:33:42 14T13:18:49	Bullhorn Import Bullhorn Import Bullhorn Import	
•	Row         ROW Code         Milepo           0 $LG123C$ 1-1 $1-1$ 1 $RG123C$ $1-1$ 2 $RG123C$ $1-1$ 3 $RG123C$ $1-1$	Facility ID           +10         R234           +10         R234           +00         R100	10.70347847417	-0.0038396	4243155788	2013-11-3 2013-12-0	30T14:45:52 07T13:33:42 14T13:18:49 07T13:33:42	Bullhorn Import Bullhorn Import	

Figure 10-55. Job Status

- **27** To copy the Bridge definition to a file, such as a Notepad or Microsoft Word file, follow these steps:
  - a Click the **Definitions** tab if the *Definitions window* is not open.
  - **b** Click **Copy to Clipboard**.
  - c Start the software program, such as Notepad or Microsoft Word.
  - d Open a new file and then Paste the definition file. Click Save.

### Adding a Bullhorn Bridge Definition

A Bullhorn Bridge definition specifies the property settings and options for importing data in PCS Axis from a user account on the Bullhorn Asset Tracker (BAT) website. It defines how often to run the definition; the unique *Key* assigned by BAT to the Extract; and field mappings for PCS Axis and data imported from BAT.

After running a Bullhorn Bridge definition, PCS Axis automatically adds the phrase *Bullhorn Import* in the *Inspection Remarks* field of the facility data entry grid.

To add a Bullhorn Bridge definition, follow these steps:

Select one or more pipeline segments in the Select ROWs window. Select pipeline segment(s) with facilities you want to include in the Bullhorn Bridge definition. Click Save to close the window (Figure 10-56).

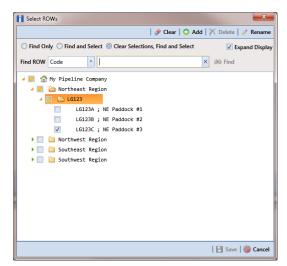


Figure 10-56. Select ROWs

2 Click **Tools** > **Bridge** to open the *Bridge* window (Figure 10-57).

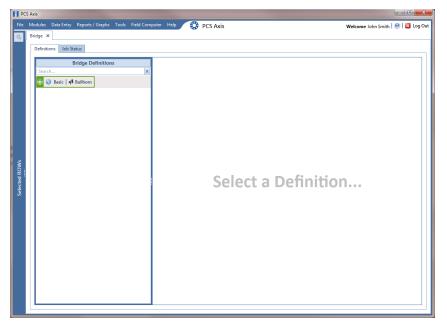


Figure 10-57. Bridge

3 Click **4** Bullhorn to open the Bullhorn definition panel (Figure 10-58).

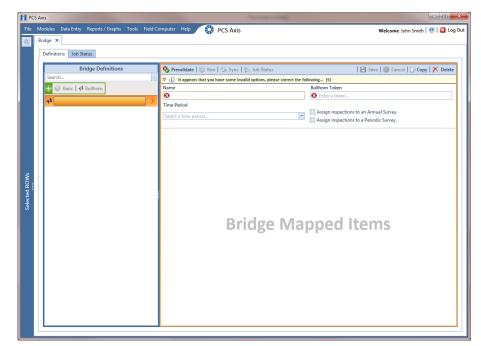


Figure 10-58. Bullhorn Definition Panel

**4** Type a unique name for the definition in the **Name** field.

**NOTE:** Clicking the *Bridge Definitions* bar collapses the panel allowing you to view more of the definition panel. Clicking the bar again expands the panel.

**5** Click the down arrow in the **Time Period** field and select how often you want to run the Bullhorn Bridge definition.

**IMPORTANT:** When choosing an option in the *Time Period* field, choose a time that does not impact other network services or computer resources. For example, consider a staggered time schedule instead of running *Bridge* at the same time as other scheduled network services.

- **6** Log in to your account on the BAT website and then copy the unique key generated by BAT for the Extract. Paste the unique key in the **Bullhorn Token** field of the Bullhorn Bridge definition.
- **7** To assign survey readings to a survey folder based on the inspection date, complete one or both of the following steps as required:
  - **a** If you want to assign inspections to an annual survey folder, click the check box **Assign inspections to an Annual Survey**.
  - **b** If you want to assign inspections to a periodic survey folder, click the check box **Assign inspections to a Periodic Survey**.

**Note:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required property settings.

- 8 Click **Save** and then click **Full View** to hide the *Name*, *Bullhorn Token*, *Time Period*, and survey folder fields. Clicking *Full View* again displays these fields (Figure 10-59, page 547).
- **9** Select the PCS Axis module that will receive imported data. Click the down arrow in the module selection list and select a module, such as *CPDM*.

- **10** Select the type of facility data you plan to import. Click a facility type button, such as *Rectifier* (Figure 10-59, page 547).
- **11** To map PCS Axis fields with a Bullhorn data point, follow these steps:
  - **a** In the center *Mappings* panel, click the check box **Do Not Map** for each Bullhorn data point you do not plan to map, such as *Battery Voltage*.

A check mark inside the check box indicates a selection. To clear a selection, click the check box again to remove the check mark.

**NOTE:** Clicking any of the following options allows you to filter records in the *Mappings* panel based on the selected option: *Un-mapped*, *Marked as Do Not Map*, *Mapped*, and *All*. For example, clicking *Mapped* allows you to view only mapped data points in the *Mappings* panel.

**b** Select a row in the *Mappings* panel that includes the Bullhorn data point and engineering units you want to map.

**NOTE:** To rearrange grid columns in the *Facilities*, *Mappings*, or *Fields* panel, drag and drop the name of a grid column to a new position. To resize a grid column, place the mouse over a column boundary to change the cursor to a horizontal resize cursor  $\longrightarrow$ . Then click and drag the column boundary to resize the grid column.

**c** In the left *Facilities* panel, map a PCS Axis milepost to the Bullhorn data point selected in the *Mappings* panel. Double-click the milepost in the *Facilities* panel to move it to the *Milepost* field in the *Mappings* panel.

**NOTE:** Double-clicking a mapped field in the *Mappings* panel allows you to unmap the selected field. When a message displays, click **Ves** to unmap the selected field, or **No** to cancel the operation.

- **d** In the right *Fields* panel, map a PCS Axis field to the Bullhorn *Engineering Units* field in the *Mappings* panel. Double-click a PCS Axis field in the *Fields* panel to move it to the *Field* column in the *Mappings* panel.
- e Repeat step 11 a through d as needed and then click 💾 Save.

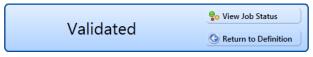
File	Modules Bridge	×	a Entry Report	ts / Graphs	Tools Field	l Com	puter	Help 🚫	PCS Axis					Welcome John Smith	- 🛛 🕳 X
Selected BOWs	Bridge Definitions		Ibb Status Prevalidate Comparison Full View Comparison	DM         -         1           Rectifier An         -         -           Milepost         0+00         -         -           0+00         0+10         -         -           0+20         0+20         -         -	Test Point		Rect	opings	rked as Do No	Galvanic Anode Tank tt Map @ Mapped O Has Syno Field RectifierOutputCurrentFound	Data Point	Engineering Units NG well #5 VOLT	Field		Field
												Þ			

Figure 10-59. PCS Axis and Bullhorn Mappings

- **12** When Bullhorn units are added or removed in the unit group set up for the Extract, or the Bullhorn client name changes, click the Sync button to synchronize and update the definition file in PCS Axis.
- **13** To validate the definition, click the 🌺 **Prevalidate** button.

**NOTE:** The *Prevalidate* process confirms the Bridge definition is set up correctly; it does not post data in the database. Only the first 1,000 records of the import file will be displayed.

When the validation process completes and the following message displays (Figure 10-60), click <a href="#">Go View Job Status</a> to open the *Job Status* window or <a href="#">Go Return to Definition</a> to open the *Definitions window*.





- **15** To manually run the definition, follow these steps:
  - a Click 🕑 Run in the *Definitions* window.

- **b** When a date range dialog box opens, specify a date range for the data you want to import from BAT. Type a date in the **Start Date** and **End Date** fields or click the down arrow in these fields to select a date using a calendar.
- c Click O Apply to run the Bullhorn Bridge definition and close the date range dialog box.
- **d** When the message *Completed* displays, click **? View Job Status** to open the *Job Status* window or **③ Return to Definition** to open the *Definitions* window.

**NOTE:** PCS Axis adds the phrase *Bullhorn Import* in the *Inspection Remarks* field of the facility *Inspection* data entry grid.

**16** To view the status of a Bridge session, click **Go Job Status** in the *Definitions* window to open the *Job Status* window (Figure 10-61). Clicking **Log** for a Bridge session opens the log file for the selected session.

**NOTE:** For a description of the icons and colors used in Job Status, see *Icons and Colors Used in Bridge Job Status* (page 559).

	Defini			ate range: Today	-					
		tion	Туре	Queue Time	Validation Time	End Time	State	Log Error	Delete	
	My Bu	ullhorn Bridge	Bullhorn	12/17/2013 10:07:09 AM	12/17/2013 10:08:20 AM	12/17/2013 10:08:20 AM	Validated		X	-
	My Br	idge Import Export_1	Bridge - Export	12/17/2013 10:02:50 AM		12/17/2013 10:02:51 AM	Completed			
	My Br	idge Import Export_1	Bridge - Import	12/17/2013 10:02:24 AM		12/17/2013 10:02:44 AM	Completed			
	My Br	idge Import Export_1	Bridge - Import	12/17/2013 10:01:31 AM	12/17/2013 10:01:47 AM	12/17/2013 10:01:47 AM	Validated		X	
	My Br	idge Import_1	Bridge - Import	12/17/2013 9:58:56 AM	12/17/2013 9:59:09 AM	12/17/2013 9:59:09 AM	Validated		X	
	My Br	idge Export_1	Bridge - Export	12/17/2013 9:54:37 AM		12/17/2013 9:54:41 AM	Completed			
		ullhorn Bridge	Bullhorn	12/17/2013 9:50:33 AM	12/17/2013 9:51:47 AM	12/17/2013 9:51:47 AM	Validated		X	
 Da	ita Items	Rectifier	-				_			
	Row	ROW Code Mile	post Facility ID 1+10 AR234	Rectifier Output Volts 10.70347847417	Found (Volts) Rectifier Ou	utput Current Found (Amps)			Inspection Rema	arks
							2013-11-3	0114:45:52	Bullhorn Import	-
•	-						2013-12-0	7713-33-42	Bullhorn Import	
•	1 2	👷 LG123C	1+10 R234 1+00 R100	12.2698419727385	-0.00383964	1243155788	2013-12-0		Bullhorn Import Bullhorn Import	
•	1	PLG123C PLG123C PLG123C	1+10 👷 R234		-0.00383964 -0.00767928		2013-12-1 2013-12-0	4T13:18:49 7T13:33:42	Bullhorn Import Bullhorn Import	
•	1 2	R LG123C LG123C LG123C LG123C R LG123C	1+10 👷 R234 1+00 🔑 R100			3486311575	A 2013-12-1	4T13:18:49 7T13:33:42 4T13:18:49	Bullhorn Import	

Figure 10-61. Job Status

- 17 To copy the Bridge definition to a file, such as a Notepad or Microsoft Word file, follow these steps:
  - a Click the **Definitions** tab if the *Definitions window* is not open.
  - **b** Click **Copy to Clipboard**.
  - **c** Start a text editor or word processor program, such as Notepad or Microsoft Word.
  - d Open a new file and then Paste the definition file. Click Save.

### **Importing Pipeline Series**

The following procedure explains how to use Bridge to import pipeline series in PCS Axis. The import transition file must include fields that you can map to the following required PCS Axis fields:

- ROW Code
- Series Number
- Start Milepost
- End Milepost

Complete the following steps:

 Select one or more pipeline segments in the Select ROWs window (Figure 10-62). Select pipeline segment(s) with facilities you want to include in the Bridge definition. Click Save to close the window.

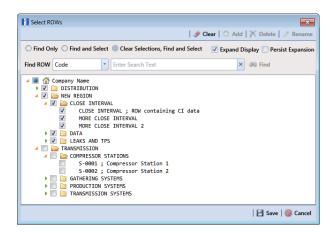


Figure 10-62. Select ROWs

2 Click **Tools** > **Bridge** to open the *Bridge* window. Then click **Basic** to open the basic definition panel (Figure 10-63).

PC	S Axis		
File	Modules Data Entry Reports / Graphs Tools Field Co	mputer Help 😯 PCS Axis	Welcome John Smith   🕺   🔀 Log Ou
Q	Bridge X       Definitions       Job Status       Bridge Definitions       Search       Y       Basic   4 Bullhorn	Prevaildate         Import         Im	
Ws	0	Data Transfer           Import S         Scheduled           ipport S         Sch	No Filter Defined
Selected ROWs		til full View] ○ Add Data Item   No Data Ite	ms Defined

#### Figure 10-63. Basic Definition Panel

**3** Type a unique name for the Bridge definition in the **Name** field (Figure 10-63, page 550).

**Note:** Clicking the *Bridge Definitions* bar collapses the panel allowing you to view more of the definition panel. Clicking the bar again expands the panel.

- 4 Set properties in the *Data Transfer* group box in the following manner:
  - a Click the Import check box.
  - **b** If you want PCS Axis to automatically run the import file at a scheduled time, click the **Scheduled** check box and then type a scheduled time in the adjacent field. Enter a scheduled time using 12-hour time format to specify the hour, minute, and AM/PM setting (HH:MM AM or PM).

When the import file is not scheduled to run automatically, you can run it manually by clicking the **TIMPORT** button.

**IMPORTANT:** When scheduling a time to run *Bridge*, choose a time that does not impact other network services or computer resources. For example, consider a staggered time schedule instead of running *Bridge* at the same time as other scheduled network services.

- **5** Set properties in the *Options* group box as follows (Figure 10-64, page 551):
  - **a** Click the **Public** check box if you want the import definition file available for use by all PCS Axis users. When the check box is empty, the definition file is available only to the user who creates it.
  - **b** Do not enable the option *Use Facility Key*. It is not required to import pipeline series. See *Using a Facility Key in Bridge* (page 492) for more information if needed
  - c If you plan to run the Bridge definition manually and want Bridge to rename the file after importing data, click the check box Rename files on manual bridge runs.

PCS Axis		
	s Data Entry Reports / Graphs Tools Field Computer Help 💮 PCS Axis	Welcome John Smith   🥹   🛂 Log (
Q Bridge	X Job Status	
	🗞 Prevalidate   🖏 Import   🗟 Export   🗍 Copy To Clipboard   🗞 Job Status	🛛 🔁 Save   🌚 Cancel   🗍 Copy   🗡 Delete
	V         (i) It appears that you have some invalid options, please correct the following (1)           Name	
	My Pipeline Series Import 1	Filters // Edit
	Data Transfer	
	Import         Scheduled         1200 AM           Export         Scheduled         1200 AM           From Selected ROWs, export:         All Records         •	No Filter Defined
	Options           Image: Wight of the second	
	Full View 🕒 Add Data Item	
Selected ROWS		ems Defined

Figure 10-64. Bridge Import Definition

6 Click **Save** and then click **Full View** to hide the group boxes *Data Transfer* and *Options*. Clicking *Full View* again displays these group boxes.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required property settings.

- 7 Click **O** Add Data Item to open the *Data Items* window and then complete the following steps (Figure 10-65, page 552):
  - **a** Open the **System Items** folder and then double-click **Series** to move the data item to the right pane of the window.
  - Click OK to close the window and return to the definition panel. Then click
     Save.

Search	×	Series
System Items     ROW Information     ROW Information     ROW Maintenance     Series     COPM     OSM     OSM	•	

Figure 10-65. Data Items

- 8 Identify the location of the import transition file using the following steps (Figure 10-66, page 553):
  - **a** Click the ellipsis button ... in the field **Import File Name** to open the *Import File* dialog box. Navigate to the import file and then select it.
  - **b** Click **Open** to close the dialog box and return to the definition panel. The path to the import transition file displays in the field *Import File Name*.
- **9** To assign inspections to a survey folder based on the inspection date, complete one or both of the following steps in the *Options* group box as required (Figure 10-8, page 499):
  - **a** If you want to assign inspections to an annual survey folder, click the check box **Assign inspections to an Annual Survey**.
  - **b** If you want to assign inspections to a periodic survey folder, click the check box **Assign inspections to a Periodic Survey**.

pours that you have some involid replans, please carrect the following	Y       ①       Targers that you have some invalid options, please correct the following (1)         C       Tart Yee       Add Data Item           Import File Name       Import File Name       Import File Name         C Uters vipon anth/Destop Bridge Import/ImportSeries x/sx       Import File Name       Import File Name         Maps       Import File Name       Import File Name       Import File Name         Ø Dortson       Ø add manual Survey.       Assign impections to a Periodic Survey.       No Filter Defined         Maps       Import File Name       Import Voltage Convension       Import Voltage Convension       Import Voltage Convension         Maps       Import Voltage Convension       N/A       N/A       N/A         Maps       Import Voltage Convension       Import Voltage Convension       Import Voltage Convension         Maps       Import Voltage Convension       N/A       N/A       Import Voltage Convension         Maps       Import Voltage Convension       N/A       N/A       N/A         Maps       Import Voltage Convension       Import Voltage Convension       Import Voltage Convension         Maport       N/A       N/A       N/A       N/A       Import Voltage Convension         Maport       N/A       N/A       N/A       Import Voltag
Series       ➤ Delete Import File Name         C: Users (bohn smith/Destspit/Bridge import/ImportSeries.xitx       →         Assign impections to an Annual Survey.       Assign impections to a Periodic Survey.         Assign impections to an Annual Survey.       Assign impections to a Periodic Survey.         Maps       >         Internal Field       Transition Field         Yearly       Import Yearge Conversion         Ø Sories Number       N/A         Ø Sories Number       N/A         N/A       N/A         Ø Sories Number       N/A         N/A       N/A         Ø Sories Number       N/A         N/A       N/A         Ø Sories Number       N/A         M/A       N/A         Ø Sories Number       M/A         W/A       N/A         Ø Sories Number       M/A         M/A       N/A         M/A       N/A         M/A       N/A	Series Device V Devic
Import File Name C. Users (Join smith/Desting) Bridge import limport Series .sts. Options Assign inspections to an Annual Survey. Assign inspections to a Periodic Survey. No Filter Defined  Maps  Maps  Series Number N/A N/A Series Number N/A N/A N/A Series Number Series Number Series Number N/A N/A N/A Series Number Series Number Series Number N/A N/A N/A Series Number Series Number Series Number Series Number N/A N/A N/A Series Number Series Numbe	Series     Import File Name     Import File Name       Import File Name     Cuterrights with/Gestop@Friges inportImportSeries stax       Options     Assign inspections to a Annual Survey.     Assign inspections to a Periodic Survey.       No Filter Defined       Maps     Import Field     V/A       Maps     Import Field     V/A       Maps     Import Values Conversion     Import Values Conversion       Maps     Import Values Conversion     Import Values Conversion       Import Field     V/A     V/A       Import Values Conversion     V/A     V/A       Ster Multipot     V/A     V/A       Ster Multipot     V/A     V/A       Validations     Import Values Conversion     Import Values Conversion
C Users John anth Destop Bridge Import Import Series x1xx Options Assign Impections to an Annual Survey. Assign Impections to a Periodic Survey. No Filter Defined  Maps  Maps  Preview  Period Perio	Berger Strate State State State Strate
C: Users (John anth Destage) Bridge import/ImportSeries _stax         Options         Assign impections to an Annual Survey.         Assign impections to a Periodic Survey.         No Filter Defined         Maps         Internal Field         Transition Field         Verify       Import Voltage Conversion         Series Number       N/A         N/A       N/A         Series Number       N/A         N/A       N/A         Sast Milepost       N/A         Windpost       N/A	C User sphn samthörestopBridge importUmportSeries .tkx Options Assign inspections to an Annual Survey. Assign inspections to a Periodic Survey. No Filter Defined  Maps  Internal Field Transition Field Verify Import Volkage Conversion Octo Survey. No Filter Defined  Survey. No Filter Defined  Maps  Survey. No Filter Defined  Maps  Maps  Survey. No Filter Defined  Maps
Assign inspections to an Annual Survey. Assign inspections to a Periodic Survey. No Filter Defined  Maps  Maps  Maps  Maps  Maps  Maps  Field  Transition Field  Transition Field  N/A N/A  Seriel Number N/A N/A N/A N/A N/A  Seriel Number N/A	No Filter Defined  Asign inspections to a Annual Survey.  No Filter Defined  Maps
Maps     Image: Content of the second s	No Filter Defined
Maps     Image: Control Field     Yeally     Import Valuage Conversion       Insternal Field     Transition Field     N / A     N / A       Ide Row Code     N / A     N / A     A       Ide Series Number     N / A     N / A     A       Ide Series Number     N / A     N / A     A       Ide Series Number     N / A     N / A     A       Ide Series Number     N / A     N / A     A       Ide Series Number     N / A     N / A     A	Maps
Maps     Import Verify     Import Verif	Maps
Internal Field         Transition Field         Verify         Import Voltage Conversion <ul></ul>	Different Field     Transition Field     Verify     Import Voltage Conversion       Internal Field     Transition Field     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A
Internal Field         Transition Field         Verify         Import Voltage Conversion <ul></ul>	Transition Field     Transition Field     Verify     Import Voltage Conversion       Internal Field     Transition Field     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A       Image: Series Number     N / A     N / A
Internal Field         Transition Field         Verify         Import Voltage Conversion <ul></ul>	Different Field     Transition Field     Verify     Import Voltage Conversion       Internal Field     Transition Field     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A       Image: Scient Number     N / A     N / A
0: Row Code         N/A         N/A         I/A           0: Serest Number         N/A         N/A         I/A	Wildations
As See Number         N / A         N / A           B End Milepot         N / A         N / A           Start Milepot         N / A         N / A	Validations
End Milepot     N / A N / A     Start Milepot     N / A	Validations
Start Milepot N/A N/A	Validations
🗄 Row Count. 4	Validations
	Validations
	Validations
	Validations
1. the (ROW Facility) (ROW Code) is not mapped to a transition field.	
2. ff [Series] [Series Number] is not mapped to a transition field.	a 📫 [Series] [End Milenost] is not manned to a transition field
	<ol> <li>ff [Series] [Series Number] is not mapped to a transition field.</li> </ol>

Figure 10-66. Definition

**10** To map fields in PCS Axis with fields in the import transition file, follow these steps:

a Click *C* Edit in the *Maps* group box to open a field mapping window (Figure 10-67, page 554).

**NOTE:** Fields in the *Mappings* panel with a lock icon are required fields for mapping, such as *ROW Code*, *Series*, *End Milepost*, and *Start Milepost* shown in Figure 10-67 (page 554).

- **b** If you want to sort import fields listed in the *Transition Fields* panel in alphabetical order, click the check box **Sort Alphabetically**.
- **c** To map PCS Axis fields with fields in the import transition file, follow these steps:
  - Select a PCS Axis field in the *Mappings* panel.
  - Map the selected field to a field in the import file by double-clicking a field listed in the *Transition Fields* panel. Repeat this step for remaining fields.

Internal Fields		Map	pings					Transition Fields
rch For Field	×	100	Internal Field	Transition Field	Verify	Import Voltage Conversion		Sort Alphabetically
All Fields		4	ROW Code	ROW Code	N/A	N/A		My End Milepost
- An Holds		4	Series Number	Series	N/A	N / A		My Start Milepost
		- F 🗿	End Milepost		N/A	N/A		
		1	Start Milepost		N/A	N/A		
	•							
							-	

Figure 10-67. Field Mappings

**NOTE:** When the **the Auto Map** button is enabled and the names of fields in the import transition file match those in PCS Axis, double-clicking a PCS Axis field in the *Mappings* panel automatically maps to an import field listed in the *Transition Fields* panel.

- **d** If you want to preview fields for mapping in the import transition file, click the **Q Preview** button to open the import file in the *Preview Maps* window.
- Click OK to close the mapping window and return to the definition window.
   Then click Save.

Field mappings display in the Maps group box.

12 To validate the definition, click the Prevalidate button. When the validation process completes and the following message displays (Figure 10-68), click to pen the Job Status to open the Job Status window or Return to Definition to open the Definitions window.

**Note:** The *Prevalidate* process confirms the definition file is set up correctly; it does not post data in the database. Only the first 1,000 records of the import file will be displayed.

Validated	📀 View Job Status
Validated	G Return to Definition

Figure 10-68. Validated Message

- **13** To manually import the *Pipeline Series* in PCS Axis, complete one of the following steps:
  - a If the *Job Status* window is open, click 🚱 **Run** for a selected import file listed in the *Job Status* window (Figure 10-69). Then click **G Refresh** to update status information.
  - **b** If the *Definitions window* is open for the import file, click **\* Import**.
- **14** To view the status of a Bridge session, click **C Job Status** in the *Definitions window* to open the *Job Status* window. Clicking **Log** for a Bridge session opens the log file for the selected session.

	Refresh Definition	My Pineline Series Im	port_1 - Date range:	Today -				
	Definition	Type	Queue Time	Validation Time	End Time	State	Log Run Error	Delete
,						Validated		X
							E	Row Count:
Da	Row	+ ROW Code	Pipe	Series Number	Start Milepost	End Milepost	ROW	Effective Date
Da'	Row 0	ROW Code	AP 1	🔑 Series 10	1+00	1+50	R	Effective Date
	Row	ROW Code					(3)	Effective Date

Figure 10-69. Job Status

**NOTE:** For a description of the icons and colors used in Job Status, see *Icons and Colors Used in Bridge Job Status* (page 559).

**15** To view the imported *Pipeline Series*, click **Data Entry** > **Pipeline Series**.

When the import transition file includes facility survey readings that have also been mapped in the Bridge definition, PCS Axis imports this data in the facility Inspections grid (*Data Entry > Edit <module > Data*).

### Viewing Bridge Job Status and Log

To view the job status and log for a Bridge definition, follow these steps:

- **1** Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window.
- 2 Click Tools > Bridge to open the Bridge window (Figure 10-70).

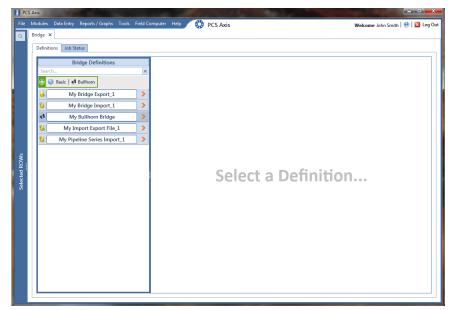


Figure 10-70. Select Definition

- 3 Click the Job Status tab to open the job status window (Figure 10-71, page 557).
- **4** Select a definition to display status information in the bottom panel of the job status window.

idge ×	ta Entry Reports / Gra			omputer Help 🔅	PCS Axi	15			weic	ome	onn smi	th   🖲
Definitions	Job Status											
😏 Refres	h Definition All	-	Dat	e range: Today	*							
Defi	nition -	Туре		Queue Time	Validation	n Time	End Time	State	Log	Run	Error	Delete
→ My1	Import Export File_1	Bridge - Impo	ort	12/16/2013 2:49:36 PM	12/16/201	13 2:49:44 PM	12/16/2013 2:49:44 PM	Validated		٢		X
My	Import Export File_1	Bridge - Expo	rt	12/16/2013 2:52:13 PM			12/16/2013 2:52:13 PM	Completed				
Myi	Import Export File_1	Bridge - Expo	rt	12/16/2013 2:54:20 PM			12/16/2013 2:54:20 PM	Completed				
Mvi	Import Export File_1	Bridge - Expo	rt	12/16/2013 3:16:22 PM			12/16/2013 3:16:22 PM	Completed				
	Bridge Import_1	Bridge - Impo		12/16/2013 3:11:04 PM	12/16/201	13 3:11:18 PM	12/16/2013 3:11:18 PM	Validated		0		X
	Bridge Import_1	Bridge - Impo		12/16/2013 3:13:58 PM			12/16/2013 3:14:12 PM	Completed				
	Bridge Import_1	Bridge - Impo		12/16/2013 3:17:01 PM	12/16/20	13 3:17:12 PM	12/16/2013 3:17:12 PM	Validated		0		×
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Figure 10-71. Job Status

**NOTE:** For a description of the icons and colors used in Job Status, see *Icons and Colors Used in Bridge Job Status* (page 559).

- 5 If you want to delete prevalidated data that has not posted in the database yet, click **X Delete** to remove the job from the *Job Status* window (Figure 10-71).
- 6 Click **Log** for a selected definition to open a window with detailed information (Figure 10-72).

ate	range: Today	*						
	Definition	Туре	Queue Time 🔺	Validation Time	End Time	State	Error	
۶.	My Bullhorn Bridge	Bullhorn	12/17/2013 9:50:33 AM	12/17/2013 9:51:47 AM	12/17/2013 9:51:47 AM	Validated		
	My Bullhorn Bridge	Bullhorn	12/17/2013 10:07:09 AM	12/17/2013 10:08:20 AM	12/17/2013 1:49:26 PM	Completed		
	My Bullhorn Bridge	Bullhorn	12/17/2013 1:46:00 PM	12/17/2013 1:47:57 PM	12/17/2013 1:49:01 PM	Completed		
_								
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Sum	imary Events							
)ef:	inition :	My Bullhorn	n Bridge					
	ort Trigger :							
(mp)	ort Enqueued :	12/17/2013	9:50:33 AM					
	ort Ended :							
Empo	ort Duration :							
Bull	Lhorn Start Date :							
Bull	Lhorn End Date :	12/17/2013	12:00:00 AM					
	ined Transfer Modes							
	Facility Key :							
Acce	ess Level :	Public						
	Rectifier Inspectio							
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	ign Periodic Survey ate New Record For							
			-					
	IAPS >>							
			[Facility_Pipeline.Id]					
Exte	ernal Field :	Facility_P	ipeline.Id					
			[RightOfWay.RightOfWay .RightOfWayCode					

Figure 10-72. Log

### Icons and Colors Used in Bridge Job Status

The *Data Items* grid in *Job Status* includes icons and colors for records imported in PCS Axis to indicate a particular status (Figure 10-73). For a description of these icons and colors, see Table 10-1 below.

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	MyTPIn			lge - Import		014 3:15:24 PM	4/8/2014 3:1		4/8/2014 3:15:46		Validated		٢		X	6
	Rectifie	r Bridge Import	Brid	lge - Import	4/8/20	014 2:50:56 PM	4/8/2014 2:5	1:25 PM	4/8/2014 2:51:25	РМ	Validated		٢		X	
	Bridge F	Rectifier Export_1	Brid	lge - Export	4/8/20	014 2:46:19 PM			4/8/2014 2:46:20	PM	Completed				×	
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	My Brid	lge Export_2	Brid	lge - Export	4/8/20	014 2:43:16 PM			4/8/2014 2:43:18	РМ	Completed				×	
		ic Bridge Export_1	Reid	lge - Export	4/8/20	014 2:40:36 PM			4/8/2014 2:40:41	DAA	Completed				X	
	iny basi	ie bindge exportes	- Dina	ge export	4/0/20	14 2.10.30 1 111			4/0/2014 2:40:41		compicted				-	- 6
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Figure 10-73. Data Items Grid in Job Status

Icons and Colors	Description
P	Matched Key: Bridge found an existing entry for this data.
$\mathfrak{R}$	<i>Duplicate Key</i> : Occurs for any redundancies found in the import file. Such as when a new ROW will be created and all other ROW entries in the import file after the first are redundant.
$\mathbf{a}$	Unmatched Key: No existing entry was found for this data.
• Green indicates a r	new record.
• Red indicates a reje	ected record.
• Yellow indicates an	out-of-range record.
type conversion. The Axis field type, such	a that cannot be imported because it failed ne imported data does not match the PCS h as a non-date value for a date/time field or for a numeric field such as Structure P/S.

### Notes

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# 11

## Using Job Service Viewer

When you need to know which job is currently running, which jobs are in the queue waiting to run, or a history of jobs that have run, use *Job Service Viewer* to view details for each of these scenarios.

Topics in this chapter include those in the following list:

- About Job Service Viewer (page 562)
- Viewing Current and Past Jobs (page 567)
- Restarting the PCS Axis Job Service (page 568)

**Note:** For information about activating a Bridge license using *Job Service Viewer*, see *Activating Bridge Import for Operation* (page 15). For information about *Reindex Database*, see *Managing the Database* (page 793).

### About Job Service Viewer

Information in this section explains how to view job status information for the following types of PCS Axis jobs.

**Note:** For information about activating the optional Bridge add-on, refer to *Activating Bridge Import for Operation* (page 15). See *Managing the Database* (page 793) for information about *Reindex Database*.

*Job Service Viewer* provides status information for the type of jobs in the following list. Status information identifies which job is currently running; which jobs are waiting in the queue to run; and a history of completed jobs (Figure 11-1).

- Bridge Import, Bridge Export, and Bridge Import/Export
- Email Notification
- Field Computer Receive

atus	vice Status Running ime 10/17/2014 1 Valid	1:09:20 PM								
atus Ti	ime 10/17/2014 1	.:09:20 PM								
ieue							R	leindex Database	Current Jobs	Job Histor
Job	b Type	Direction	State	Last Update	Suspended	Delete				
Bri	idge	Import	Validated	10/16/2014 11:09:13 AM	$\Theta$	X				l
Re	sendEmailReports		Waiting	10/16/2014 5:32:11 PM		×				
Bri	idge	Export	Running	10/17/2014 1:09:14 PM						
Em	nailReports		Waiting	10/17/2014 1:09:14 PM	$\Theta$	$\times$				
Em	nailReports		Waiting	10/17/2014 1:09:14 PM	$\Theta$	$\times$				
Em	nailReports		Waiting	10/17/2014 1:09:14 PM	0	$\times$				
Fie	eldComputer		Waiting	10/17/2014 1:42:39 PM		×				

Figure 11-1. Current Jobs

The *Current Jobs* grid displays by default when you first open *Job Service Viewer*. You can also display the grid by clicking the *Current Jobs* button (Figure 11-1, page 562). Use the *Job Type* field near the top of the window to filter data in the window. For example, if you only want to view Bridge job types, click the down arrow in the *Job Type* field and select *Bridge* in the selection list.

Information in the following table identifies the type of information that displays in the *Current Jobs* grid (Table 11-1).

Field	Description
Јоb Туре	Job types include:
	<ul> <li>Bridge: Displays for all Bridge and Field Computer Receive jobs.</li> </ul>
	• <i>EmailReports</i> : Displays for Email Notification jobs.
	<i>ResendEmailReport</i> : Displays when you resend an Email Notification.
	• <i>Reindex Database</i> : Displays for a <i>Reindex Database</i> job type. For important information about using this function, see <i>Managing the Database</i> (page 793).
Direction	<i>Import</i> displays for a Bridge import job. <i>Export</i> displays for a Bridge export job.
State	Identifies the status of a job as:
	• <i>Running</i> : Job currently in progress.
	• <i>Waiting</i> : Job waiting in the queue to run.
	• <i>Validated</i> : Indicates data has been validated for a manually run <i>Bridge Import</i> job. When the job begins processing, the status changes from <i>Validated</i> to <i>Running</i> .

Table 11-1. Current Jobs Grid Field Descriptions

Field	Description
Last Update	Job status date and time stamp.
Suspended	When a job is in a <i>Waiting</i> or <i>Validated</i> state, clicking the gold <i>Suspended</i> is button suspends processing of the job. Other jobs in the queue continue to process.
	Clicking the green <i>Suspended</i> button displays the <i>Resume Job</i> message. Click <b>Ves</b> to resume processing of the job or <b>No</b> to continue suspending the job and close the message.
	<b>Note:</b> A job with a <i>Running, Completed, or Failed</i> state cannot be suspended.
Delete	If you want to delete a job that is in a <i>Suspended</i> state, click <b>X Delete</b> . Jobs in any other state cannot be deleted, such as <i>Running, Waiting, Validated, Failed</i> , or <i>Completed</i> .

Table 11-1. Current Jobs Grid Field Descriptions

Clicking the *Job History* button displays the *Job History* grid. This grid provides status information for past jobs (completed and failed jobs). Use the *Job Type* and *Date range* fields near the top of the window to filter data in the window (Figure 11-2).

For example, if you only want to view Bridge job types for a particular date range:

- 1 Click the down arrow in the **Job Type** field and select *Bridge* in the selection list.
- 2 Click the down arrow in the **Date range** field and select an item in the selection list, such as *All*, *Today*, or *Last 72 hours*.

For a description of the various fields in the Job History grid, see Table 11-2 (page 566).

	vice Console		oorts / Graphs	Tools Field Computer	Help 🔅 PCS A	xis		Wel	come John S	mith 🛛 🦲	) 🛛 🛛 🛛
0.56	rvice Console	^									
ob 1	Type All		<ul> <li>Date range</li> </ul>	: All 🔹							
ob	Service Stat	us									
Stat	us Runi	ning									
		/2014 1:03:0	1 PM								
lice		1									
Jue	ue						Reinde	Database	Current J	obs	Job Histor
	Job Type	Direction	State	Enqueue Time	Start Time	End Time	Duration	Log	Detail Log	Delete	
۲	Bridge	Import	Completed	9/3/2014 5:34:59 PM	9/3/2014 5:35:01 PM	9/3/2014 5:35:11 PM	00:00:10			X	
	Bridge	Import	Completed	9/3/2014 5:28:31 PM	9/3/2014 5:28:54 PM	9/3/2014 5:29:04 PM	00:00:10			×	
	Bridge	Import	Completed	9/3/2014 5:18:36 PM	9/3/2014 5:18:38 PM	9/3/2014 5:19:24 PM	00:00:46			×	
	Bridge	Import	Completed	9/3/2014 5:16:05 PM	9/3/2014 5:16:09 PM	9/3/2014 5:17:38 PM	00:01:29			×	
	Bridge	Import	Completed	9/3/2014 4:54:48 PM	9/3/2014 4:55:08 PM	9/3/2014 4:55:27 PM	00:00:19			×	
	Bridge	Import	Completed	9/3/2014 3:14:50 PM	9/3/2014 3:14:52 PM	9/3/2014 3:15:01 PM	00:00:09			×	
	Bridge	Import	Completed	9/3/2014 3:08:18 PM	9/3/2014 3:08:21 PM	9/3/2014 3:08:30 PM	00:00:09			×	
	Bridge	Import	Completed	9/3/2014 3:01:56 PM	9/3/2014 3:02:01 PM	9/3/2014 3:02:09 PM	00:00:08			×	
	Bridge	Import	Completed	9/3/2014 2:56:45 PM	9/3/2014 2:56:49 PM	9/3/2014 2:57:09 PM	00:00:20			×	
	Bridge	Import	Completed	9/3/2014 1:30:55 PM	9/3/2014 1:30:59 PM	9/3/2014 1:31:12 PM	00:00:13			×	
	Bridge	Import	Completed	9/3/2014 12:14:34 PM	9/3/2014 12:15:03 PM	9/3/2014 12:24:11 PM	00:09:08			×	
	Bridge	Import	Completed	9/3/2014 11:36:01 AM	9/3/2014 11:36:38 AM	9/3/2014 11:48:09 AM	00:11:31			X	
	Bridge	Import	Completed	9/2/2014 3:46:41 PM	9/2/2014 3:47:39 PM	9/2/2014 3:59:41 PM	00:12:02			×	
_	Bridge	Import	Completed	8/29/2014 2-40-25 PM	8/29/2014 2-40-26 PM	8/29/2014 2-40-34 PM	00-00-08		<u> </u>	×	

Figure 11-2. Job History

Field	Description	
Job Type	Job types include:	
	• <i>Bridge</i> : Displays for all Bridge and Field Computer Receive jobs.	
	<ul> <li>EmailReports: Displays for Email Notification jobs.</li> </ul>	
	<ul> <li>ResendEmailReport: Displays when you resend an Email Notification.</li> </ul>	
	• <i>Reindex Database</i> : Displays for a <i>Reindex Database</i> job type. For important information about using this function, see <i>Managing the Database</i> (page 793).	
Direction	<i>Import</i> displays for a Bridge import job. <i>Export</i> displays for a Bridge export job.	
State	Identifies the status of a job as:	
	• <i>Completed</i> : Jobs that have run successfully are labeled Completed.	
	• <i>Failed</i> : Jobs that have not run successfully are labeled Failed.	
Enqueue Time	Date and time stamp showing when a job was placed in the queue to run.	
Start Time	Date and time stamp showing when a job began running.	
End Time	Date and time stamp showing when a job finished running.	
Duration	Time stamp showing the total amount of time a job was processed.	

Table 11-2. Job Histor	ry Grid Field Descriptions
------------------------	----------------------------

Field	Description
Log	Log with job summary information.
Detail Log	Log with job summary and status information. You can also re-send an Email Notification report to one or more email recipients by clicking the <i>ReSend</i> check box.
Delete	If you want to delete an entry in the Job History grid, select an entry and then click $\nearrow$ <b>Delete</b> . The grid also supports multiple selections by pressing either the <i>Shift</i> or <i>Ctrl</i> key on the computer keyboard while selecting multiple entries.

Table 11-2. Job History Grid Field Descriptions (continued)

### Viewing Current and Past Jobs

To view current and past jobs, follow these steps:

- 1 Click **Tools** > **Job Service Viewer** to open the *Job Service Console* (Figure 11-1, page 562).
- 2 To view jobs that are currently running and in the queue, click **Current Jobs**.
- **3** To view a list of all past jobs that have previously run, click **Job History**. If you want to view additional information about a job listed in the *Job History* grid, click the **[]** log icon for that job.
- 4 If you want to filter the data view in the console to only view a particular job type, click the down arrow in the **Job Type** field and select an option in the list, such as *Email Reports* or *Field Computer*.
- **5** To close the *Job Service Console*, click the  $\times$  close button.

### Restarting the PCS Axis Job Service

If the message *Not Running* displays in the *Status* field of the Job Service Console as shown in the following figure (Figure 11-3), use the procedure in this section to restart the PCS Axis Job Service. PCS Axis Job Service monitors the job queue, initiating jobs as they become available.

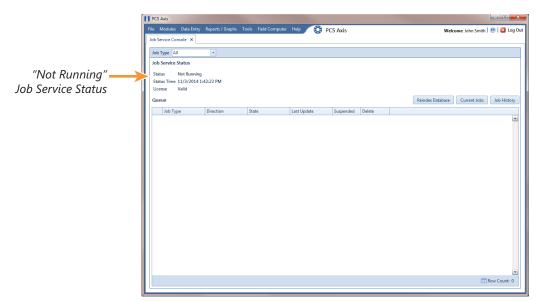


Figure 11-3. Job Service Status

Complete the following steps to verify connection settings are correct and restart the PCS Axis Job Service:

- **1** Start *PCS Axis Connection Manager* and verify connection settings specify the correct server and database as follows:
  - a Click the Windows **Start** button (3) and navigate to the program folder labeled *PCS Axis 1.9*. Select **PCS Axis Connection Manager 1.9** to start the program (Figure 11-4, page 569).
  - Verify the server name is correct in the Server field and the database name is correct in the Database field. If either is incorrect, click Select in the Server field to select the correct server or click Select in the Database field to select the correct database.
  - **c** Verify the **Connection String** field includes the correct server and database name.

d Click 
☐ Save and then click 
 Test to verify connection settings. When connection settings are correct, the message *Connection successful* displays. Click 
 OK to close the message and then click 
 Close to exit PCS Axis Connection Manager.

**IMPORTANT:** If connection settings are incorrect, contact your company's Database Administrator or IT Administrator for the name of the correct server and database. The information will then need to be set in *PCS Axis Connection Manager* using the steps in this procedure.

Pcs Axis Connection Manager	_	-	Save and Close 📔 Sa	ve   🔀 Clo
Connections Default (Primary)	<b>(</b>	Default	🏠 Make Default	X Delete
		🗸 Primary	🛷 Activate   🙆 Test   🍥 Crea	ite / Upgrad
		Server	DB_SERVER	Select
		Database	DB_INITIAL_CATALOG	🎆 Selec
		Connection String	Data Source=DB_SERVER;Initial Catalog=DB_INITIAL_CATALOG;Integrated Security=True	
				St Corr
		V Subscription	√ Activate   ◎ Tes	at 🛛 🥒 Cle
		Server		🏭 Sele
		Database		🏭 Sele
		Connection String		
				Star Corr

Figure 11-4. PCS Axis Connection Manager

- 2 If the PCS Axis database and PCS Axis Job Service are installed on two different network servers, complete the following steps to set up a user account to log on as a service. The user account must be a member of the *Axis\_Users* group and have access to the central database server and PCS Axis database.
  - a Click the Windows Start button and navigate to Computer. Right-click
     Computer and select Manage in the shortcut menu to open the Computer Management console (Figure 11-5, page 570).
  - **b** Double-click **Services and Applications** in the left pane of the console. Then click **Services** to display a list of services in the middle pane.

le Action View Help							
Computer Management (Local)	O. Services					Actions	-
System Tools	100	· ·				Services	
Storage	PCS Axis Job Service 1.8	Name	Status	Description	Startup Type *		
Services and Applications	Start the service	Network Store Interface Service	Started	This service delivers network notif		More Actions	
Internet Information Services (IIS) Mi	b lance	G Office Source Engine		Saves installation files used for up		PCS Axis Job Service 1.8	
Services	. 6	Office Software Protection Platform		Enables the download, installatio	Manual		1
i WMI Control	Description:	🖏 Offline Files		The Offline Files service performs		More Actions	
B SQL Server Configuration Manager	Monitors the PCS Axis job queue, initiating jobs as they become	Real Controls		This service is a stub for Windows	Manual		
	available.	R PCS Axis Job Service 1.8		Monitors the PCS Axis job queue,	Automatic		
		Peer Name Resolution Protocol		Enables serverless peer name reso			
		Peer Networking Grouping		Enables multi-party communicati			
		🧠 Peer Networking Identity Manager		Provides identity services for the	Manual		
		👊 Performance Logs & Alerts		Performance Logs and Alerts Coll	Manual		
		🔍 Plug and Play	Started	Enables a computer to recognize	Automatic		
		🔍 PnP-X IP Bus Enumerator		The PnP-X bus enumerator servic	Manual		
		端 PNRP Machine Name Publication S		This service publishes a machine	Manual		
		端 Portable Device Enumerator Service		Enforces group policy for remova	Manual _		
		🔍 Power	Started	Manages power policy and power	Automatic		
		端 Print Spooler	Started	Loads files to memory for later pri	Automatic		
		Problem Reports and Solutions Con		This service provides support for	Manual		
		Program Compatibility Assistant Ser	Started	This service provides support for t	Manual		
		🔍 Protected Storage		Provides protected storage for se	Manual		
		端 Quality Windows Audio Video Exper		Quality Windows Audio Video Exp	Manual		
		🔍 Remote Access Auto Connection M		Creates a connection to a remote	Manual		
		🔍 Remote Access Connection Manager		Manages dial-up and virtual priva	Manual		
		端 Remote Desktop Configuration		Remote Desktop Configuration se	Manual		
		Remote Desktop Services		Allows users to connect interactiv	Manual		
		Remote Desktop Services UserMode		Allows the redirection of Printers/	Manual		
		Remote Procedure Call (RPC)	Started	The RPCSS service is the Service C	Automatic		
		Remote Procedure Call (RPC) Locator		In Windows 2003 and earlier versi	Manual		
		Remote Registry		Enables remote users to modify re	Manual		
		Routing and Remote Access		Offers routing services to busines	Disabled		
		Appendix 1 1 1 1	C	n 1 00011 0 11 100	A. 1. 11 T		

Figure 11-5. Computer Management Console

c Right-click **PCS Axis Job Service 1.9** (Figure 11-7) and select **Properties** in the shortcut menu to open the *Properties* dialog box (Figure 11-6).

PCS Axis Job Service 1.9 P	roperties (Local Computer)	<b>×</b>
General Log On Recov	very Dependencies	
Log on as:		
Local System account Allow service to information		
This account:	Brow	wse
Password:	•••••	
Confirm password:	•••••	
Help me configure user a	ccount log on options.	
	OK Cancel	Apply

Figure 11-6. PCS Axis Job Service Properties

- **d** Click the **Log On** tab and select the option **This account**. To set up a user account to log on as a service, type the user name and password in the appropriate fields. You can also view a list of appropriate user accounts by clicking *Browse* > *Advanced* > *Find Now*.
- e Click **Apply** and then **OK** to close the *Properties* dialog box and return to the *Computer Management* console.

- **3** Complete the following steps in the *Computer Management* console to restart the PCS Axis Job Service:
  - a Select PCS Axis Job Service 1.9 and then click Start (Figure 11-7).
  - **b** Click **File** > **Exit** to close the *Computer Management* console.
  - **c** In PCS Axis, verify the message *Running* displays in the *Status* field of the Job Service Console (Figure 11-3, page 568).

**IMPORTANT:** If the PCS Axis Job Service does not start, contact PCS Technical Services using the contact information in section titled *Technical Support* (page 25).

ile Action View Help						
🔿 🖄 📰 🗈 🔒 📓 🖬 🕨	■ II I>					
Computer Management (Local)	O Services					Actions
🎁 System Tools 🚰 Storage	PCS Axis Job Service 1.8	Name	Status	Description	Startup Type 🖍	Services
Services and Applications	Start the service	Service	Started	This service delivers network notif	Automatic	More Actions
V Internet Information Services (IIS) Ma Services	R	Office Source Engine Office Software Protection Platform		Saves installation files used for up Enables the download, installatio	Manual Manual	PCS Axis Job Service 1.8
WMI Control	Description:	Offline Files		The Offline Files service performs		More Actions
SQL Server Configuration Manager	Monitors the PCS Axis job queue,	Real Controls		This service is a stub for Windows	Manual	
	initiating jobs as they become available.	RCS Axis Job Service 1.8		Monitors the PCS Axis job queue,	Automatic	
		🔅 Peer Name Resolution Protocol		Enables serverless peer name reso	Manual	
		Peer Networking Grouping		Enables multi-party communicati	Manual	
		Peer Networking Identity Manager		Provides identity services for the	Manual	
		Reformance Logs & Alerts		Performance Logs and Alerts Coll	Manual	
		😘 Plug and Play	Started	Enables a computer to recognize	Automatic	
		Operation Service Provide the Property of t		The PnP-X bus enumerator servic This service publishes a machine	Manual	
		PINKP Machine Name Publication S Portable Device Enumerator Service		Enforces group policy for remova	Manual	
		Power	Started	Manages power policy and power		
		Se Print Spooler	Started	Loads files to memory for later pri	Automatic	
		Problem Reports and Solutions Con	Started	This service provides support for	Manual	
		Registration Program Compatibility Assistant Ser	Started	This service provides support for t		
		C. Protected Storage		Provides protected storage for se	Manual	
		Quality Windows Audio Video Exper		Quality Windows Audio Video Exp	Manual	
		Remote Access Auto Connection M		Creates a connection to a remote	Manual	
		🔍 Remote Access Connection Manager		Manages dial-up and virtual priva	Manual	
		🧠 Remote Desktop Configuration		Remote Desktop Configuration se	Manual	
		Remote Desktop Services		Allows users to connect interactiv	Manual	
		Remote Desktop Services UserMode		Allows the redirection of Printers/	Manual	
		Remote Procedure Call (RPC)	Started	The RPCSS service is the Service C		
		Remote Procedure Call (RPC) Locator		In Windows 2003 and earlier versi	Manual	
		🔍 Remote Registry		Enables remote users to modify re		
		Routing and Remote Access		Offers routing services to busines	Disabled	
		()		B I BROTTE ITTE		

Figure 11-7. Computer Management Console

Notes	

# 12

# **Using Email Notification**

*Email Notification* is a feature that allows you to send reports at a regularly scheduled time as an attachment in an email to recipients. Reports are in Adobe<sup>®</sup> PDF format and can be sent to one or more PCS Axis users as well as to non-PCS Axis users. You can set up email notifications with email reports that only include data for pipeline segments assigned to a recipient as well as pipeline segments assigned to an email report.

**IMPORTANT:** Because some email servers are set up to process emails no larger than 10 MB (megabytes) in size, it may be necessary to contact your IT department for this information to ensure email recipients receive email notifications.

Topics in this chapter include those in the following list and are intended for users with *SysAdmin* permissions:

- Adding Email Recipients (page 574)
- Adding an Email Report (page 580)
- Assigning Reports by Recipient or Email Report (page 585)
- Viewing the Log (page 588)
- Re-sending Reports (page 589)
- Stopping Delivery of Email Notifications (page 590)

**Note:** Using *Email Notification* requires property settings in *Options (Tools > Options)*. For more information refer to *Setting Email Notification Options* (page 44).

## Adding Email Recipients

Information in this section explains how to add email recipients of reports. Email recipients are both users and non-users of PCS Axis and can be set up with more than one email address. Topics in this section include:

- Adding a PCS Axis User
- Adding an External User (page 578)

**NOTE:** Do not assign all pipeline segments in the hierarchy to recipients of email reports. Doing so may cause server problems when sending email notifications.

Likewise, use a limited hierarchy selection for users with *SysAdmin* privileges. Email reports are generated based on the hierarchy view in *Email Notifications* for *SysAdmin* users, which is ALL pipeline segments in PCS Axis.

#### Adding a PCS Axis User

The following procedure explains how to add a PCS Axis user in *Email Notification*. The process includes assigning one or more pipeline segments to the PCS Axis user. This allows PCS Axis to send email reports that include data *only* for those pipeline segments assigned to the PCS Axis user.

Complete the following steps:

- 1 Click **Tools** > **Email Notification** to open the *Email Notification* window.
- 2 Click ① Add Pcs Axis User to display a list of PCS Axis users. All PCS Axis users added in User Management (Tools > User Management) display in the center panel of the Email Notification window.
- **3** Select a user name in the center panel (Figure 12-1).

Modules Data Entry Reports / Graphs Tools Field (	Computer Help 🚫	PCS Axis			Welcome John Smith   📵   🔀 L
ail Notification ×					
Recipients Email Reports Assignm	ents Log				
				🛛 🖉 Edit 🛛 😋 Ad	ld Pcs Axis User   🗢 Add External User   🗡 D
Hierarchy					Email Address
My Pipeline Company	Search				bob.brown@aiworldwide.com
✓ Southwest Region	User Name 4	First Name Middle Initi	I Last Name	Hierarchy	bob@gmail.com
TRANSMISSION SYSTEMS	bob.brown	Bob	Brown	By Recipient Selection	a bob@gmail.com
T-1401 ; College Station to Austin	george.abney	George	Abney	By Recipient Selection	
T-1403 ; Dallas to Houston	jack.smith	Jack	Smith	By Recipient Selection	
· 1405 ; Builds to Houston	🔒 jane.amold	Jane	Arnold	By Recipient Selection	
	🔒 joe.white	Joe	Brown	By Recipient Selection	
	john.smith	John	Smith	By Recipient Selection	
				I Row Count	.7

Figure 12-1. Recipients / Add PCS Axis User

- 4 If PCS Axis is set up with *Hierarchical Security* in system *Options* (*Tools* > *Options*), click the down arrow in the **Hierarchy** field and select one of the following options. Your selection determines which pipeline segments are assigned to the user.
  - Select **By Hierarchy Security** if you want to use the same pipeline segments assigned to the user in *Hierarchy Rights* of *User Management* (*Tools > User Management*).
  - Select **By Recipient Selection** if you want to assign one or more pipeline segments to the PCS Axis user in the *Hierarchy* panel of the *Recipients* tab.

**NOTE:** For information about *Hierarchical Security*, refer to *Setting Security Options* (page 52) and *Setting Up User Management* (page 187).

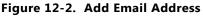
5 If **By Recipient Selection** is selected in the *Hierarchy* field, click the ▶ toggle arrow in the *Hierarchy* panel to view a list of pipeline segments in the hierarchy. Click the check box for each pipeline segment you want to assign to the user.

A check mark inside the check box indicates a selection. To clear a selection, click the check box to remove the check mark.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays information related to required property settings.

- **6** If you want to add an additional email address for the PCS Axis user, complete the following steps:
  - a Click 🛟 Add Email to open the Add Email Address dialog box (Figure 12-2).

🚹 Add Email Add	ess	<b>X</b>
		🞻 OK   🔞 Cancel
Email Address	bob@gmail.com	



- **b** Type an email address in the **Email Address** field and then click **V OK**. Repeat this step as needed to add another email address.
- 7 Click 💾 Save to save changes.

The *Email Address* panel displays all email addresses set up for a user selected in the center panel (Figure 12-3).

PCS Axis			
File Modules Data Entry Reports / Graphs Tools Field Com	puter Help	😳 PCS Axis	Welcome John Smith   😣   🔀 Log Ou
Email Notification ×			
Recipients Email Reports Assignments		og	
			📔 Save   🛞 Cancel   🔀 Close
Hierarchy			Email Address
⊿ □ ➡My Pipeline Company	First Name	Bob	Add Email
Northeast Region	Middle Initial		bob.brown@aiworldwide.com
Northwest Region	Last Name	Brown	bob@gmail.com X
<ul> <li>Southeast Region</li> <li>Southwest Region</li> </ul>	Hierarchy	By Recipient Selection	
COMPRESSOR STATIONS			
▶ □ GATHERING SYSTEMS			
PRODUCTION SYSTEMS			
TRANSMISSION SYSTEMS RECTIFIER DEMO ;			
RECTIFIER DEMO ;			
T-1400 ; Waco to College Station			
☑ T-1401 ; College Station to Austin			
T-1402 ; Midland to Dallas			
✓ T-1403 ; Dallas to Houston □ T-1600 ; Transmission Scheduling			
T-1700 ; Longview to Kilgore			
T-1701 ; Kilgore to Henderson			
T-1903 ; Station 400 to Station 401			
<b>↓</b>			

Figure 12-3. Recipients / Email Address

#### Adding an External User

An external user is a person who is not set up with login credentials for PCS Axis in *User Management* (*Tools* > *User Management*). The following procedure explains how to add an external user as a recipient of one or more email reports.

Complete the following steps:

- 1 Click **Tools** > **Email Notification** to open the *Email Notification* window.
- 2 Click Add External User. Type the user's First Name, Middle Initial (optional), and Last Name in the respective fields located in the center panel of the window (Figure 12-4).

**Note:** Clicking the  $\nabla$  toggle button in the (i) information bar displays information related to required property settings.

PCS Axis		
File Modules Data Entry Reports / Graphs Tools	Field Computer Help 😯 PCS Axis	Welcome John Smith   🥹   🔀 Log Out
Email Notification ×		
Recipients Email Reports As	signments Log	
		🛃 Save   🛞 Cancel   🔀 Close
Hierarchy	▼ (i) It appears that you have some invalid options, please correct the following (3)	Email Address
My Pipeline Company	First Name	🗘 Add Email
	Middle Initial	
	Last Name Hierarchy By Recipient Selection -	
		· · · · · · · · · · · · · · · · · · ·

Figure 12-4. Recipients / Add External User

**3** Click **• Add Email** to open the *Add Email Address* dialog box (Figure 12-5). Type the user's email address in the **Email Address** field and then click **</ OK**. Repeat this step as needed to add another email address.

Add Email Add	ress	×
		🛷 OK   🔞 Cancel
Email Address	bob@gmail.com	

Figure 12-5. Add Email Address

4 Click the toggle arrow ▶ in the *Hierarchy* panel to view a list of pipeline segments in the hierarchy. Click the check box for each pipeline segment you want to assign to the user (Figure 12-6).

Assigning pipeline segments to the external user allows PCS Axis to send email reports with data *only* for those pipeline segments assigned to the external user.

A check mark inside the check box indicates a selection. To clear a selection, click the check box to remove the check mark.

5 Click 💾 Save to save changes.

The *Email Address* panel displays all email addresses set up for a user selected in the center panel (Figure 12-6).

Modules Data Entry Reports / Graphs Tools	Field Computer Help 🔅 PCS Axis	Welcome John Smith   🥹   🔀 I
Recipients Email Reports As	signments	
		🛛 🖬 Save 🛛 🎯 Cancel 🛛 🔀
Hierarchy		Email Address
4 🔲 My Pipeline Company	First Name Andy	🗘 Add I
Northeast Region	Middle Initial	andy@gmail.com
LG123 LG123A ; NE Paddock #1	Last Name Johnson	
LG123B ; NE Paddock #2	Hierarchy By Recipient Selection -	
☑ LG123C ; NE Paddock #3		
LG123D ; NE Paddock #4 Morthwest Region		
<ul> <li>Northwest Region</li> <li>Southeast Region</li> </ul>		
Southwest Region		

Figure 12-6. Recipients / External User

#### Adding an Email Report

An email report is a named set of property settings that define the content and transmission schedule of emails sent to recipients. It is the definition file that identifies the PCS Axis report, pipeline segment selection(s), and transmission schedule. Email reports are set up independently of email recipients. This allows you to assign the same email report to more than one recipient.

An email report can include any columnar report available in the *Reports/Graph* menu. Custom columnar reports must also be set up with the *public* property setting. Graph reports are not currently supported in *Email Notification*.

**Note:** For information about custom columnar reports and the *public* property setting, see *Adding a Custom Report* (page 742).

To add an email report, follow these steps:

- 1 Click **Tools** > **Email Notification** to open the *Email Notification* window.
- 2 Click Email Reports Email Reports , then click 🛟 Add (Figure 12-7).

CS Axis Modules Data Entry Reports / Graphs	iools Field Computer Help 🔗 PCS Axis	Welcome John Smith   🕑   🛛 La
nail Notification 🗙		
Recipients Email Reports	Assignments	
		🛛 🗄 Save 🛛 🎯 Cancel 🛛 🔀 Cl
Hierarchy	∇ (i) It appears that you have some invalid options, please correct the following (2)	
My Pipeline Company	Name Send No Data Found	
	Mode Full   Hierarchy By Assigned Recipier	nt 🔹
	Seed Date 12/17/2013 Time 2:00 AM	
	Frequency	
	Recurs every 1 C day(s) starting 12/17/2013 at 2:00 AM	
	O Daily	
	O Weekly	
	Monthly	
	O Quarterly	
	E Full View O Add Associated Report	

Figure 12-7. Email Reports

**3** Type a name for the email report in the **Name** field. Fields requiring information include a **S** icon, such as *Name* shown in the previous example (Figure 12-7, page 580).

The filename of the PDF report sent as an attachment in an email to recipients includes the *Name* of the email report and transmission date. This same information is used as the *Subject* of the email, such as *My\_Email\_Report\_03\_10\_2013.pdf*.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays information related to required property settings.

- 4 Complete one of the following steps to set the check box *Send No Data Found*:
  - **a** To always have an email sent to recipients, including when no report data is found, click the check box **Send No Data Found** to place a check mark inside the check box. When no report data is found, the recipient receives a report with the message *No Data Found*.
  - **b** To only send a report to an email recipient when report data is found, clear the check mark by clicking the check box **Send No Data Found**.
- **5** Choose which data to include in the report. Click the down arrow in the **Mode** field and select one of the following options:
  - *Full*: Report includes current and historical data.
  - *Incremental*: Report only includes new data that has occurred since the last time the report was sent to email recipients.
- **6** Click the down arrow in the **Hierarchy** field and select one of the following options that determine which pipeline segments to include in the report:
  - *By Assigned Recipient*: Report includes data *only* for those pipeline segments assigned to a recipient in the *Recipients* tab of *Email Notification*.
  - *By Email Report Selection*: Report includes data *only* for those pipeline segments assigned to the email report in the *Hierarchy* panel of the *Email Reports* tab in *Email Notification*.

- 7 If you selected *By Email Report Selection* in step 6, complete the following steps to select which pipeline segments to include in the email report:
  - **a** Click the toggle arrow **b** in the *Hierarchy* panel to view a list of pipeline segments in the hierarchy (Figure 12-8).

PCS Axis		
File Modules Data Entry Reports / Graphs Tools Field	d Computer Help 🔅 PCS Axis	Welcome John Smith   😢   🔀 Log Out
Email Notification ×		
Recipients Email Reports Assign	ments Log	
Recipients chain reports Assign	Log	🗄 Save 🚳 Cancel 🔀 Close
Hierarchy	∇ (i) It appears that you have some invalid options, please correct the following (1)	
▲ □ ♥My Pipeline Company	Name My Email Report_1	
A Wy Pipeline Company	Mode Full Therarchy By Email Report Selection	*
▲ □ ↓LG123	Seed Date 12/17/2013 Time 2:00 AM	
LG123A ; NE Paddock #1	Frequency	
✓ LG123B ; NE Paddock #2	Recurs every 1 🗘 day(s) starting 12/17/2013 at 2:00 AM	
✓ LG123C ; NE Paddock #3 ✓ LG123D ; NE Paddock #4	() Daily	
<ul> <li>In Northwest Region</li> </ul>	Weekly	
Southeast Region	Monthly	
Southwest Region	Quarterly	
	🖾 Full View   😋 Add Associated Report	
		]

Figure 12-8. Email Reports

- **b** Click the check box for each pipeline segment you want to include in the report. A check mark inside the check box indicates a selection. To clear a selection, click the check box to remove the check mark. In the following figure, pipeline segments *LG123-D* and *LG123-E* have been selected in the *Hierarchy* panel.
- **8** Complete the following steps to set up a transmission schedule for sending email reports to recipients.

**IMPORTANT:** When setting up a transmission schedule, consider a time and frequency interval that does not impact other network services or computer resources.

a Choose a date to begin sending the report. Click the down arrow in the SeedDate field to select a start date using a calendar.

**b** If you want to override the default time set up in *Options* for sending reports, enter a time in the **Time** field. Use 12-hour time format to indicate the hour, minute, and AM/PM setting (HH:MM AM/PM).

**NOTE:** For more information about *Options*, see *Setting Email Notification Options* (page 44).

- **c** Choose how often to send reports to email recipients. Select one of the following options to set a *Frequency* schedule:
  - *Daily*: Sends first report on the *Seed Date* and recurring reports at regular intervals based on the *Recurs every* setting.
  - *Weekly*: Sends first report on the *Seed Date* and recurring reports at regular intervals based on settings for *Recurs every* and a day of the week selection.
  - *Monthly*: Sends first report on the *Seed Date* and recurring reports at regular intervals based on day and month settings.
  - *Quarterly*: Sends first report on the *Seed Date* and recurring reports at regular intervals based on the first day of each quarter.
- **9** To select a PCS Axis report to send to email recipients, follow these steps:
  - a Click **Click Add Associated Report** to open the *Add Associated Report* window (Figure 12-9).

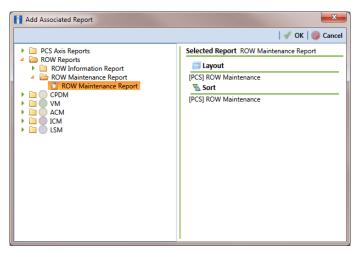


Figure 12-9. Add Associated Report

Double-click a folder to view a list of reports available for selection. Clicking the toggle arrow for a report category also displays available reports.

For example, double-clicking ROW Reports > ROW Maintenance Report displays a list of reports available for selection.

- c Select a report in the list to move it to the *Selected Report* panel and then click **√ OK**.
- **10** Click **Full View** to only display fields for setting report options. Clicking *Full View* again displays all fields (Figure 12-10).

**NOTE:** Clicking the *Hierarchy* bar hides the *Hierarchy* panel. Clicking the bar again opens the panel.

PCS	Axis	🗖 🗖 <mark>— X</mark>
	Modules Data Entry Reports / Graphs Tools Field Computer Help 🔗 PCS Axis	Welcome John Smith   🕑   🔀 Log Out
	Recipients Email Reports Assignments Log	
		💾 Save   🚳 Cancel   🔀 Close
	S Full View O Add Associated Report	
	ROW Maintenance Report	
	🔀 View	
	Select Layout Theme  PCS] ROW Maintenance	
	Sort Options	
	Select Sort Dates	
	[PCS] ROW Maintenance     Oldest First     Newest First	
	Insert Lines Between Groups Page Breaks	
>	None • None	·
Hierarchy	(2) Options	
Hier	Only include facilities with maintenance during the reporting time period Filter Options:	
	All maintenance that meet the filter criteria	
	Apply other filters to the most recent maintenance found within report timeframe	
	O The most recent maintenance after the filter criteria has been met	
	🝸 Filters	💿 New 'And' Group 🛛 💿 New 'Or' Group
		-
		=

Figure 12-10. Email Reports

**11** Set report options as required, such as a layout and sorting theme. For more information about report options, see *Working with a Report Based on the Columnar Report Style* (page 732).

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.



Email reports currently set up in the system display in the *Email Reports* window as shown in Figure 12-11.

Re	cipients Emai	Reports Assignments	Log	)				
						8	Edit   🗠 I	Revert   😋 Add   🗡 🛙
	Search							
	Name	<ul> <li>Associated Report</li> </ul>	Hierarchy	Frequency	Time	Seed Date	Mode	Send No Data Found
	My Email Report_1	ROW Maintenance Report	By Assigned Recipient	Daily	2:00 AM	12/17/2013	Full	True
	My Email Report_2	PCS Axis Schedule Report	By Assigned Recipient	Daily	2:00 AM	12/17/2013	Full	True
	My Email Report_3	CPDM Survey Report	By Assigned Recipient	Daily	2:00 AM	12/17/2013	Full	True
	My Email Report_4	Test Point Maintenance Report	By Assigned Recipient	Daily	2:00 AM	12/17/2013	Full	True
rchy								
Hierarchy								
Hierarchy								

Figure 12-11. Email Reports

#### Assigning Reports by Recipient or Email Report

Assigning email reports *By Recipient* allows PCS Axis to only include data for pipeline segments assigned to the recipient in the *Recipients* tab of *Email Notification*. When assigning email reports *By Email Report*, the report only includes data for pipeline segments assigned to the email report in the *Email Reports* tab of *Email Notification*.

To assign an email report either By Recipient or By Email Report, follow these steps:

- 1 If the *Email Notification* window is not open, click **Tools** > **Email Notification**.
- 2 Click Assignments Assignments and then click Add/Remove Assignments.
- **3** To include data in an email report *only* for those pipeline segments assigned to a selected recipient, complete the following steps:
  - a Click By Recipient By Recipient if it is not selected (Figure 12-12).

	Recipients	Email Reports	Assignments	Log			
E	By Recipient	By Email Report					
							📔 🖁 Save and Close 🛛 🔡 Save 🛛 🚳 Cancel 🛛 🔀 Clo
Se	earch						
	User Name	<ul> <li>First Name</li> </ul>	Middle Initial	Last Name	_		
Þ		Andy		Johnson			
	bob.brown	Bob		Brown			
	george.abney	George		Abney			
	jack.smith	Jack		Smith			
	jane.arnold	Jane		Arnold			
	joe.white	Joe		Brown			
	john.smith	John		Smith			
	<b>ndy Johnso</b> i ilable Email Report				0.0	signments	E Row Count: 1
_	y Email Report_2	5				Ay Email Report_1	
	y Email Report_2					/ly Email Report_3	
					•		

Figure 12-12. Assignments By Recipient

Select an email recipient in the grid and then double-click a report in the *Available Email Reports* panel to move the report to the *Assignments* panel. Repeat this step as needed for another email recipient listed in the grid.

Clicking the  $\bigcirc$  top arrow button also moves a selected report to the *Assignments* panel.

c Click 💾 Save.

- **4** To include data in an email report *only* for those pipeline segments assigned to the email report, complete the following steps:
  - a Click By Email Report By Email Report (Figure 12-13).

PCS Axis				
File Modules Data Entry Reports	/ Graphs Tools Field Computer	Help	PCS Axis	Welcome John Smith   🕑   🔀 Log Out
Email Notification ×				
Recipients Email Re	eports Assignments	Log		
By Recipient By Email		Log		]
by Recipient by Entan	hepore			📳 Save and Close 🔡 Save 🚳 Cancel 🔀 Close
Search				
Name 🔺				
My Email Report_1				·
My Email Report_2 My Email Report_3				
My Email Report_4				
				<b>T</b>
				E Row Count: 4
My Email Report_1				
Available Recipients			Assignments	
Jack Smith (jack.smith)			Andy Johnson	
Jane Arnold (jane.arnold) Joe Brown (joe.white)			Bob Brown (bob.brow George Abney (george	
John Smith (john.smith)			George Abriey (georg	eabley)
		$(\mathbf{b})$		
		Ĩ		
		$\bigcirc$		

Figure 12-13. Assignments by Email Report

**b** Select an email report in the grid and then double-click a recipient user name in the *Available Recipients* panel to move the user name to the *Assignments* panel. Repeat this step as needed for another email report listed in the grid.

Clicking the  $\bigcirc$  top arrow button also moves a selected user name to the *Assignments* panel.

c Click 💾 Save.

## Viewing the Log

The *Email Notification* log is an activity log that identifies PCS Axis reports sent to email recipients. It includes a transmission date; whether or not email reports transmitted successfully; and set up information such as *Frequency* and *Mode* settings in the *Email Reports* tab of *Email Notification*.

If your computer is installed with Adobe<sup>®</sup> Reader, you can also view a copy of a report sent to an email recipient by clicking the *Preview* button in the *Details For* group box (Figure 12-14). Clicking *ReSend* for a selected email recipient in the *Recipients For* group box allows PCS Axis to re-send reports assigned to the user.

**NOTE:** PCS Axis retains log information and associated email reports in PDF format for the length of time specified in system *Options*. See *Setting Email Notification Options* (page 44) for more information.

To open the Email Notification log, follow these steps:

1 If the *Email Notification* window is not open, click **Tools** > **Email Notification**.

Date ra		nail Repo	orts	Assignments		Log						
	ange: All	*									😏 Refresh   🖂	🛛 Rese
Searc	ch											
N	Name		Sent Date		Status	Status Message	Email Subject		Frequency	Mode	Send No Data	
N	My Email Notification R	eport_1	12/17/2013	2:05:11 PM	Success		My Email Notific	ation Report_1 12 17 20	13.pdf Daily	Full	V	
N	My Email Notification R	eport_2	12/17/2013	2:06:01 PM	Success	11	My Email Notific	ation Report_2 12 17 20	13.pdf Daily	Full	V	
N	/ly Email Report_1		12/17/2013	4:14:30 PM	Success	11	My Email Report	_1 12 17 2013.pdf	Daily	Full	V	
> N	/ly Email Report_2		12/17/2013	5:04:26 PM	Success		My Email Report	_2 12 17 2013.pdf	Daily	Full	V	
N	/ly Email Report_3		12/17/2013	4:14:41 PM	Success		My Email Report	_3 12 17 2013.pdf	Daily	Full	V	
N	/ly Email Report_4		12/17/2013	5:04:14 PM	Success	11	My Email Report	_4 12 17 2013.pdf	Daily	Full	V	
<u>ک</u>	george.abney	George	ne	Middle Initial	Abr		Success	Status Message	Resend			
	User Name	First Nan	ne	Middle Initial			Status	Status Message	ReSend			
8	jack.smith	Jack			Smi	th	Success					
4	bob.brown	Bob			Bro	wn	Success					
											🖽 Row C	ount:
	s For George Abney											
Details	Address george.abne	y@aiworldv	wide.com									
_							Hierarchy					
Email Attack	hment Q Preview						🔺 🚽 M	y Pipeline Company				
Email Attach Messa	hment Q Preview	. See attac	hed file for e	vent log.				Southwart Pagion				
Email Attach Messa PCS	hment Q Preview		hed file for e	vent log.				Southwest Region				

2 Click Log Log to open the *Email Notification* log (Figure 12-14).

Figure 12-14. Email Notification Log

- **3** Click the down arrow in the **Date range** field and select an option, such as *Last 24 hours*.
- **4** To sort information alphanumerically in ascending or descending order, click a column heading in the reports grid or in the *Recipients For* group box.

**NOTE:** When navigating the reports grid, pressing *Home* on the computer keyboard moves the cursor to the top of the grid. Clicking *Full View* opens and closes the panels *Recipients For* and *Details For* allowing you to view only the reports grid.

- **5** To view a copy of a report sent to an email recipient:
  - a Select a report in the list and then select an email recipient in the Recipients
     For group box. Information related to your selections display in the Details
     For group box.
  - **b** Click **Preview** Preview to open a copy of the selected report in Adobe Reader.

#### **Re-sending Reports**

The following procedure explains how to re-send a report to an email recipient.

**Note:** You can also re-send a report to an email recipient using the *Job History Detail Log* in *Job Service Viewer*. For more information refer to Table 11-2 in *About Job Service Viewer* (page 562).

Complete the following steps:

- **1** If the *Email Notification* window is not open, click **Tools** > **Email Notification**.
- 2 Click Log Log to open the *Email Notification* log (Figure 12-14, page 588).
- 3 Select a report in the list and then select an email recipient in the **Recipients For** panel. Click the **ReSend** check box for the selected recipient to place a check mark inside the check box. Then click **Resend**.
- 4 Click 🔄 Refresh to update information displaying in the window.

The report is sent as a PDF attachment in an email to the recipient. The following figure shows an example of a typical email notification in Microsoft<sup>®</sup> Outlook<sup>®</sup> (Figure 12-15).

Junk - Delete     Reply     Reply     Reply     Forward     More - All     To Manager     Image: Comparison of the comparison of t	FILE MESSA	IGE	viy Email Notification Repo	ort_1 12 17 2013.pdf - Message (	Prain ( ext)	f 👎	] - []
Tur 12/17/2013 2:06 PM         PCS Axis SysAdmin@mypipeline.com         My Email Notification Report_1 12 17 2013.pdf         John Smith         Message         The Smith         PCS Axis Email Notification. See attached file for event log.         My Email Notification. See attached file for event log.         My Email Notification Report_112 17 2013.pdf         My Email Notification. See attached file for event log.         My Email Notification Report_112 17 2013.pdf         Itals records.	Ignore X Junk * Delete	Reply Reply Forward The More	To Manager	- Move OneNote	Assign Categorize *	and and a second secon	Zoom
PCS Axis SysAdmin@mypipeline.com         yehn Smith         Message         The Smith         VCS Axis Email Notification Report_1 12 17 2013.pdf (133 KB)         VCS Axis Email Notification. See attached file for event log.         My Email Notification Report_1 12 17 2013.pdf (133 KB)	Delete	Respond	Quick Steps	G Move	Tags 5	Editing	Zoom
CS Axis Email Notification. See attached file for event log. My Email Notification Report_1 12 17 2013.pdf 1113 records.							
CS Axis Email Notification. See attached file for event log. My Email Notification Report_1 12 17 2013.pdf 1113 records.		My Email Notification Report 112	17 2013.pdf (133 KB)				
My Email Notification Report_1 12 17 2013.pdf 1118 records.							
My Email Notification Report_1 12 17 2013.pdf 1118 records.							
1118 records.	CS Axis Email N	Notification. See attached file f	for event log.				
1118 records.	My Email Noti	ification Report 112172013 n	df				
Generated on 12/17/2013 2:05:29 PM.			ui				
	1118 records.						

Figure 12-15. Example of Email Notification

### Stopping Delivery of Email Notifications

Complete step 1 to stop sending scheduled email notifications to *all* recipients, or step c for one or more recipients:

- **1** To stop sending scheduled email notifications *to all recipients*, follow these steps:
  - a Click Tools > Options to open the Options window.
  - **b** Click the **Email Notifications** tab to view property settings for *Email Notification* (Figure 12-16).

1	PCS Axis			_ 0	x
	ile Modules Data E	entry Reports/Graphs Tools Fi	eld Computer Help 🔅 PCS Axis	Welcome John Smith   🥹   🔀 Log	Out
	Options ×				
				🗎 Sa	ve
	•	General		A	
	All Bullhorn	Email Smtp Host Name	smtp.company.com	Public	
	Criteria	Email Smto User Name	user.name@mycompany.com	Public	
	Editing			Public	
	Email Notification	cinal sinds rassiona	Password		
	Field Computer General	Email From	user.name@mycompany.com	Public	
	Hierarchy	Email Enable Ssl	V	Public	
	Reports	Disable Email Service		Public	
	Security	Email Default Time	2:00 AM	Public	
	Synchronization	Email Log Retention In Days	180	Public	
		Email Max Attachment Size In Mb	10	Public	
				•	

Figure 12-16. Options / Email Notification

c Click the check box labeled **Disable Email Service** to place a check mark inside the check box. A check mark inside the check box indicates the service is disabled; scheduled email reports are no longer sent to recipients.

When you want to restart the service and begin sending scheduled email reports to recipients again, click the **Disable Email Service** check box to remove the check mark.

- **2** To stop sending scheduled email notifications to *one or more recipients*, follow these steps:
  - a Click Tools > Email Notification > Assignments tab. Then click
     Add/Remove Assignments to open the Email Notification Assignments window (Figure 12-17).
  - b Select how you want to view report assignments. Click By Recipient
     By Recipient to view report assignments by recipient or By Email Report
     By Email Report to view assignments by report.

Recipients	Email Reports	Assignments	Log		
By Recipient	By Email Report				
					🔛 Save and Close   💾 Save   🛞 Cancel   🔀 Cl
Search					
	1				
User Name	▲ First Name	Middle Initial	Last Name		
•	Andy		Johnson		
bob.brown	Bob		Brown		
george.abney	George		Abney		
jack.smith	Jack		Smith		
jane.arnold	Jane		Arnold		
joe.white	Joe		Brown		
john.smith	John		Smith		
					Row Count:
				Auf	
Available Email Repo				Assignments	
Available Email Repo My Email Report_3				My Email Report_1	
Andy Johns Available Email Report My Email Report_3 My Email Report_4				My Email Report_1 My Email Report_2	6
Available Email Repo My Email Report_3				My Email Report_1 My Email Report_2	ß
Available Email Repo My Email Report_3				My Email Report_1 My Email Report_2	lş
Available Email Repo My Email Report_3				My Email Report_1 My Email Report_2	R
Available Email Repo My Email Report_3				My Email Report_1 My Email Report_2	k
Available Email Repo My Email Report_3				My Email Report_1 My Email Report_2	l <sub>8</sub>

Figure 12-17. Email Notification Assignments By Recipient

- **c** If you are viewing report assignments *By Recipient*, complete the following steps:
  - **1)** Select a recipient name in the grid.
  - Double-click a report in the Assignments pane to move it to the Available Email Reports pane. Then click Save. The recipient receives email notifications only for those reports listed in the Assignments pane (Figure 12-17).

- **d** If you are viewing report assignments *By Email Report*, complete the following steps:
  - **1)** Select the name of an email report in the grid.
  - 2) Double-click a recipient name in the *Assignments* pane to move it to the *Available Recipients* pane. Then click **Save**. The email report is sent only to those recipients listed in the *Assignments* pane (Figure 12-18).

PCS Axis		
File Modules Data Entry Reports / Graphs Tools Field Computer Help	🔇 PCS	Axis Welcome John Smith   🖲   🔀 Log Out
Email Notification ×		
Recipients Email Reports Assignments Lo		
	'y	
By Recipient By Email Report		
		🛛 🔛 Save and Close 🛛 💾 Save 🛛 🛞 Cancel 🛛 🔀 Close
Search		
Name		
My Email Report_1		
My Email Report_2		
My Email Report_3		
My Email Report_4		
		Row Count: 4
My Email Report_1		
Available Recipients	_	signments
George Abney (george.abney) Jane Arnold (jane.arnold)		ndy Johnson ob Brown (bob.brown)
Joe Brown (joe.white)		ck Smith (lack smith)
John Smith (john.smith)	Juc	
	$(\mathbf{b})$	

Figure 12-18. Email Notification Assignments By Email Report

### Notes

# 13

# **Using Field Computer**

Information in this chapter explains how to use PCS Axis with the Allegro Field Computer to send and receive survey files. The information is intended for users with *SysAdmin*, *User*, and *Read Only* permissions unless noted otherwise. Topics in this chapter include those in the following list:

- Quick Start
- Working with Themes and Filter Groups (page 619)
- Viewing the Field Computer Log (page 647)

## **Quick Start**

The procedures listed below explain how to use PCS Axis with the Allegro to send and receive survey files. The process for sending a survey file to the Allegro requires selection of a prompt, layout, and sorting method themes. If themes have not previously been set up in PCS Axis, begin with the section *Working with Themes and Filter Groups* (page 619) and then continue with any of the following procedures for sending a survey file to the Allegro.

**Note:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

Topics in this section include those in the following list:

- Sending a Facility Survey Based on Selected ROWs (page 596)
- Sending a Facility Survey Based on a Route (page 601)

- Sending a Facility Survey Based on a Schedule (page 606)
- Sending a Facility Survey Based on an Import Exported List (page 611)
- Receiving a Facility Survey from the Allegro (page 613)
- Receiving a Continuous Survey from the Allegro (page 615)

#### Sending a Facility Survey Based on Selected ROWs

The following procedure explains how to send a facility survey based on selected ROWs to the Allegro or a folder on your computer. The survey file includes facilities for inspection based on selected pipeline segments in the *Select ROWs* window.

Use the following procedure when you plan to take inspection readings using the Periodic Survey software on the Allegro or you plan to use the survey file with a third party application such as RouteSmart<sup>®</sup>.

Complete the following steps:

- 1 Verify the Allegro is connected to your computer if you plan to send the survey file to the Allegro. If needed, refer to the *Allegro User Guide* for information about how to connect the device.
- 2 Click the Select ROWs button P to open the Select ROWs window (Figure 13-1). Click the check box for each pipeline segment with facilities you want to include in the survey file. Click Save to close the window.

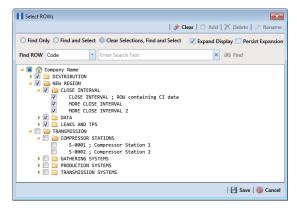


Figure 13-1. Select ROWs

3 Click Field Computer > Send to open the Field Computer Send window (Figure 13-2).

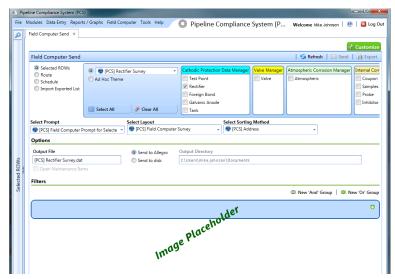


Figure 13-2. Field Computer Send

**NOTE:** Clicking the *Selected ROWs* bar collapses the *Selected ROWs* panel allowing you to view more of the grid. Clicking the *Selected ROWs* bar again expands the *Selected ROWs* panel.

- 4 Click the **Selected ROWs** option and then choose one or more facility types using one of the following options described in **step a**, **b**, or **c**:
  - a Click the down arrow and select a facility type theme in the selection list, such as **(PCS) Test Point Survey**.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

**b** Click **Ad Hoc Theme** and then click the check box for each facility type you want to view in the grid.

**Note:** An *Ad Hoc Theme* only applies to the current session and is not saved. A facility type is selected when a check mark appears inside the check box. To clear the check mark, click the check box again.

c Click the Select All button Select All to select all facility types.

- 5 Click 💾 Apply to update the grid.
- 6 Select a prompt, layout, and sorting theme as follows (Figure 7):
  - **a** Click the down arrow in **Select Prompt** and select a prompt theme in the selection list.
  - **b** Click the down arrow in **Select Layout Theme** and select a layout theme in the selection list.
  - **c** Click the down arrow in **Select Sort Theme** and select a sorting theme in the selection list.
- 7 If you want to work with a subset of facility records that meet *all* filter conditions, create an AND filter group using the following steps:
  - a Click the **Filters** button to open the *Filters* panel (Figure 8).

E PC	Avis	_ 0 💌
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🔗 😨 PCS Axis	Welcome John Smith 🛛 🔨 🛛 🛛 Log Out
Q	Field Computer Send 🗙	
		≁ Customize
	Field Computer Send	Apply Send Export
	V () It appears that you have some invalid options, please correct the following (1)	10 101- 10 1
	Image: Selected ROWs     Image: PCS3 Rectifier Survey     ▼     CPDM     VM     ACM     ICM       Image: Schedule     Image: Athen Select All     Image: Athen Select All     Test Point = Foring Bond _ Tank     VM     Atmospheric     Coupon = Probe       Image: Athen Select All     Image: Athen Select All	LSM Leak Survey
	🔢 View	
	Select Prompt Select Layout Theme Select Sort Theme	
	😵 [PCS] Field Computer Prompt 🔹 😵 [PCS] Field Computer Survey 🔹 😵 [PCS] ROW Code and Milepost	*
Selected ROWs	Options	
Å Å	Output File	
scle	Rectifier.dat Select a file location ····	
Sele	Open Maintenance Items	
	Riters	
		D New 'And' Group   🔘 New 'Or' Group
		0
	Currently Active Facilities Only Currently Inactive Facilities and Facilities on Currently Inactive ROWs Relative Milepott is between	

Figure 13-3. Filters

**b** Click **G** Add to open the filter properties group box.

	Axis Modules Data Entry Reports/Graphs Tools Field Computer Help 👔 PCS Axis 🛛 👾	me John Smith   🕑   🔀 Log C
L.	Field Computer Send ×	
		📌 Customize
	Field Computer Send	Apply Send Export
	∇ (i) It appears that you have some invalid options, please correct the following (2)	
	Image: Sected ROWs     Image: PCS3 Rectifier Survey     Image: PCS3 Rectifier	ijector
	😳 View	6
	Select Prompt Select Layout Theme Select Sort Theme	
	😨 [PCS] Field Computer Prompt 🔹 😵 [PCS] Field Computer Survey 🔹 🚭 [PCS] ROW Code and Milepost	*
8	③ Options	
2:	Output File Send to Allegro Output Directory	
	Rectifier.dat O Send to disk Select a file location ···	
	Open Maintenance Rems	
1	r Filters	
		💿 New 'And' Group 🛛 🚳
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Figure 13-4. New 'And' Filter

- **c** Set up filter criteria. Select a PCS Axis field, operator, and filter condition(s) using filter selection fields.
- d If you want to set up an additional filter, click Add to add another row of filter selection fields. Select a PCS Axis field, operator, and filter condition(s) to set up filter criteria. Repeat this step as needed. When you finish, click the Filters button to close the *Filters* panel.
- 8 If you want to rename the survey file, type a name in the field **Output File**.
- **9** Choose a *Send to* option using one of the following methods:
  - **a** Select **Send to Allegro** if you plan to send the survey file to the Allegro.
  - **b** Select **Send to disk** if you plan to send the survey file to a folder on your computer. Identify the folder location as follows:
    - 1) Click the ellipsis button ... in the **Output Directory** field to open the *Browse For Folder* dialog box.
    - 2) Navigate to the folder and select it. Click **OK** to close the dialog box and return to the *Field Computer Send* window.
- **10** If the check box **Open Maintenance Items** is available for selection, click the check box if you want to include open maintenance records in the survey file (Figure 8, page 599).

**NOTE:** When the selected prompt theme includes maintenance prompts, the check box *Open Maintenance Items* is available for selection. It is disabled and unavailable for selection when maintenance prompts are not included in the currently selected prompt theme.

- **11** Click **H Apply** to update the grid.
- 12 Click Send. Based on your selection earlier, the survey file is sent either to the Allegro or a folder on your computer.
- **13** When a message displays confirming the send process is complete, click **V OK** to close the message (Figure 13-5).

If you selected to send the survey file to the Allegro, PCS Axis sends the survey file to the *PSData* folder on the Allegro.

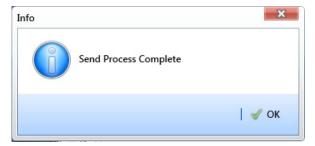


Figure 13-5. Send Process Complete

#### Sending a Facility Survey Based on a Route

The procedure in this section explains how to send a facility survey based on a route to the Allegro or a folder on your computer. The information assumes a route has previously been set up in Define Routes (*Data Entry > Define Routes*, see page 381).

Use the following procedure when you plan to take inspection readings using the Periodic Survey software on the Allegro or you plan to use the survey file with a third party software such as RouteSmart<sup>®</sup>.

Complete the following steps:

- 1 Verify the Allegro is connected to your computer if you plan to send the survey file to the Allegro. If needed, refer to the *Allegro User Guide* for information about how to connect the device.
- 2 Select one or more pipeline segments in the *Select ROWs* window (Figure 13-6). Click **Save** to close the window.

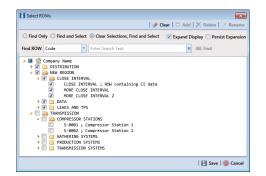


Figure 13-6. Select ROWs

- 3 Click Field Computer > Send to open the Field Computer Send window.
- 4 Click the **Route** option and then select a route in the selection box. The following figure shows *My Route\_2* has been selected (Figure 13-7).

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Open Maintenance Items		<ul> <li>Send to disk</li> </ul>	Select a file location		
V Filters					

Figure 13-7. Field Computer Send

- 5 Click 💾 Apply to update the grid.
- 6 Select a prompt, layout, and sorting theme as follows (Figure 13-7, page 602):
  - **a** Click the down arrow in **Select Prompt** and select a prompt theme in the selection list.
  - **b** Click the down arrow in **Select Layout Theme** and select a layout theme in the selection list.
  - c Click the down arrow in **Select Sort Theme** and select a sorting theme in the selection list.
- 7 If you want to rename the survey file, type a name in the field **Output File**.
- 8 Choose a Send to option using one of the following methods:
  - a Select Send to Allegro if you plan to send the survey file to the Allegro.
  - **b** Select **Send to disk** if you plan to send the survey file to a folder on your computer. Identify the folder location as follows:
    - Click the ellipsis button ... in the **Output Directory** field to open the *Browse For Folder* dialog box.
    - Navigate to the folder and select it. Click **OK** to close the dialog box and return to the *Field Computer Send* window.
- **9** If the check box **Open Maintenance Items** is available for selection, click the check box if you want to include open maintenance records in the survey file.

**NOTE:** When the selected prompt theme includes maintenance prompts, the check box *Open Maintenance Items* is available for selection. It is disabled and unavailable for selection when maintenance prompts are not included in the currently selected prompt theme.

**10** Click **H Apply** to update the grid.

**11** If you want to filter records in the grid and in the route sent to the Allegro, complete the following steps.

**IMPORTANT:** Filter settings in *Field Computer Send* apply only to the current session and are not saved. See *Working with Themes and Filter Groups* (page 619) for information about saving filter settings.

- a Click the **Filters** tab to open the *Filters* panel (Figure 13-7, page 602).
- **b** Select one or more options in *Filters* and then click **Apply**. For example, click **Active Facilities Only** to only include active facilities in the grid and in the route sent to the Allegro (Figure 13-8).

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Figure 13-8. Filters

- **c** If you want to add a new AND or OR filter group, continue with one of the following steps. Otherwise continue with **step 14** (page 606).
  - To add a new AND filter group continue with step 12 (page 604).
  - To add a new OR filter group continue with **step 13** (page 605).

- **12** If you want to add a new AND filter group, complete the following steps. With an AND filter group, PCS Axis includes a subset of records that meet *all* filter conditions defined for the filter group. Records are filtered in the grid and in the route sent to the Allegro.
  - a Click () New 'And' Group to open the filter properties group box. (Figure 13-9).

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Figure 13-9. New 'And' Filter Group

**b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.
- To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.

**NOTE:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required settings.

**13** If you want to add a new OR filter group, complete the following steps. With an OR filter group, PCS Axis includes a subset of records that meet *any* filter condition defined for the filter group. Records are filtered in the grid and in the route sent to the Allegro:

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**a** Click **(())** New 'Or' Group to open a filter properties group box Figure 13-10).

Figure 13-10. New 'Or' Filter Group

**b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.
- To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.

**Note:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required settings.

- 14 Click the Apply to update the grid.
- **15** Click **Send**. Based on your selection earlier, the survey file is sent either to the Allegro or a folder on your computer.
- **16** Click **V OK** when the message *Send Process Complete* displays (Figure 13-11). If you selected to send the survey file to the Allegro, the survey file transfers to the *PSData* folder on the Allegro.

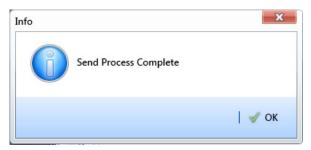


Figure 13-11. Send Process Complete

#### Sending a Facility Survey Based on a Schedule

The procedure in this section explains how to send a facility survey based on a schedule to the Allegro or a folder on your computer. The survey file includes facilities for inspection based on a schedule definition and schedule date range.

Use the procedure in this section when you plan to take inspection readings using the Periodic Survey software on the Allegro or you plan to use the survey file with a third party software such as RouteSmart.

The following procedure assumes scheduling criteria has previously been set up in *Edit Schedule Settings* (page 455) and a schedule definition created in *Define Schedules* (page 482).

Complete the following steps:

- 1 Verify the Allegro is connected to your computer if you plan to send the survey file to the Allegro. If needed, refer to the *Allegro User Guide* for information about how to connect the device.
- 2 Select one or more pipeline segments in the *Select ROWs* window (Figure 13-12). Click **Save** to close the window.

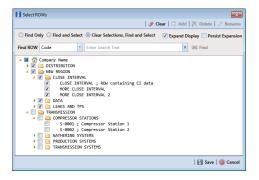


Figure 13-12. Select ROWs

- **3** Click **Field Computer** > **Send** to open the *Field Computer Send* window (Figure 13-13, page 607).
- 4 Click the **Schedule** option (Figure 13-13). Then click the down arrow in the field **Select Schedule Definition** and select a schedule definition in the list.

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Figure 13-13. Field Computer Send Schedule

**Note:** Clicking the  $\nabla$  toggle button in the (i) information bar displays important information related to required settings.

Complete **step 5** or **step 6** to set a schedule date range:

5 To set a schedule date range, type a date in the Start Date field and a date in the End Date field using the format M/DD/YYYY to indicate the month, day, and year. Then continue with step 7 (page 608).

- 6 To set a schedule date range using dynamic dates, follow these steps:
  - **a** Click the **Start Date** is calculator and set properties in the following manner:
    - Click the down arrow in the **Start Date** field and select one of the following options: *Today*, *Beginning Of Month*, *End Of Month*, *Beginning of Year*, or *End Of Year*.
    - In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the 
      pencil button to close dynamic start date fields.
  - **b** Click the **End Date** a calculator and set properties in the following manner:
    - Click the down arrow in the **End Date** field and select one of the following options: *Today*, *Beginning Of Month*, *End Of Month*, *Beginning of Year*, or *End Of Year*.
    - In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the 
      pencil button to close dynamic end date fields.
- 7 Click 💾 Apply to update the grid.
- 8 If the option **Calculate X/Y% years based on selected ROWs only** is available for selection, click the check box if you want due dates calculated based on your ROW selection instead of the *X years/y%* setting for facility types in *Edit Schedule Settings*.

**NOTE:** X/Y due dates refer to inspections older than X years with a minimum of Y percent scheduled for inspection. For more information, refer to Using a Schedule (page 453).

- **9** Select a prompt, layout, and sorting theme in the following manner:
  - **a** Click the down arrow in **Select Prompt** and select a prompt theme in the selection list.
  - **b** Click the down arrow in **Select Layout Theme** and select a layout theme in the selection list.
  - c Click the down arrow in **Select Sort Theme** and select a sorting method theme in the selection list.

- 10 Click Oldest First or Newest First in Sort Dates to sort records with the oldest or newest dates first.
- **11** If you want to rename the survey file, type a name in the field **Output File**.
- 12 Choose a Send to option using one of the following methods:
  - **a** Select **Send to Allegro** if you plan to send the survey file to the Allegro.
  - **b** Select **Send to disk** if you plan to send the survey file to a folder on your computer. Identify the folder location as follows:
    - Click the ellipsis button ... in the **Output Directory** field to open the *Browse For Folder* dialog box.
    - Navigate to the folder and select it. Click **OK** to close the dialog box and return to the *Field Computer Send* window.
- **13** If the check box **Open Maintenance Items** is available for selection, click the check box if you want to include open maintenance records in the survey file.

**NOTE:** When the selected prompt theme includes maintenance prompts, the check box *Open Maintenance Items* is available for selection. It is disabled and unavailable for selection when maintenance prompts are not included in the currently selected prompt theme.

- **14** Click the **V Filters** button to open the *Filters* panel.
- **15** If you want to filter records in the grid and in the schedule sent to the Allegro, select one or more options in *Filters*. For example, click *Active Facilities Only* to only include active facilities.

**IMPORTANT:** Filter settings in *Field Computer Send* apply only to the current session and are not saved. See *Working with Themes and Filter Groups* (page 619) for information about saving filter settings.

If you want to add a new AND or OR filter group, continue with **step 16** or **step 17** (page 610).

- **16** To filter records in the grid and in the schedule sent to the Allegro based on a subset of records that meet *all* filter conditions, complete the following steps to add a new AND filter group:
  - a Click 🕦 New 'And' Group to open the filter properties group box.

**b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.
- To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **17** To filter records in the grid and in the schedule sent to the Allegro based on a subset of records that meet *any* filter condition, complete the following steps to add a new OR filter group:
  - a Click (() New 'Or" Group to open a filter properties group box.
  - **b** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

When adding a date filter, such as *Last Inspection Date Is Between*, set a date range using one of the following methods:

- Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.
- To set a date range using dynamic start and end dates, click the calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **18** Click the **Filters** button to close the *Filters* panel. Then click **H Apply** to update the grid.
- **19** Click **Send**. Based on your selection earlier, the survey file is sent either to the Allegro or a folder on your computer.
- **20** When a message displays confirming the send process is complete, click **V OK** to close the message (Figure 13-14). If you selected to send the survey file to the Allegro, PCS Axis sends the survey file to the *PSData* folder on the Allegro.

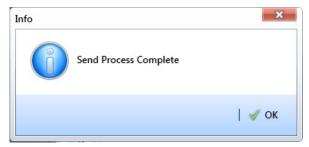


Figure 13-14. Send Process Complete

## Sending a Facility Survey Based on an Import Exported List

The following information applies to a survey file that has previously been set up, sent to disk, and then altered by a third party software such as RouteSmart<sup>®</sup>. Use the procedure in this section to import the survey file in PCS Axis and then send it to the Allegro.

Complete the following steps:

- 1 Verify the Allegro is connected to your computer. If needed, refer to the *Allegro User Guide* for information about how to connect the device.
- 2 Select one or more pipeline segments in the *Select ROWs* window. Click **Save** to close the window (Figure 13-1, page 596).
- 3 Click Field Computer > Send to open the Field Computer Send window.
- 4 Click the option Import Exported List.
- **5** Click the ellipsis button ... in the field **Import Exported List** to display the *Open* dialog box. Navigate to the altered survey file and select it. Click **Open** to close the dialog box and return to the *Field Computer Send* window.
- 6 Click the down arrow in **Select Prompt** and select a prompt theme in the selection list.
- 7 If you want to rename the survey file, type a name in the field **Output File**.
- 8 Click Send to Allegro if the option is not selected.

**9** If the check box **Open Maintenance Items** is available for selection, click the check box if you want to include open maintenance records in the survey file.

**NOTE:** When the selected prompt theme includes maintenance prompts, the check box *Open Maintenance Items* is available for selection. It is disabled and unavailable for selection when maintenance prompts are not included in the currently selected prompt theme.

- **10** If you want to work with a subset of facility records that meet *all* filter conditions, create an AND filter group using the following steps:
  - a Click the Filters button to open the *Filters* panel. Then click **C** Add to open the filter properties group box.
  - **b** Set up filter criteria. Select a PCS Axis field, operator, and filter condition(s) using filter selection fields.
  - **c** If you want to set up an additional filter, click **• Add** to add another row of filter selection fields. Select a PCS Axis field, operator, and filter condition(s) to set up filter criteria. Repeat this step as needed.
  - **d** Click the **A Filters** button to close the *Filters* panel.
- **11** Click **H Apply** to update the grid.
- 12 Click Send. When a message displays confirming the send process is complete, click OK to close the message (Figure 13-15).

If you selected to send the survey file to the Allegro, PCS Axis sends the survey file to the *PSData* folder on the Allegro.

Info		×
6	Send Process Complete	
		🖋 ок

Figure 13-15. Send Process Complete

# Receiving a Facility Survey from the Allegro

Complete the following steps to receive an *Allegro PS* periodic survey file in PCS Axis:

- **1** Verify the Allegro is connected to your computer. If needed, refer to the *Allegro User Guide* for information about how to connect the device.
- 2 Click Field Computer > Receive to open the *Field Computer Receive Data* window (Figure 13-16).

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File Modules Data Entry Reports / Graphs Tools Field Computer Help 🔅 PCS Axis Welcome John S	imith   🕑   🔀 Log Out
Field Computer Receive Data ×	
🔁 Retrie	eve File(s)   省 Import
Data Source	
Receive Facility Data        Allegro	
Receive Cis Data     Folder Choose Folder	
👻 🔲 All Facility Types dat	
V My Route_1.dat	
My Route_2.dat	
V My Route_3.dat	

Figure 13-16. Field Computer Receive

- 3 Click **Receive Facility Data**, then click the **Allegro** option.
- 4 Click **Retrieve File(s)** to view a list of periodic survey files available for selection.
- **5** Choose survey files you want to transfer from the Allegro. Click the check box for one or more survey files in the list of files available for selection (Figure 13-17).
- 6 Click the **T** toggle arrow for a selected survey file to view the following options for assigning Allegro survey data to a PCS Axis survey folder:
  - **a** Select **No Survey Assignments** if you do not want to assign Allegro survey data to a survey folder.

- **b** Select **Automatic Assignment** and then select one of the following options to have PCS Axis automatically assign Allegro survey data to a survey folder:
  - Assign Survey: Select this option if you want PCS Axis to automatically assign survey data to an annual or multi-year survey folder based on the inspection date of the Allegro survey data.
  - Assign Periodic Survey and Year: Select this option if you want PCS Axis to automatically assign survey data to a periodic survey folder based on the inspection date of the Allegro survey data.
- **c** Select **Manual Assignment** and then select one of the following options to manually select a survey folder for assigning Allegro survey data:
  - *Survey*: Select this option to choose an annual or multi-year survey folder for assigning Allegro survey data. Click the down arrow in the **Survey** field and select a survey in the selection list.
  - *Periodic Survey, Year*: Select this option to choose a periodic survey folder and the survey year for assigning Allegro survey data. Click the down arrow in the **Periodic Survey** field and select a periodic survey folder in the selection list. Then click the down arrow in the **Year** field and select the survey year.
- **d** Click **Apply to all selected files** if you want to apply the selected survey folder option to all selected survey files.

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File Modules Data Entry Reports / Graphs Tools Field Computer Help 🛛 🎲 PCS Axis	Welcome John Smith   🥹   🔀 Log Out
Field Computer Receive Data ×	
	🗁 Retrieve File(s)   🍘 Import
Data Source	
Receive Facility Data     Allegro	
Receive Cis Data     Folder     Choose Folder	
💌 🔲 All Facility Types.dat	
▼ ▼ My Route_1.dat	
My Route_2.dat	
How would you like surveys assigned to this Allegro data? No Survey Assignment Assign Survey Assign Survey Massign Revision: Survey Massign Revision: Survey	
Periodic Survey Year  Periodic Survey  Year  Apply to all selected files  V Vear  My Route_3.dat	
	×

Figure 13-17. Field Computer Receive Data

7 Click **Timport** to import selected survey file(s) in PCS Axis.

The *Field Computer Receive Status* window displays showing the status of the import process (Figure 13-18).

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ile Modules Data Entry	Reports / Graphs Tools Field Computer H	elp 🔅 PCS Axis	Welcome John Smith   🥹   🔀 Log (
Field Computer Receive Data	x		
			🚞 Retrieve File(s)   🍟 Impor
Data Source			
Receive Facility Data			
C Receive Cis Data	Folder     Choose Folder		
All Facility Types.	idat Field Computer Receive Status		
	Job Service Status Running		
▼ ■ My PS Survey 2	State	Import Files	
My PS Survey_3	Completed	My Route_1.dat	· 🔺
A W Route_1.da	Running Waiting	My Route_2.dat My Route_3.dat	
How would y			
No Surve;			
Automati			
Assig			
🗖 Assig			
O Manual A			
Periodic or	игуеу теаг		
	Apply to all selected files		
▼ V My Route_2.dat			
▼ V My Route_3.dat			
▼ ■ Mv TPsurvev 10o			

Figure 13-18. Field Computer Receive Status

## Receiving a Continuous Survey from the Allegro

Information in this section explains how to receive an *Allegro CeCi* close interval survey file in PCS Axis.

**IMPORTANT:** For data to transfer properly, the name of the pipeline entered in the *Segment* field of the Allegro CeCi survey file must match the *ROW Code* in PCS Axis. The survey name entered in the *Run* field of the CeCi survey file is used to create a survey folder in PCS Axis (*Data Entry > Survey Folder Maintenance*). See the *Allegro MX User Guide* for more information about setting properties in a CeCi survey file.

Complete the following steps:

- 1 Verify the Allegro is connected to your computer. If needed, refer to the *Allegro User Guide* for information about how to connect the device.
- 2 Click Field Computer > Receive to open the Field Computer Receive Data window.

3 Click **Receive Cis Data**, then click the **Allegro** option.

**NOTE:** *CIS* is an acronym for Close Interval Survey.

- 4 Click **Retrieve File(s)** to view a list of survey files available for selection (Figure 13-19).
- **5** Select the close interval (CI) survey files you want to transfer from the Allegro. Click the check box for one or more survey files listed in the *Field Computer Receive Data* window.

A check mark inside a check box indicates a selection. To remove a selection, clear the check mark by clicking the check box again.

PCS Axis			
	oorts/Graphs Tools Field Computer Help	🔇 PCS Axis	Welcome John Smith   🥹   🔀 Log Out
Field Computer Receive Data ×			
			🗁 Retrieve File(s)   🍟 Import
Data Source			
🔘 Receive Facility Data 🍥 A	Allegro		
Receive Cis Data	Folder Choose Folder	***	
✓ LG123-F Nov2014 CLS.sv LG543-A CL native march201 LG543-A CL on emrch2013 LG543-A CL on eff march20 LG543-F CLS April2013.ovy	2013.svy 3.svy 2013.svy		

Figure 13-19. Field Computer Receive

- 6 Click **\* Import** to open the *Mark Native* dialog box (Figure 13-20).
- 7 If you are importing a survey file with native survey data, click the **Native** check box to place a check mark inside the check box.

	Surveys can be modified by associating any unmatched ROW to an existing ROW. Additionally, the Survey Date, Survey Folder Name, and Survey Folder Series (if defined) can be set.									
			les represent a 'N g into the Native F		' survey p	lease mark then	n as such before continuing. This will pl	ace		
	Native		Row	Pipe	Series	Surveyor	File Name			
		ð	🜞LG123-F			jsmith	LG123-F Nov2014 CIS.svy	ŀ		
•	V	1	🖋 LG123-A			jsmith	LG543-A CI native march2013.svy			
								Ē		
	Row Count: 2									

Figure 13-20. Mark Native

- **8** If you want to associate one or more existing pipeline *Series* with the survey, complete the following steps:
  - a Click the *P* pencil button in the *Mark Native* dialog box to open the *Select Facility* dialog box (Figure 13-21).
  - **b** Click the **Row** field and select a pipeline segment in the selection list that you want to associate with the survey.
  - **c** Click the **Series** field and select a pipeline *Series* in the selection list that you want to associate with the survey.

Edit Survey	Information
Row	LG123-A
Series	My Series_1
Survey Date	11/12/2014
Survey Name	LG123-F CIS Nov2014
Surveyor	john.smith
	OK Cancel

Figure 13-21. Select Facility

- **d** If you want to change the date the survey was taken, click the down arrow in the **Survey Date** field and choose a survey date using a calendar. You can also type a survey date in the field using the format MM/DD/YYYY to indicate the month, day, and year.
- e If you want to change the name of the survey file, type a survey name in the **Survey Name** field.
- **f** If you want to change the name of the person who took the survey, type a name in the **Surveyor** field.
- **g** Click **OK** to close the *Select Facility* dialog box. Updated information displays in the *Survey Information* dialog box.
- h Click OK to close the *Mark Native* dialog box and import the survey file.

The *Field Computer Receive Status* window displays showing the status of the import process (Figure 13-22).

**NOTE:** Survey data imported from the Allegro is indicated in the *Edit ISM Data* grid with information in the *Allegro Survey Information* field.

PCS Axis			
File Modules Data Entry	Reports / Graphs Tools Field Computer	Help 🔅 PCS Axis	Welcome John Smith   🥹   🔀 Log O
Field Computer Receive Data	a X		
			淕 Retrieve File(s)   길 Import
Data Source			
Receive Facility Data	L Allegro		
Receive Cis Data	Folder Choose Folder		
✓ LG123-F Nov2014 C ✓ LG543-A CI native	CIS.svy		
LG543-A CI on marc			
LG543-B AC survey :	700 Service Status Running		
LG543-F CIS April20:	State  Running	Import Files LG123-F Nov2014 CIS.svy	
	Waiting	LG543-A CI native march2013.svy	
			•
-	<u>.</u>		

Figure 13-22. Field Computer Receive Status

# Working with Themes and Filter Groups

A theme is a group of named settings saved for later use, such as a grid layout or sort theme. Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

Several installed themes are provided with the PCS Axis software installation. PCS Axis installed themes are public themes available to all PCS Axis users. These themes are identified with a globe icon and PCS in brackets [PCS], such as **(PCS) Facility ID**.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

A filter group is a named set of one or more filters that affect the data output in the grid of *Field Computer Send* grid and subsequently the file sent to the Allegro. PCS Axis provides two types of filter groups you can define. These include the AND and OR filter groups.

When you add a filter group, you define filter conditions that determine which records to include or exclude. Adding an AND filter group produces a subset of records that meet *all* filter conditions. Adding an OR filter group produces a subset of records that meet *any* filter condition. When you apply a filter group, PCS Axis processes filters in descending order beginning with the filter at the top of the group.

The following sections describe how to add a layout theme, sort theme, and one or more optional filter groups. Topics include those in the following list:

- Adding a Layout Theme
- Adding a Prompt Theme (page 626)
- Adding a Sort Theme (page 635)
- Adding an AND Filter Group (page 639)
- Adding an OR Filter Group (page 642)
- Editing and Arranging Filters and Filter Groups (page 644)

#### Adding a Layout Theme

A layout theme is a group of fields in a grid layout. Adding a new layout theme allows you to choose which fields you want to include in the grid and then save the layout as a theme for later use. The following procedure applies to the grid layout in *Field Computer Send*.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 13-23).
 Click Save to close the window.

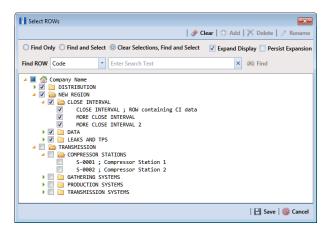


Figure 13-23. Select ROWs

2 Click **Field Computer** > **Send** to open the *Field Computer Send* window (Figure 13-24).

File	Modules Data Entry Reports / Graphs Too Field Computer Send ×	ils Field Computer Help	😯 PCS Axis	Welcome John	Smith   🕑   🔀 Log Ou				
				100	🕈 Customize				
	Field Computer Send			💾 Apply	🖂 Send 🛛 🖪 Export				
	It appears that you have some invalid op	tions, please correct the followi	ng (1)						
	Selected ROWs	i] All Facility Types	CPDM	VM ACM ICM	LSM				
	U 🕑 Route		✓ Test Point ✓ Foreign Bond ✓ Tank	✓ Valve ✓ Atmospheric ✓ Coupon ✓ Probe	Leak Survey				
	C Ad Hoc I     Schedule     Provide List		Rectifier Galvanic Anode	🔽 Samples 🗸 Inhibitor Inje	ctor				
Š.	🔝 View								
21	Select Prompt		ayout Theme	Select Sort Theme					
Selected ROWs	(PCS) Field Computer Prompt	• 🐨 (PCS	] Field Computer Survey	<ul> <li>PCS] ROW Code and Milepost</li> </ul>	•				
Be	Options								
Š	Output File	Send to Allegro	Output Directory						
	All Facility Types.dat	Send to disk	Select a file location						
	Open Maintenance Items								
	V Filters								

Figure 13-24. Field Computer Send

Complete **step 3** (based on selected ROWs), **step 4** (based on a route), **step 5** (based on a schedule), or **step 6** (based on import exported list) to choose an option for displaying facility records in the grid:

- **3** To view facility records based on pipeline segment(s) selected in the *Select ROWs* window, follow these steps:
  - a Click the **Selected ROWs** option (Figure 13-25).

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		ld Computer Send							💾 Apply   🖂 Send   📑	Export
	_	Based On								
		Selected ROWs	() (PCS) Test	Point Survey	•	CPI	DM	VM ACM	ICM LSM	
		Schedule	O Ad Hoc Theme		✓ Ter	st Point 📃 For			Probe 📃 Leak Surv	ey
		Import Exported List	Select All	🤣 Clear All	C Re	ctifier 📃 Gab	vanic Anode	Samples	s 🔲 Inhibitor Injector	
	88	View								
	Se	lect Prompt		Se	lect Layout Th	eme		Select Sort Theme		
	•	[PCS] Field Computer Pr	ompt for Selected	ROW 🔽 🤜	[PCS] Field Co	omputer Survey	(	💌 👽 [PCS] ROW Code and Mile	post 💌	
	٢	Options								
	0	utput File		Send to Allege	Send to Allegro     Output Directory					
	1	est Point Survey.dat		Send to disk	Send to disk C:\Users\donna.russell\Documents					
ş		Open Maintenance Iten	ns							
Selected ROWs 	$\sim$	🍸 Filters								
fed		ROW Code and Pipe	Milepost	Relative Milepost	Facility ID	Address	Location Descriptio	n		
elec	1	LG123-A	0+00	0+00			LG123A-00			
Š	2	LG123-A	0+10	0+10			LG123A-10			
	3	LG123-A	0+20	0+20			LG123A-20			
	4	LG123-A	0+30	0+30			LG123A-30			
	5	LG123-A	0+40	0+40			LG123A-40			
	6	LG123-A	0+50	0+50			LG123A-50			
	7	LG123-A	0+60	0+60			LG123A-60			- 1
	1									_

Figure 13-25. Field Computer Send Based on Selected ROWs

- **b** Choose one or more facility types using one of the following options ():
  - Click the down arrow and select a facility type theme in the selection list, such as [PCS] Rectifier Survey.
  - Click **Ad Hoc Theme** and then click the check box for each facility type you want to view in the grid.
  - Click the **Select All** button Select All to view all facility types in the grid.
- c Click 💾 Apply to update the grid and then continue with step b (page 623).
- 4 To view facility records based on a route:
  - **a** Click the **Route** option and then select a route in the selection box (Figure 13-26, page 622).
  - **b** Click **Apply** to update the grid and then continue with **step b** (page 623).

PCS Axis File Modules Data Entry Report:	s / Graphs Tools	Field Computer Help	PCS Axis			Welcome John Smith   🕑   🔀 Log Out	
Q Field Computer Send ×							
Field Computer Send						Customize	
∇ (i) It appears that you have	e some invalid optic	ons, please correct the followi	ng (1)				
Getected ROWs     Getecte	MyRoute11 MyRoute924 Route_215 Route 216						
🔢 View							
Select Prompt			yout Theme		Select Sort Theme		
[PCS] Field Computer Prov	npt	- 😵 (PCS	] Field Computer Survey		<ul> <li>PCS] Route Order</li> </ul>		
Options							
S Output File		Send to Allegro     Output Directory					
Route626.dat		Send to disk	Select a file location				
Open Maintenance Items							
Output File Route626.dat Open Maintenance Items							
о 1							
						•	

Figure 13-26. Field Computer Send Based on Route

- **5** To view facility records based on a schedule, follow these steps:
  - a Click the Schedule option (Figure 13-27). Then click the down arrow in the Select Schedule Definition field, and choose a schedule definition in the selection list.

_	ules Data Entry Rep	orts / Graphs Tools	Field Computer He	🗠 🔇 PCS A	xis			Welcome John Smith   🔨   🔀 Lo				
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_	Field Computer Send I 🖸 Apply [ 🖸 Send ] 🔒											
								📔 Apply 🛛 Send 🗎 📄 Expo				
_	Based On     Selected ROWs Salart Schadula Dativition Short Data End Data											
	Selected ROWs	Select Schedule Defini			Start Dat							
	Schedule	My Schedule Definition_2										
	Import Exported List	Calculate X/Y% yea	rs based on selected P	OWs only.								
3 View												
Sel	ect Prompt			t Layout Theme			lect Sort Theme	Sort Dates				
۲	[PCS] Field Computer P	rompt for Schedule	- 😵 [	PCS] Field Computer Su	irvey	- 🐨	[PCS] Due Date from Schedule ROW Coo	le and Milepost 🚽 💿 Oldest First 🔵 Newest F				
(3)	(c) Options											
0	utput File		Send to Allegro	Output Directory	Output Directory							
My Schedule Definition_2.dat O Send to disk				C:\Users\donna.	C:\Users\donna.russell\Documents ···							
	Open Maintenance Items											
$\sim$	🖉 🍞 Filters											
	Due Date from Schee	ROW Code and Pipe	Milepost	Relative Milepost	Facility ID	Address	Location Description					
1	1/1/2014	LG123-A	0+00	0+00			LG123A-00					
2	1/1/2014	LG123-A	0+10	0+10			LG123A-10					
3	1/1/2014	LG123-A	0+20	0+20			LG123A-20					
4	1/1/2014	LG123-A	0+30	0+30			LG123A-30					
5	1/1/2014	LG123-A	0+40	0+40			LG123A-40					
6	1/1/2014	LG123-A	0+50	0+50			LG123A-50					
7	1/1/2014	LG123-A	0+60	0+60			LG123A-60					
8	1/1/2014	LG123-A	3+00	3+00	R-212		Mead Station					
9	1/1/2014	LG123-A	10+25	10+25	R-231		FM 2422					
10	1/1/2014	LG123-A	22+10	22+10	R-243		Co Line Rd					
		LG123-A	35+34	35+34	R-527		Co Rd Pipe Tie in					
11	1/1/2014											

Figure 13-27. Field Computer Send Based on Schedule

Complete step **step b** to enter a schedule date range or **step c** (page 623) to set a schedule date range using dynamic dates:

**b** Type a start date in the **Start Date** field and an end date in the **End Date** field.

- **c** To set a schedule date range using dynamic start and end dates, follow these steps:
  - 1) Click the **Start Date** aclculator to open dynamic start date fields. Set properties in these fields in the following manner:
    - i) Click the down arrow in the **Start Date** field and select one of the following options: *Today*, *Beginning Of Month*, *End Of Month*, *Beginning of Year*, or *End Of Year*.
    - ii) In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: *Day(s)*, *Month(s)*, or *Year(s)*. Click the *P* pencil button to close dynamic start date fields.
  - 2) Click the **End Date** aclculator to open dynamic end date fields. Set properties in these fields in the following manner:
    - i) Click the down arrow in the **End Date** field and select one of the following options: *Beginning Of Month, End Of Month, Beginning of Year*, or *End Of Year*.
    - ii) In the remaining two fields, type an offset value in the first field and then click the down arrow in the second field and select one of the following options: Day(s), Month(s), or Year(s). Click the *P* pencil button to close dynamic end date fields.
  - Click Apply to update the grid and then continue with step b (page 623).
- **6** To view facility records based on an import exported list file, follow these steps:
  - **a** Click the **Import Exported List** option (Figure 13-28).

	# Curs           Field Computer Send           Image: Apply   ⊡ Send   Image: Apply   □ Send   Ima											
- [	<ul> <li>Based On</li> </ul>							1 6 1999 1 6	orne i 🖓 este			
Calendard POWe					CPD							
	O Route		st Point Survey				Valve Atmospheric	ICM Coupon Probe	LSM Leak Survey			
	O Schedule	Ad Hoc Then Select All	🛷 Clear All			anic Anode	valver [] Aunospheric	Samples Inhibitor Injector	Leak Survey			
	Import Exported List	Select All	Clear All									
🔯 View												
	Select Prompt			lect Layout T			Select Sort Theme					
	(PCS) Field Computer I	rompt for Selecter	irow 💌 🧟	[PCS] Field	Computer Survey		<ul> <li>PCS] ROW Co</li> </ul>	de and Milepost	Ψ.			
	Options											
I	Output File		Send to Alleg	o Outo	ut Directory							
I	Test Point Survey.dat		Send to disk	isk C:\Users\donna.russell\Documents								
Open Maintenance Items												
V Y Filters												
	ROW Code and Pipe	Milepost	Relative Milepost	Facility ID	Address	Location Description						
1	1 LG123-A	0+00	0+00			LG123A-00						
	2 LG123-A	0+10	0+10			LG123A-10						
		0+20	0+20			LG123A-20						
	3 LG123-A		0+30			LG123A-30						
	3 LG123-A 4 LG123-A	0+30	0+30									
		0+30	0+30			LG123A-40						
	4 LG123-A					LG123A-40 LG123A-50						

Figure 13-28. Field Computer Send Based on Exported List

- Click the ellipsis button ... in the field to display the Open dialog box.
   Navigate to the file and select it. Click **Open** to close the dialog box and return to the *Field Computer Send* window.
- c Click 💾 Apply to update the grid and then continue with step b (page 623).
- 7 Click the **Customize** tab **Customize** then the **Add** button to open the New Layout Theme dialog box (Figure 13-29).

Enter Theme Name:		
My Layout Theme_1		
Public V Copy Content		
Copy Fields From Theme:		
😡 [PCS] Field Computer Surv	ey	-
Fields in the Selected Theme:		
ROW Code and Pipe		-
Milepost Relative Milepost		
Facility ID		
Address		
location Description		
		_

Figure 13-29. New Layout Theme

8 Type a name for the layout theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

- 9 If you want to copy fields from another theme to the new layout theme, click the check box Copy Content. Then click the down arrow in the field Copy Fields
   From Theme and select a theme in the selection list.
- **10** Click **V OK** to save changes and return to the *Layouts* page.
- **11** Verify the name of the new layout theme displays in the field *Select Layout Theme*. If not, click the down arrow in **Select Layout Theme** and select the new theme in the selection list.
- **12** Complete the following steps to add and remove fields in the new layout theme as needed:
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ Facility Fields.
  - **b** Double-click a field listed in the left pane to move it to the right pane. Repeat this step as needed. The grid layout theme includes all fields listed in the right pane of the *Layouts* page.
  - **c** To remove a field in the layout theme, double-click a field listed in the right pane to move it to the left pane. Repeat this step as needed.
- 13 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( or down button.
- **14** Click **P** Save and Close to return to the *Field Computer Send* window.
- 15 To apply the new layout theme to the grid, click the down arrow in the fieldSelect Layout Theme and select the layout theme in the selection list. Then click Apply to update the grid.

#### Adding a Prompt Theme

A prompt theme is similar to a layout theme. It is a named set of fields that provide information and prompt the user for survey data when performing a survey using the Allegro.

Adding a prompt theme allows you to choose which fields to include in the survey file sent to the Allegro. The same prompt theme can include multiple facility types, such as test points, rectifiers, bonds, valves, and so on. Each facility type can also include up to eight pages of prompts. For example, you can include up to 8 pages of inspection prompts for entering facility inspection and maintenance readings.

When viewing the survey file on the Allegro, prompts display in either the top or bottom frame of the window. Information prompts display in the top frame while inspection and maintenance prompts display in the bottom frame. See the *Allegro User Guide* for more information about working with a survey file on the Allegro.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

To add a prompt theme, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 13-30).
 Click Save to close the window.

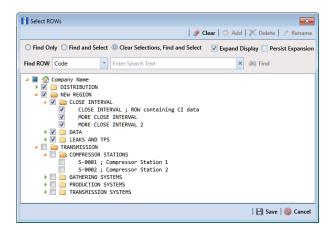


Figure 13-30. Select ROWs

- 2 Click Field Computer > Send to open the Field Computer Send window.
- 3 Click the **Customize** tab *F* Customize, then the **Prompts** button **Prompts** to open the *Prompts* page (Figure 13-31).

PCS	CS Axis		-	
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 😵 PCS Axis	Welcome Joi	hn Smith 🛛 😌 🛛	🔀 Log Out
2	Field Computer Send ×			
			÷ 0	ustomize
	Prompts: Field Computer Send   💾 Save and Close   🖽 Save   🗢 Add   🗡 Delete   🗠 Revert   🔅 New Base	eline 📔 🛞 Cancel	B Prompts	
	Select Prompt (1 2 3 4 5 6 7 8		E Layouts	
			Sorts	
	Select Facility Type Rectifier		Filters	
	Rectmer		Close	
	Facility, Information and ROW Fields		Close	
	Search For Field ×	Copy		
Selected ROWs	Bott Code and Pipe     Monoment Information Fields     Rectifier Facility Fields     Rectifier Information Fields			
	Inspection and Maintenance Fields			
	Search For Field ×	🕒 Сору		
	All Fields     A			

Figure 13-31. Prompts

**4** Click the **G** Add button to open the *New Prompt* dialog box (Figure 13-32).

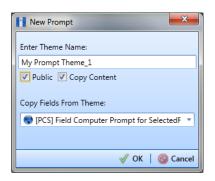


Figure 13-32. New Prompt

- **5** Type a name for the prompt theme in the field **Enter Theme Name**. Fields marked with **S** are required.
- **6** If you want create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the prompt theme saves as a *private* theme.
- 7 If you want to copy fields from an existing prompt theme, click the **Copy Content** check box to place a check mark inside the check box. Then click the down arrow in the field **Copy Fields From Theme** and select a theme in the selection list.

If you do not want to copy fields from an existing prompt theme, remove the check mark inside the *Copy Content* check box by clicking the check box.

8 Click **V** OK to save changes and return to the *Prompts* page.

- **9** Verify the name of the new theme displays in the **Select Prompt** field. If not, click the down arrow and select the theme in the selection list.
- **10** Click the down arrow in the field **Select Facility Type** and select the facility type you want to work with in the selection list.
- **11** To add information prompts, follow these steps:
  - **a** Double-click All Fields in *Facility, Information and ROW Fields* to view a list of fields available for selection.
  - **b** Double-click one or more fields in the selection list to move fields to the right pane. All fields listed in the right pane are included in the prompt theme.
- **12** To add inspection and maintenance prompts, follow these steps:
  - a Double-click **All Fields** in Inspection and Maintenance Field.
  - **b** Double-click one or more fields in the selection list to move fields to the right pane. All fields listed in the right pane are included in the prompt theme.
- **13** If you want to remove information, inspection, or maintenance prompts, doubleclick a field listed in the right pane to move it back to the left pane.
- **14** Complete the following steps to add site string prompts that help identify one facility from another when using the Allegro. Site string prompts are included with each facility and can be viewed in the Allegro *Site List* window.
  - a Click the Site String tab to view a list of fields available for selection (Figure 13-33).

11 PC	S Avis	
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🔗 PCS Axis Welcome J	ohn Smith   📵   🔀 Log Out
Q	Field Computer Send 🗴	
		📌 Customize
	🙆 Prompts: Field Computer Send 🛛 🛛 😰 Save and Close   🗄 Save   🔿 Add   🗡 Delete   🗠 Revert   🔅 New Baseline   🚳 Cancel	B Prompts
	Select Prompt (1 (2 (3) (4 (5) (6) (7) (8)	Eayouts
		₩ Sorts
	a My Ineme Sect Failing Type Pages ● 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Tilters
		Close
	Facility, Information and ROW Fields	Close
	Search For Field	
	Secret for Field. X Copy A Fields ROW Code and Pipe A Copy A Fields V Code and Pipe A Copy A Fields V Code and Pipe A Copy A Code and Pipe A C	
ş		
8	Inspection and Maintenance Fields	
Selected ROWs	Search For Field         X         ↓	
Sele	All Fields     Test Point Inspection Fields     Structure P/S     Casing P/S	
	Site String	
	Search For Field X ROW Code and Pipe	
	Ill Fields     Ill Fields	
	ROW Permanent Information Fields     Facility ID     Eracility Fields	
	$\odot$	

Figure 13-33. Site String

- b Double-click one or more fields in the selection list to move fields to the right pane. For example, double-click Address and Facility ID. Click the Site String tab again to close the pane.
- 15 If you want to add another page of prompts, click Copy and then double-click one or more fields as needed in the left pane of Inspection and Maintenance Fields.

Information fields in *Facility, Information, and ROW Fields* automatically copy to each page of prompts. The following example shows three pages of prompts (Figure 13-34).

PC:	S Axis	- 0 <b>X</b>
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 💮 PCS Axis Welcom	e John Smith   🕑   🔀 Log Out
Q	Field Computer Send 🗴	
		📌 Customize
	Prompts: Field Computer Send 🛛 🛛 😰 Save and Close   📑 Save   📀 Add   🗡 Delete   🗠 Revert   🔅 New Baseline   🚳 Cance	el 🔡 Prompts
	Select Prompt         1         2         3         4         5         6         7         8           Select Facility Type         Pages         9         3         4         5         6         7         8	E Layouts
	My Prompts Theme_1  Select Facility Type	🛚 Sorts
	Rectifier - (1 (2 (3) (4) (5) (6) (7) (8)	🍸 Filters
	Facility, Information and ROW Fields	🔀 Close
	Search For Field X	
	All Fields     ROW Permanent Information Fields     ROW Code and Pipe	$\Theta$
	Rectifier Facility Fields	
	Rectifier Information Fields     RFID	
Selected ROWs	Inspection and Maintenance Fields	
ed R	Search For Field X	
elect	Call Fields     Reference Number     Rectifier Inspection Fields     Reference Number     Rectifier Inspection Fields	$\Theta$
s	Rectifier Inspection Fields     Repair Corrected Date     Repair Initiated Date	$\mathbf{D}$
	► Site String	
	Search For Field ROW Code and Pipe	
	All Fields     Im Milepost     ROW Permanent Information Fields	
	Facility Fields     Facility ID	
	$\odot$	

Figure 13-34. Prompts

- **16** Click **Save and Close** to save changes and return to the *Field Computer Send* window.
- 17 To apply the new prompt theme to the grid, click the down arrow in the fieldSelect Prompt and select the theme in the selection list. Then click Apply to update the grid.

# Adding a Prompt Theme for Test Point Subfacilities

The following procedure explains how to add a prompt theme for subfacilities in the *Test Point Detail Inspection* mini-grid. A prompt theme is a named set of fields that provide information and prompt the user for survey data when performing a periodic or close interval survey using the Allegro Field Computer.

**Note:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

A subfacility is a field in the *Test Point Detail Inspection* mini-grid that links to a parent facility in the *Test Point Inspection* grid. The prompt theme includes ON/OFF fields for both the subfacility and corresponding parent test point facility. The following criteria must first be met when including subfacilities in prompts sent to the Allegro Field Computer:

- Subfacilities must be set up as Currently Active in the Test Point Detail Information mini-grid. (See CPDM > Data Entry > Edit CPDM Data > Test Point > Information > Test Point Detail Information mini-grid.)
- The parent facility of a subfacility must also be included in prompts sent to the Allegro. Parent facilities include any of the following ON/OFF field pairs: AC P/S and AC IRF; Casing P/S and Casing IRF; Foreign P/S and Foreign IRF; Insulator P/S and Insulator IRF; or Structure P/S and Structure IRF. (See the procedure in this section.)

**NOTE:** For information about how to link subfacilities to a parent facility, refer to *Linking Multiple Subfacilities to a Parent Test Point Facility* (page 335).

To add a prompt theme for subfacility fields in the *Test Point Detail Inspection* mini-grid, follow these steps:

1 Select one or more pipeline segments in the *Select ROWs* window (Figure 13-35). Click **Save** to close the window.

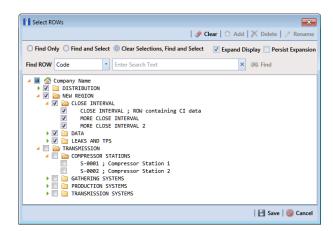


Figure 13-35. Select ROWs

- 2 Click Field Computer > Send to open the Field Computer Send window.
- 3 Click the **Customize** tab **Customize**, then the **Prompts** button **Prompts** to open the **Prompts** page (Figure 13-31, page 627).
- 4 Click the Add button to open the *New Prompt* dialog box (Figure 13-32, page 627).
- **5** Type a name for the prompt theme in the field **Enter Theme Name**. Fields marked with **O** are required.
- **6** If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the prompt theme saves as a *private* theme.
- 7 If you want to copy fields from an existing prompt theme, click the **Copy Content** check box to place a check mark inside the check box. Then click the down arrow in the field **Copy Fields From Theme** and select a theme in the selection list.

If you do not want to copy fields from an existing prompt theme, remove the check mark inside the *Copy Content* check box by clicking the check box.

- 8 Click **V** OK to save changes and return to the *Prompts* page.
- **9** Verify the name of the new theme displays in the **Select Prompt** field. If not, click the down arrow and select the theme in the selection list (Figure 13-36, page 633).

- **10** Click the down arrow in the field **Select Facility Type** and select **Test Point** in the selection list.
- **11** To add information prompts:
  - **a** Double-click > All Fields in *Facility, Information and ROW Fields* to view a list of fields available for selection.
  - **b** Double-click one or more fields in the selection list to move fields to the right pane. All fields listed in the right pane are included in the prompt theme.

If you want to remove information, inspection, or maintenance prompts, double-click a field listed in the right pane to move it back to the left pane

- **12** To add prompts for subfacilities and corresponding parent test point facilities:
  - a Double-click **Fest Point Detail Inspection Fields** in *Inspection and Maintenance Fields* to view a list of fields available for selection.
  - **b** Double-click the fields labeled **ON** and **OFF** to move these fields to the right pane (Figure 13-36, page 633).
  - **c** Double-click **Test Point Inspection Fields** in *Inspection and Maintenance Fields* to view a list of fields available for selection.
  - **d** For each subfacility you plan to survey, add ON and OFF prompts for the corresponding parent test point facility. Double-click the appropriate ON and OFF field to move these fields to the right pane.

For example, to include ON/OFF prompts for structure pipe-to-soil readings, double-click the fields *Structure P/S* and *Structure IRF*. This same method applies to any of the following test point facility field pairs: *Casing P/S* and *Casing IRF*; *Foreign P/S* and *Foreign IRF*; or *Insulator P/S* and *Insulator IRF*.

- **13** To add maintenance prompts:
  - a Double-click **Fest Point Maintenance Fields** in *Inspection and Maintenance Fields*.
  - **b** Double-click one or more fields in the selection list to move fields to the right pane.
- 14 Indicate how many new subfacility records should be created when a new test point facility record is added in the survey file using the Allegro Field Computer. Click the up/down arrow to select a value in the field labeled Test Point Detail Inspection Records. You can also type a value in this field.

**NOTE:** The user account of the person adding a new test point facility record on the Allegro Field Computer must be set up in PCS Axis with the option labeled *Can Create New Facilities On The Allegro* in *User Management* (Tools > User Management). For more information about setting up a PCS Axis user account, see *Setting Up User Management* (page 187).

15 Prompts display on the Allegro Field Computer according to how you organize the fields listed in the right pane. To change the field order, click and drag a field to a new position in the list. Or, select a field and then click the up < or down < button.</p>

Field Computer Send ×				📌 Custo
Prompts: Field Computer Send	e and Clo	se   💾 Save   📀 Add   🗡 Delete   🗠 Revert   🔅 New Baseline   🎯 C	ancel	Prompts
Select Prompt				E Layouts
Select Facility Type Test Point	•	Pages =		Sorts
Facility, Information and ROW Fields				Close
Search for Field    ROW Permanent Information Fields   ROW Permanent Information Fields	×	ROW Code and Pipe	<ul> <li>•</li> <li>•</li> </ul>	
Inspection and Maintenance Fields		4 Crest Point Detail Inspection Records	1	
Search For Field   All Fields   Test Point Detail Information Fields   Fest Point Detail Information Fields   Test Point Detail Information Fields   Test Point Maintenance Fields	× •	On Off Structure P/S Structure P/S Casing P/S Casing I/F Inspection Remarks Technician	•	

Figure 13-36. Test Point Detail Inspection Prompts

- **16** Complete the following steps to add site string prompts that help identify one facility from another when using the Allegro Field Computer. Site string prompts are included with each test point facility and can be viewed in the *Site List* window on the Allegro Field Computer.
  - **a** Click the **Site String** tab to open the *Site String* pane (Figure 13-37).
  - Double-click > All Fields to view a list of fields available for selection. Double-click one or more fields in the selection list to move fields to the right pane.
     For example, double-click Address and Facility ID.
  - c If you are using the optional Telluric Compensation feature in PCS Axis and want to identify which pipeline segments require telluric compensation, double-click the field **Telluric Compensation Currently Required** to move the field to the right pane.
    - PCS Axis C PCS Axis Welcome John Smith | 🕑 | 🔀 Log eld Computer Send 🗙 Prompts: Field Computer Send 🛛 🖶 Save and Close 🛛 🛃 Save 🛛 🔿 Add 🛛 🗙 Delete 🛛 🗠 Revert 🖉 Nev e | 🔕 Ca Prompt 12345678 E Layouts Ny ON/OFF Subfacility Prompt Theme\_1 \* Pages M Sorts Select Facility Type \* Test Point **Filters** 🔀 Close Facility, Information and ROW Fields Copy ROW Code and Pipe All Fields ROW Permanent Information Fields
       Test Point Facility Fields
       Test Point Information Fields Milepost Location Description ۲  $\odot$ 4 Crest Point Detail Inspection Records ection and Maintenance Fields All Fields
       Test Point st Point Inspection Fields Test Point Detail Information Fields Structure P/S Structure IRF Casing P/S Casing IRF  $\check{\bullet}$  $\overline{oldsymbol{\odot}}$ Inspection Remarks Techniciar Site String × City Address . Facility ID ∢  $\odot$
  - **d** Click the **A** Site String tab to close the pane.

Figure 13-37. Site String

17 If you want to add another page of prompts, click Copy and then double-click one or more fields as needed in the left pane of Inspection and Maintenance Fields.

Information fields in *Facility, Information, and ROW Fields* automatically copy to each page of prompts (Figure 13-34, page 629).

- **18** Click **Save and Close** to save changes and return to the *Field Computer Send* window.
- **19** To apply the new prompt theme to the grid in *Field Computer Send*, click the down arrow in the field **Select Prompt** and select the theme in the selection list. Then click Apply to update the grid.

**NOTE:** Prompts for subfacilities display in the second page of the survey file on the Allegro Field Computer.

If you are using the optional *Telluric Compensation* feature in PCS Axis, inspection readings for subfacilities received from the Allegro Field Computer display in the *Uncompensated On* and *Uncompensated Off* fields of the *Test Point Detail Inspection* mini-grid. For more information, refer to the section entitled Viewing Test Point Inspections Eligible for Compensation (page 674).

#### Adding a Sort Theme

A sorting theme determines how PCS Axis sorts grid records in the *Field Computer Send* window. Adding a sorting theme allows you to choose which field(s) to sort data by and if data sorts alphanumerically in ascending or descending order.

**NOTE:** Only public themes for layouts, sorts, and reports are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

To add a sorting theme, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 13-38).
 Click Save to close the window.

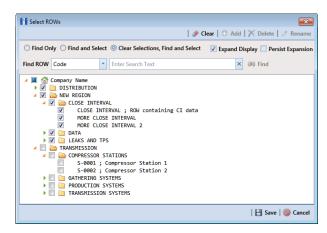


Figure 13-38. Select ROWs

- 2 Click Field Computer > Send to open the Field Computer Send window.
- 3 Choose a mode for displaying records in the grid by selecting the option **Select ROWs**, **Route**, or **Schedule**. Then click **Apply** to update the grid.
- 4 Click the **Customize** tab **Customize**, then the **Sorts** button **Sorts**
- 5 Click the G Add button to open the New Sort Layout dialog box (Figure 13-39).

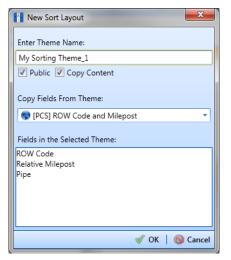


Figure 13-39. New Sort Layout

**6** Type a name for the sorting theme in the field **Enter Theme Name**. Fields marked with **S** are required.

- 7 If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the sorting theme saves as a *private* theme.
- 8 Select a sorting theme with fields you want to copy to the new theme. Click the down arrow in **Copy Fields From Theme** and select a sorting theme in the selection list.
- **9** Click **V** to save changes and return to the *Sorts* page (Figure 13-40, page 638).
- **10** Complete the following steps to add and remove fields in the new sorting theme:
  - a Click the toggle arrow **b** for a field category in the left pane of the window to view a list of fields available for selection. For example, click **b** Facility Fields.
  - **b** Double-click a field listed in the left pane to move it to the right pane. Repeat this step as needed. The sorting theme includes all fields listed in the right pane.
  - **c** If you want to remove a field in the sorting theme, double-click a field listed in the right pane to move it to the left pane. Repeat this step as needed.
- 11 Select a sorting method for each field listed in the right pane. To sort grid records in ascending order, click the toggle button to select ASC ASC. To sort in descending order, click the toggle button to select DESC DESC.
- 12 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up (<) or down (<) button.</p>

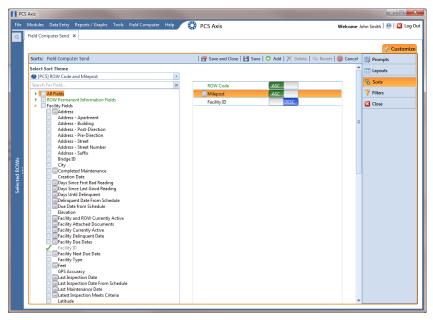


Figure 13-40. Sorts

- **13** Click **P** Save and Close to return to the *Field Computer Send* window.
- 14 To apply the new sorting theme to the grid, click the down arrow in the fieldSelect Sort Theme and select the sorting theme in the selection list. Then clickApply to update the grid.

# Adding an AND Filter Group

An AND filter group is a named set of one or more filters that affect the data output in the grid of *Field Computer Send* and subsequently the file sent to the Allegro. Adding an AND filter group produces a subset of records that meet *all* filter conditions. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an AND filter group, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 13-41).
 Click Save to close the window.

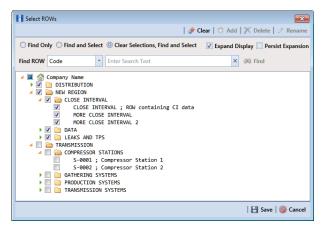


Figure 13-41. Select ROWs

- 2 Click Field Computer > Send to open the Field Computer Send window.
- 3 Choose a mode for displaying records in the grid by selecting the option **Select ROWs**, **Route**, or **Schedule**. Then click **Apply** to update the grid.
- 4 Click the **Customize** tab *F* **Customize**, then the **Filters** button *Filters* to open the *Filters* page (Figure 13-42, page 640).

5 Click () New 'And' Group to open the filter properties group box (Figure 13-42).

PC	S Axis	5									×
File	Mod	dules	Data Entry	Reports / Graphs	; Tools	Field Computer	Help	0	PCS Axis	Welcome J	ohn Smith   🕑   🔀 Log Out
Q	Fiel	d Com	nputer Send	×							
											🕹 Customize
	Fil	ters:	Field Comp	uter Send						💾 Save and Close   💾 Save   🗠 Revert   🚳 Cancel	B Prompts
										New 'And' Group      Or Very 'Or' Group     Or' Gr	E Layouts
	ſ	0	Filter Group	Caption						ماx	💁 Sorts
			Active Facil	ities Only							Y Filters
		0	Inactive Fac	ilities and Facilitie	s on Inact	ive ROWs					🔀 Close
		1	Relative Mi	lepost Is between [	] a	nd [ ]					
		•	My AND Filt	er Group Caption_	1m					۸I۵ ۱۷	
			My Custor	m AND Filter Capti	on_1						
ş			🔲 Filter Is A							×	
Selected ROWs				Delinquent Date		Is Between			-	v 🔝 and v 📷	
ected		ΙL	My Custon	n AND Filter Captio	in_1			_			
Sele											

Figure 13-42. New 'And' Filter Group

- **6** Type a name for the filter group in the field **Filter Group Caption**.
- **7** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- **8** If the AND filter group includes a date filter, set a date range using a calendar or dynamic dates in the following manner:
  - Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
  - To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.
  - To set a date range using dynamic start and end dates, click the 📰 calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **9** If you want the filter to remain on for all sessions of *Field Computer Send*, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the *Field Computer Send* window using the filter's check box.
- **10** Type a name for the filter in the field **Enter Custom Filter Caption**.
- **11** If you want to set up additional filter criteria for the filter group:

- a Click the **C** Add button to open another filter property group box.
- **b** Type a name for the filter in the field **Enter Custom Filter Caption**.
- c Repeat step 7 through step 9 to set up filter criteria.
- **12** Click the close button 🔀 to close the filter group.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **13** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{\mathbb{I}}$ .
  - **b** Drag and drop the filter or the filter group to a new location.
- **14** Click **P** Save and Close to return to the *Field Computer Send* window.

#### Adding an OR Filter Group

An OR filter group is a named set of one or more filters that affect the data output in the grid of *Field Computer Send* and subsequently the file sent to the Allegro. Adding an OR filter group produces a subset of records that meet *any* filter condition. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an OR filter group, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 13-43).
 Click Save to close the window.

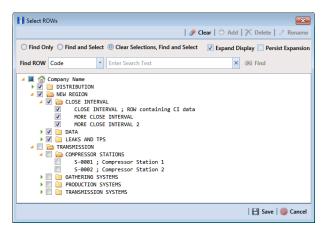


Figure 13-43. Select ROWs

- 2 Click Field Computer > Send to open the Field Computer Send window.
- 3 Choose a mode for displaying records in the grid by selecting the option **Select ROWs**, **Route**, or **Schedule**. Then click **Apply** to update the grid.
- 4 Click the **Customize** tab *F* **Customize**, then the **Filters** button *Filters* to open the *Filters* page (Figure 13-44, page 643).
- 5 Click **(D)** New 'Or' Group to open a filter properties group box (Figure 13-44).

PC	S Axi	;									
File	Mo	dules	Data Entry	Reports / Graphs	Tools	Field Computer	Help	0	PCS Axis	Welcome	John Smith   🤨   🔀 Log Out
Q	Fiel	d Con	nputer Send 🗙	1							
											📌 Customize
	Fil	ters:	Field Comput	er Send						🔐 Save and Close   💾 Save   🗠 Revert   🚳 Cancel	B Prompts
										③ New 'And' Group 0 New 'Or' Group	E Layouts
	ſ	0	Filter Group Ca	ption						×10	🛚 Sorts
		0	Active Facilitie	es Only							Y Filters
	1	1	Inactive Facili	ies and Facilities	on Inacti	ve ROWs					🔀 Close
		1	Relative Milep	ost Is between [	] a	nd [ ]					
		0	Include record	s that match any	of these	conditions				♦   ★	
			Last Inspection	on Date Is betwee	in [	] and []					
Selected ROWs 	1		🔲 Filter Is Alw	ays On						×	
			Last Inspec		*	ls Between			•	v iii and v iii	
		l	Enter Custom	Filter Caption							
Sele	U										

Figure 13-44. New 'Or' Filter Group

- **6** Type a name for the filter group in the field **Include records that match any of these conditions**.
- **7** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- 8 If the OR filter group includes a date filter, such as *Facility Delinquent Date Is Between* shown in Figure 13-44, page 643, set a date range using a calendar or dynamic dates in the following manner:
  - Type a date in the start and end date fields. Enter a start and end date using the format M/DD/YYYY to indicate the month, day, and year.
  - To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a start date. Then click the down arrow in the end date field to open a calendar and select an end date.
  - To set a date range using dynamic start and end dates, click the button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **9** If you want the filter to remain on for all sessions of *Field Computer Send*, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the *Field Computer Send* window using the filter's check box.
- **10** Type a name for the filter in the field **Enter Custom Filter Caption**.
- **11** If you want to set up additional filter criteria for the filter group:

- a Click the C Add button to open another filter property group box.
- **b** Type a name for the filter in the field **Enter Custom Filter Caption**.
- c Repeat step 7 through step 10 to set up filter criteria.
- **12** Click the close button 🔀 to close the filter group.

**NOTE:** Clicking the *P* edit icon for a particular filter opens that filter's property settings allowing you to change settings as needed.

- **13** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - a Point the mouse at the filter handle to change the cursor to a vertical resize cursor  $\hat{l}$ .
  - **b** Drag and drop the filter or the filter group to a new location.
- 14 Click I Save and Close to return to the Field Computer Send window.

#### Editing and Arranging Filters and Filter Groups

PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group. Filter groups are processed similarly. Information in this section explains how to edit filter property settings and how to arrange filters and filter groups.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 13-45).
 Click Save to close the window.

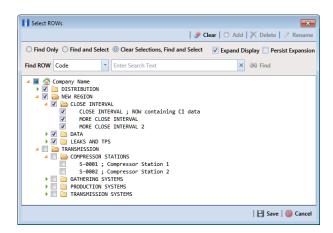


Figure 13-45. Select ROWs

- 2 Click Field Computer > Send to open the Field Computer Send window.
- 3 Choose a mode for displaying records in the grid by selecting the option **Select ROWs**, **Route**, **Schedule**, or **Import Exported List**. Then click **Apply** to update the grid.
- 4 Click the **Customize** tab **Customize**, then the **Filters** button **Filters** to open the *Filters* page (Figure 13-46, page 645).
- 5 Click the edit icon 🥜 to display a filter's property settings (Figure 13-46).

PCS	Axis	
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🔗 PCS Axis Welcon	ne John Smith   🕑   🔀 Log Out
Q	Field Computer Send ×	
		📌 Customize
	Filters: Field Computer Send 🛛 🔛 Save and Close   💾 Save   🗠 Revert   🚳 Can	cel 🔡 Prompts
	🛈 New 'And' Group   🚳 New 'Or' Gr	Dup 🛗 Layouts
	Filter Group Caption	<ul> <li>✓ Sorts</li> </ul>
	P Active Facilities Only	Y Filters
	✓ Inactive Facilities and Facilities on Inactive ROWs	Close
	✓ Relative Milepost Is between [ ] and [ ]	
	My AND Filter Group 1	<
	/ My Custom AND Filter Caption_1	
s	My Custom AND Filter Caption_2	
Selected ROWs 		
cted	Image: Second secon	
Sele	My Custom DR Filter Caption_1	

Figure 13-46. Edit Filters

- 6 To delete a filter in a filter group, click the filter's X delete button. Then click **✓ OK** when the *Delete* message displays.
- 7 To rename a filter, type a description in the filter's name field.
- **8** To change filter criteria, use filter selection fields to select a PCS Axis field, operator, and one or more filter conditions.
- 9 To enable a filter for all sessions of the data entry grid, click the check box Filter is Always On to place a check mark inside the check box. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- **10** Click the 🔀 close button to close the filter's property settings group box.
- **11** To move a filter to a different position in a filter group, or to move a filter group to a different position, follow these steps:
  - a Point the mouse at the handle of a filter or filter group to display a vertical resize cursor **1**.

**b** Drag and drop the filter or filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

- **12** Click **Save and Close** to close the filters page and return to the grid in *Field Computer Send*.
- **13** To apply filter changes to the grid in *Field Computer Send* and subsequently in the file sent to the Allegro, follow these steps:
  - a Click the **Filters** tab to open the *Filters* panel (Figure 13-47).
  - **b** Click one or more check boxes in *Filters* and then click **Apply**. For example, click **Currently Active Facilities Only** to only include active facilities in the grid and in the file sent to the Allegro.
  - c Click the **Filters** tab to close the *Filters* panel.

mith   🔮   🔁 Log
@ Ne

Figure 13-47. Filters

# Viewing the Field Computer Log

The field computer log includes a *Send Log* and *Receive Log*. The *Send Log* lists the facility records sent to the Allegro with the date and time records were processed. Likewise, the *Receive Log* identifies facility records received in PCS Axis from the Allegro, as well as the date and time they were received. Only those facility records updated by the Allegro are processed and included in the *Receive Log*.

You can use information in the field computer log to:

- verify which facility records have been sent and received
- compare both logs to verify all facilities that were inspected contain survey data
- troubleshoot issues if a problem occurs during data transfer

To view the field computer log, follow these steps:

- 1 Click Field Computer > Log to open the Field Computer Log window.
- 2 Click the **Receive Log** tab to view facility records received in PCS Axis from the Allegro Field Computer (Figure 13-48).

	rts/Graphs Tools Field Computer Help 😯 PCS Axis 🛛 🛛 🤀	lelcome John Smith   🔨   🔀 Log
Edd Computer Log         X           Receive Log         Send Log           Choose a date:         12/2/2014 2:12:05 PM           12/2/2014 2:12:05 PM         12/2/2014 1:4:147 PM           12/2/2014 1:54:26 PM         12/2/2014 1:54:36 PM           12/2/2014 1:54:37 PM         12/2/2014 1:53:37 PM           12/2/2014 1:53:31 PM         12/2/2014 1:53:31 PM           12/2/2014 1:53:31 PM         12/2/2014 1:50:35 PM           12/2/2014 1:50:35 PM         12/2/2014 1:50:35 PM           12/2/2014 1:50:37 PM         12/2/2014 1:50:37 PM           12/2/2014 1:50:37 PM         12/2/2014 1:50:27 PM           12/2/2014 1:50:26 PM         12/2/2014 1:50:20 PM	Facilities processed:         Import Trigger :: Manual         Import Started :: 122/2014 2:11:22 PM         Import Started :: 122/2014 2:11:22 PM         Import Duration :: 0:000:13         Defined Transfer Modes: Import         File: imported         C:\Users\donnarussell\AppData\LocahTemp\LG543-A CI native march2013.svy         Records: Found :: 1         Imported Records :: 0         << \MAPS >>         << < MAPS >>         Internal Field :: ROW Code [RightOfWay,RightOfWay,Code]         External Field :: Pipe [Pipeline:Speline:Code]         Internal Field :: Sinvey Number [Series.SeriesName]         External Field :: GSurveyFolder.ClSurveyFolder.ClSurveyRamDate]         External Field :: GSurveyr Name         Internal Field :: Sart Date         Internal Field :: Sart Date         Internal Field :: Sart Date         Internal Field :: Surveyr [ClSurveyFolder.ClSurveySurveyr]         External Field :: Surveyr         Internal Field :: Surveyr         Internal Field :: Surveyrettrial [ClSurveyFolder.ClSurveySurveyr] <th></th>	

Figure 13-48. Field Computer Log / Receive Log

3 Click the **Send Log** tab to view facility records sent to the Allegro (Figure 13-49).

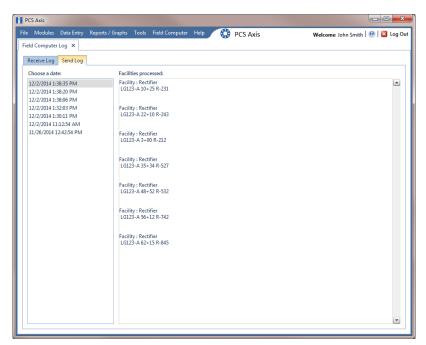


Figure 13-49. Field Computer Log / Send Log

Notes	

# 14

# Working with Telluric Compensation

After importing stationary data logger (SDL) files and Allegro Field Computer<sup>™</sup> survey files in PCS Axis, use the information in this chapter to prepare survey files and run telluric compensation. Topics in this chapter include those in the following list:

- PCS Axis Telluric Compensation Workflow (page 652)
- PCS Axis Telluric Compensation Checklist (page 653)
- Using Stationary Survey Maintenance (page 654)
- *Running Telluric Compensation* (page 673)

**IMPORTANT:** Bridge Import is an optional add-on that requires an activation key for operation. Running Bridge Import for the first time requires you to enter your Bridge activation key. If you are unable to locate your Bridge activation key, contact PCS Technical services for assistance at <u>pcstechservices@aiworldwide.com</u>. For more information, refer to Activating Bridge Import for Operation (page 15).

# PCS Axis Telluric Compensation Workflow

The figure below identifies the process for working with telluric compensation in PCS Axis (Figure 14-1).

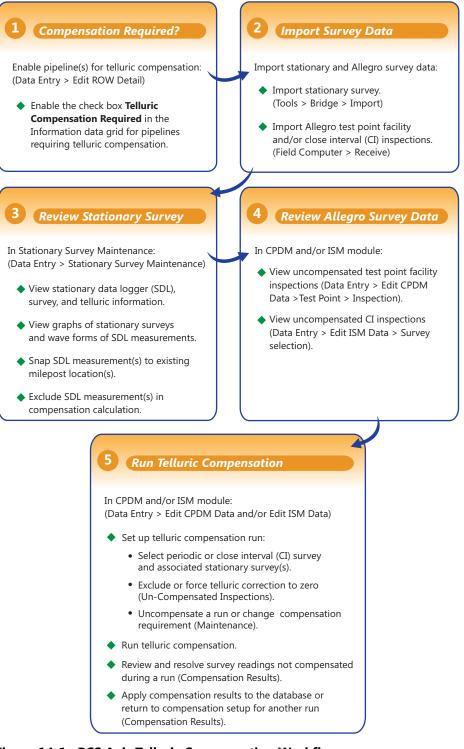


Figure 14-1. PCS Axis Telluric Compensation Workflow

# PCS Axis Telluric Compensation Checklist

The following table provides a checklist of topics included in this document related to the optional Telluric Compensation feature (Table 14-1). Some topics have either been described earlier in previous chapters or are included in this chapter.

To perform these tasks	Refer to these topics
Activate Telluric Compensation feature in PCS Axis.	See <i>Activating Telluric Compensation</i> (page 17).
View or edit default system setting for telluric threshold.	See Setting Criteria Options (page 40).
Add a layout theme for the <i>Information</i> data grid in <i>Edit ROW Detail</i> that includes the field labeled <i>Telluric</i> <i>Compensation Required</i> . Then enable this field for each pipeline segment requiring telluric compensation.	See Working with Themes and Filter Groups (page 167) in thechapter entitled Working with Pipeline Records (page 139).
Add a prompt theme that includes <i>Test</i> <i>Point Detail Inspection</i> fields to be used with the Allegro Field Computer in an annual or periodic survey.	See Adding a Prompt Theme for Test Point Subfacilities (page 630).
Add a Bridge Import Definition for importing stationary data logger (SDL)	See Adding a Bridge Import Definition for an SDL Survey File (page 503).
survey files.	<b>IMPORTANT:</b> Using Bridge Import to import data in PCS Axis requires a Bridge activation key. For more information refer to <i>Activating Bridge Import for Operation</i> (page 15).
Receive survey files from the Allegro Field Computer (close interval and/or annual/periodic survey files).	See Receiving a Facility Survey from the Allegro (page 613) and Receiving a Continuous Survey from the Allegro (page 615).
Evaluate and modify imported SDL survey files (upstream/downstream data set pairs).	See Using Stationary Survey Maintenance (page 654).

Table 14-1.	PCS Axis	Telluric Compe	nsation Checklist
-------------	----------	----------------	-------------------

To perform these tasks	Refer to these topics
Evaluate and modify uncompensated test point inspections using CPDM and/or ISM.	See Using Telluric Compensation in CPDM (page 673) and Using Telluric Compensation in ISM (page 684).
Run compensation in CPDM and/or ISM for test points with telluric effects.	See Using Telluric Compensation in CPDM (page 673) and Using Telluric Compensation in ISM (page 684).

#### Table 14-1. PCS Axis Telluric Compensation Checklist (continued)

## Using Stationary Survey Maintenance

Stationary Survey Maintenance allows you to determine if telluric current effects are present on a pipeline segment. After importing stationary surveys in PCS Axis, use Stationary Survey Maintenance to view and edit stationary survey files.

Tasks you can accomplish in *Stationary Survey Maintenance* include those described in the following topics:

- View a Stationary Survey (page 655)
- Delete a Stationary Survey (page 661)
- View Telluric Summary Information (page 662)
- View a Stationary Survey Graph (page 664)
- View Compensation Runs (page 666)
- View a Survey Record Waveform (page 667)
- Match a Stationary Survey to an Existing Milepost Location (page 669)
- Exclude Survey Records in a Stationary Survey (page 671)

**NOTE:** A stationary survey includes a pair of survey files provided by two stationary data loggers (SDLs). One SDL provides a survey file with upstream voltage measurements while the other SDL provides a survey file with downstream voltage measurements.

#### View a Stationary Survey

The *Stationary Survey Maintenance* window displays a list of imported stationary surveys and associated survey records. *Stationary Survey Maintenance* is available for use when working with either the CPDM module (*Modules > Cathodic Protection Data Manager*) or ISM module (*Modules > Indirect Survey Manager*).

To open *Stationary Survey Maintenance* and view imported stationary surveys, follow these steps:

Select the pipeline segments you want to work with in the Select ROWs window. Click the Select ROWs button is to open the Select ROWs window and then select one or more pipeline segments. Click Save to close the window (Figure 14-2).

**NOTE:** A check mark inside a check box indicates a selection. To clear a selection, click the check box again to remove the check mark. A shaded check box indicates selection of some, not all, child folders, ROWs, and pipelines.

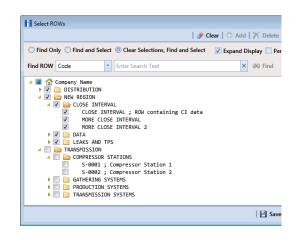


Figure 14-2. Select ROWs

- 2 Click Data Entry > Stationary Survey Maintenance (Figure 14-3).
- 3 If you want to filter the data view to view stationary surveys only for a particular time period, date range, or all stationary surveys, click the down arrow in the Date range field and select an option in the selection list. Then click Refresh (Figure 14-3).

**NOTE:** Survey records with a problem are identified with an  $\bigotimes$  error or  $\bigoplus$  warning icon in the survey records grid. A survey record with an error must be resolved prior to running telluric compensation. A survey record with a warning does not require resolution, however problems may occur during telluric compensation.

Conditions resulting in an 😵 error icon include: missing ON and/or OFF voltage measurement; missing survey date and time. A 😱 warning icon is present when the same voltage measurement is used for both the ON and OFF reading. See the next figure for an example (Figure 14-3).

For a description of the *Stationary Survey Maintenance* window, see Table 14-2, page 657.

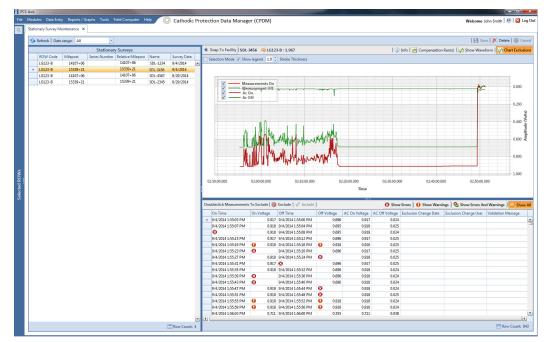


Figure 14-3. Stationary Survey Maintenance

Description
A list of stationary surveys for the pipeline segment(s) currently selected in the <i>Select ROWs</i> window display in the <i>Stationary Surveys</i> grid located on the left side of the window.
When you want to view stationary surveys for a particular time period, date range, or all stationary surveys, click the down arrow in the <i>Date range</i> field and select an option in the selection list. Ther click <i>Refresh</i> to update data showing in the <i>Stationary Surveys</i> grid.
Clicking the <i>Stationary Surveys</i> title bar collapses the panel allowing you to view more of the graph and survey records grid. Clicking the title bar again expands the panel.
Located above the graph is a button/information bar with the following features:
Snap To Facility: If the currently selected stationary survey includes milepost locations that do not match milepost locations in PCS Axis, click <i>Snap To Facility</i> to open a dialog box and match the stationary survey to an existing milepost location already established in PCS Axis. Using this feature ensures accurate telluric compensation calculations. For more information, see <i>Match a</i> <i>Stationary Survey to an Existing Milepost</i> <i>Location</i> (page 669).
Stationary Survey, ROW Code, Milepost: Selecting a stationary survey displays related information above the graph. Information include the name of the stationary survey, ROW Code (pipeline segment), and milepost (survey location)
(i) <b>Info</b> : Click this button to open the <i>Stationary</i> <i>Telluric Info</i> window and view a telluric summary for the stationary survey currently selected in the <i>Stationary Surveys</i> grid. Use this feature to quickly determine if telluric current effects are present. For more information, see <i>View Telluric</i>

#### Table 14-2. Description of Stationary Survey Maintenance Window

Item	Description		
Button/Information Bar (continued)	Compensation Run(s): Click this button to open the Compensation Runs dialog box. Use the dialog box to view information about a telluric compensation run for the currently selected stationary survey. Or if required, uncompensate or reverse (undo) a compensation run.		
	<b>Show Waveform</b> : This button is available for use when the currently selected stationary survey includes one or more survey records with a waveform. Click the button to open the <i>Waveform</i> window and view a survey record in a waveform graph. See <i>View a Survey Record Waveform</i> (page 667) for more information.		
	<b>Chart Exclusions</b> : Click this button to show or hide excluded survey records in the graph. The default state shows excluded survey records as indicated by the highlighted button.		
Graph	Selecting a stationary survey displays associated survey measurements in a graph. Features included with the graph include those in the following list. See <i>View a Stationary Survey Graph</i> (page 664) for more information.		
	• <i>Selection Mode</i> : Select this check box to hide or show the ON/OFF tooltips that display when hovering the mouse over a graph line.		
	• <i>Show Legend</i> : Select this check box to show or hide the graph legend.		
	• <i>Stroke Thickness</i> : Click the up/down arrows to adjust the thickness of the graph line. You can also type a value in this field to adjust the thickness.		
	• Zoom In: If the Selection Mode check box includes a check mark, click the check box to clear the check mark. Then click and hold the mouse while dragging a selection over the graph to zoom in on the selected area of the graph.		

#### Table 14-2. Description of Stationary Survey Maintenance Window (continued)

Item	Description
Graph (continued)	<ul> <li>Survey Record Selection: Click anywhere on a graph line to highlight the corresponding survey record in the list of survey records in the bottom panel. A survey record with an arrow and a dashed selection box denotes a survey record selection.</li> </ul>
Survey Measurement Records	The grid in the bottom panel of the window includes a list of all survey measurement records associated with the stationary survey currently selected in the <i>Stationary Surveys</i> panel. Features included with this grid include:
	<b>Double-click Measurements To Exclude</b> : Double-clicking a survey measurement record excludes it from the telluric compensation calculation. PCS Axis identifies an excluded record with a red highlight; the exclusion date; and the name of the person who excluded the record.
	Use either of the following multi-select methods to exclude several records at one time:
	<ul> <li>Press and hold the <b>Ctrl</b> key on your computer keyboard while selecting each record you want to exclude. Then click <b>S Exclude</b>.</li> </ul>
	-0 <i>r</i> -
	<ul> <li>To multi-select records in sequential order, press and hold the <b>Shift</b> key, click the first record and then the last record. Click <b>SExclude</b>.</li> </ul>
	<b>S Exclude</b> : Clicking this button excludes selected survey measurement records from the telluric compensation calculation.

Table 14-2. Description of Stationary Survey Maintenance Window (continued)

Item	Description
Survey Measurement Records	<b>Include</b> : To include one or more survey measurement records in the telluric compensation calculation that have previously been excluded, select the excluded record(s) and then click <b>Include</b> .
	<b>Filter the Data View</b> : Click any of the following buttons to filter the data view in the survey measurement records grid:
	Show Errors: Click this button to only view records with errors.
	Show Warnings: Click this button to only view records with warnings.
	Show Errors And Warning: Click this button to view only records with errors and warnings.
	Show All: Click this button to view all records in the grid; this includes records with and without errors and warnings.

#### Table 14-2. Description of Stationary Survey Maintenance Window (continued)

#### Delete a Stationary Survey

You can delete a stationary survey with associated survey measurement records if it has not been used in telluric compensation. When a stationary survey has been used in telluric compensation, the  $\nearrow$  *Delete* button is disabled to prevent accidental deletion.

To delete a stationary, follow these steps:

- 1 Select the pipeline segment(s) you want to work with in the *Select ROWs* window (Figure 14-2, page 655).
- 2 Click **Data Entry** > **Stationary Survey Maintenance** to open the *Stationary Survey Maintenance* window (Figure 14-3, page 656).
- **3** Click the down arrow in the **Date range** field and select an option in the selection list to filter the data view in the *Stationary Surveys* grid. Then click **S Refresh.**
- 4 Select the stationary survey in the *Stationary Surveys* grid you want to delete. Then click **X Delete**.
- 5 When the *Delete Stationary Survey* message displays, click **√ Yes** to delete the stationary survey or **⊠ No** to cancel the operation (Figure 14-4).

Delete Stationary Survey		×
Delete Selected Survey		
	؇ Yes	No 🛛

Figure 14-4. Delete Stationary Survey

#### **View Telluric Summary Information**

A telluric summary is available for each stationary survey listed in *Stationary Survey Maintenance*. Use this feature to quickly determine if telluric current effects are present.

To view a telluric summary for a stationary survey, follow these steps:

- **1** Select the pipeline segment(s) you want to work with in the *Select ROWs* window (Figure 14-2, page 655).
- 2 Click **Data Entry** > **Stationary Survey Maintenance** to open the *Stationary Survey Maintenance* window (Figure 14-3, page 656).
- **3** Click the down arrow in the **Date range** field and select an option in the selection list to filter the data view in the *Stationary Surveys* grid. Then click **S Refresh.**
- 4 Select a stationary survey in the *Stationary Surveys* grid and then click (i) **Info** to open the *Stationary Telluric Info* window (Figure 14-5).

See Table 14-3 (page 663) for a description of the Stationary Telluric Info window.

Survey	My Stationary Survey 002
Telluric Effects	True
On Avg (V)	1.2563
On Min (V)	-0.2810
On Max (V)	1.2780
Off Avg (V)	1.1500
Off Min (V)	-0.3220
Off Max (V)	1.1720
Threshold (V) +/-	0.0100
On Max - On Avg (V)	0.0217
On Min - On Avg (V)	-1.5373
Off Max - Off Avg (V)	0.0220
Off Min - Off Avg (V)	-1.4720
	🛛 🔀 Close

Figure 14-5. Stationary Telluric Info

The next table provides a description of the type of summary information available in the *Stationary Telluric Info* window (Table 14-3).

Field Name	Description
Survey	Stationary survey file name.
Telluric Effects	Identifies if the stationary survey shows telluric effects. Result for this field is either <i>True</i> or <i>False</i> .
On Avg (V)	Average ON voltage measurement.
On Min (V)	Lowest ON voltage measurement.
On Max (V)	Highest ON voltage measurement.
Off Avg (V)	Average OFF voltage measurement.
Off Min (V)	Lowest OFF voltage measurement.
Off Max (V)	Highest OFF voltage measurement.
Threshold (V) +/-	System default telluric threshold set in system Options ( <i>Tools &gt; Options &gt; Criteria</i> ).
On Max – On Avg (V)	Highest ON voltage measurement minus the average ON voltage measurement.
On Min – On Avg (V)	Lowest ON voltage measurement minus the average ON voltage measurement.
Off Max – Off Avg (V)	Highest OFF voltage measurement minus the average OFF voltage measurement.
Off Min – Off Avg (V)	Lowest OFF voltage measurement minus the average OFF voltage measurement.

Table 14-3. Stationary Telluric Info

### View a Stationary Survey Graph

To view a graph of voltage measurements associated with a stationary survey, follow these steps:

- **1** Select the pipeline segment(s) you want to work with in the *Select ROWs* window (Figure 14-2, page 655).
- 2 Click **Data Entry** > **Stationary Survey Maintenance** to open the *Stationary Survey Maintenance* window.
- **3** Click the down arrow in the **Date range** field and select an option in the selection list to filter the data view in the *Stationary Surveys* grid. Then click **S Refresh.**
- **4** Select a stationary survey in the *Stationary Surveys* grid. A graph of survey measurements associated with the selected stationary survey display in the top-right panel of the window (Figure 14-3, page 656).

The stationary survey graph supports the following functions:

- *Tooltips with ON/OFF Measurements*: Placing the mouse over a point in the graph displays tooltips with corresponding ON/OFF voltage measurements (Figure 14-6).
- *Selection Mode*: Select this check box to hide or show the ON/OFF tooltips that display when hovering the mouse over a point in the graph.
- *Show Legend*: Select this check box to show or hide the graph legend. You can also click one or more check boxes in the graph legend to hide or show the selected graph element.
- *Stroke Thickness*: Click the up/down arrows to adjust the thickness of the graph line. You can also type a value in this field to adjust the thickness.



Figure 14-6. Tooltips with ON/OFF Measurements

• Zoom In: If the Selection Mode check box includes a check mark, click the check box to clear the check mark. Then click and hold the mouse while dragging a selection over the graph to zoom in on the selected area of the graph. Double-click anywhere inside the graph to return to normal graph view (Figure 14-7).



Figure 14-7. Zoom In On Graph

Survey Record Selection: Click anywhere on a graph line to highlight the corresponding survey record in the survey record grid in the bottom panel. A survey record with an parrow denotes a selection in the grid. For example, the survey record with an On Time of 9/4/2014 2:16:11 PM is selected in the following example (Figure 14-8).

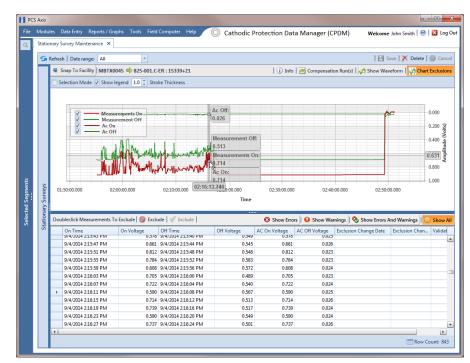


Figure 14-8. Select Survey Record in Grid

#### **View Compensation Runs**

Use the *Show Runs* link in the top grid of *Stationary Survey Maintenance* to view information about a telluric compensation run for a selected stationary survey and if required, uncompensate or reverse (undo) the compensation run.

To view information or reverse a compensation run for a selected stationary survey, follow these steps:

- 1 Select the pipeline segment(s) you want to work with in the *Select ROWs* window (Figure 14-2, page 655).
- 2 Click **Data Entry** > **Stationary Survey Maintenance** to open the *Stationary Survey Maintenance* window.
- **3** Click the down arrow in the **Date range** field and select an option in the selection list to filter the data view in the *Stationary Surveys* grid. Then click **S Refresh.**
- Select a stationary survey in the Stationary Surveys grid and then click
   Compensation Run(s) to open the Compensation Runs dialog box (Figure 14-9).
- 5 If you want to reverse (undo) the compensation run, click the check box associated with the compensation run you want to reverse. Then click Save to reverse the selected compensation run.

select	compensation r	run(s) to un-compensa	te for (7/27/2012).			
					Sele	ect All   🥩 Clear
F	Ran By	Ran Date	UpStream Survey	DownStream Survey	Action	
] • J	John.Smith	09/04/2014	SDLsurvey1000	SDLsurvey2000	Normal	
						Row Count:

Figure 14-9. Compensation Runs

#### View a Survey Record Waveform

When one or more survey records in a stationary survey include an associated waveform, click the **Show Waveform** button to open the *WaveForm* window and view survey measurements in both a graph and a grid.

To view a survey record waveform, follow these steps:

- 1 Select the pipeline segment(s) you want to work with in the *Select ROWs* window (Figure 14-2, page 655).
- 2 Click **Data Entry** > **Stationary Survey Maintenance** to open the *Stationary Survey Maintenance* window.
- **3** Click the down arrow in the **Date range** field and select an option in the selection list to filter the data view in the *Stationary Surveys* grid. Then click **S Refresh.**
- 4 Select a stationary survey in the *Stationary Surveys* grid and then click Show Waveform to open the *Waveform* window (Figure 14-10).

Waveforms	v 5	Show legend 1 🗘 Strok	e Thickness							
9/4/2014 12:54:57 PM										
9/4/2014 1:24:57 PM										
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			form On	Դ_Ռ_Ռ_	ո–ր–ր	-ր-ր		-h-h		
		Wave	form Ac On						- (	0.200 (1400) 0.600 (1400)
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										.600 🕯
			זחח	חחו	ппп	n n	n	n n		4
										0.800
										.000
		12:55:00.000	12:55:10.000	12:55:20.000 12:	55:30.000 12	2:55:40.000	12:55:50	12	56:00.000	
		12.55.00.000	12.55.10.000				12.33.30		50.00.000	
				Tim	ie					
		Time	Dc Voltage	Ac Voltage						
	- F	12:54:57.547	0.9150	0.0740						
		12:54:57.597	0.9150	0.0740						
		12:34:37:397	0.9130	0.0740						
		12:54:57.647	0.9150							
				0.0730						
		12:54:57.647 12:54:57.697 12:54:57.747	0.9150 0.9150 0.9150	0.0730 0.0720 0.0710						
		12:54:57.647 12:54:57.697 12:54:57.747 12:54:57.797	0.9150 0.9150 0.9150 0.9150	0.0730 0.0720 0.0710 0.0710						
		12:54:57.647 12:54:57.697 12:54:57.747 12:54:57.797 12:54:57.847	0.9150 0.9150 0.9150 0.9150 0.9160	0.0730 0.0720 0.0710 0.0710 0.0700						
		12:54:57.647 12:54:57.697 12:54:57.747 12:54:57.797 12:54:57.847 12:54:57.897	0.9150 0.9150 0.9150 0.9150 0.9150 0.9160 0.9150	0.0730 0.0720 0.0710 0.0710 0.0700 0.0700						
		12:54:57.647 12:54:57.697 12:54:57.747 12:54:57.797 12:54:57.847 12:54:57.897 12:54:57.897	0.9150 0.9150 0.9150 0.9150 0.9160 0.9150 0.9150	0.0730 0.0720 0.0710 0.0710 0.0700 0.0700 0.0710 0.0700						
		12:54:57.647 12:54:57.697 12:54:57.747 12:54:57.797 12:54:57.847 12:54:57.897 12:54:57.897 12:54:57.997	0.9150 0.9150 0.9150 0.9150 0.9160 0.9150 0.9150 0.9150 0.9160	0.0730 0.0720 0.0710 0.0710 0.0700 0.0710 0.0700 0.0690						
		12:54:57.647 12:54:57.697 12:54:57.747 12:54:57.797 12:54:57.897 12:54:57.897 12:54:57.947 12:54:57.947 12:54:57.997	0.9150 0.9150 0.9150 0.9150 0.9160 0.9150 0.9150 0.9160 0.9160	0.0730 0.0720 0.0710 0.0710 0.0700 0.0710 0.0700 0.0690 0.0700						
		12:54:57.647 12:54:57.697 12:54:57.747 12:54:57.797 12:54:57.847 12:54:57.897 12:54:57.897 12:54:57.997	0.9150 0.9150 0.9150 0.9150 0.9160 0.9150 0.9150 0.9150 0.9160	0.0730 0.0720 0.0710 0.0710 0.0710 0.0710 0.0710 0.0700 0.0690 0.0700						

Figure 14-10. WaveForm

The waveform supports the following functions:

- *Tooltips with ON/OFF Measurements*: Placing the mouse over a point in the waveform displays tooltips with corresponding ON/OFF voltage measurements (Figure 14-11).
- *Show Legend*: Select this check box to show or hide the graph legend. You can also click one or more check boxes in the graph legend to hide or show the selected graph element.

• *Stroke Thickness*: Click the up/down arrows to adjust the thickness of the graph line. You can also type a value in this field to adjust the thickness.

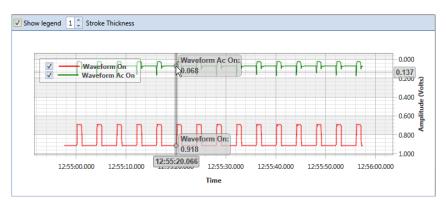


Figure 14-11. Tooltips with ON/OFF Measurements

• Zoom In: Click and hold the mouse while dragging a selection over the graph to zoom in on the selected area of the graph. Double-click anywhere inside the graph to return to normal graph view (Figure 14-12).



Figure 14-12. Zoom In On Graph

#### Match a Stationary Survey to an Existing Milepost Location

When a stationary survey includes milepost locations that do not match existing milepost locations already established in PCS Axis, these mileposts are identified as *Unregistered Milepost*. Unregistered mileposts relate only to the associated stationary survey and are not considered as facilities in PCS Axis.

To ensure telluric compensation calculations are accurate, use *Snap To Facility* to match milepost locations in a stationary survey to existing milepost locations already established in PCS Axis (Figure 14-13).

To match milepost locations in a stationary survey to existing milepost locations in PCS Axis, follow these steps:

- 1 Select the pipeline segment(s) you want to work with in the *Select ROWs* window (Figure 14-2, page 655).
- 2 Click **Data Entry** > **Stationary Survey Maintenance** to open the *Stationary Survey Maintenance* window.
- **3** Click the down arrow in the **Date range** field and select an option in the selection list to filter the data view in the *Stationary Surveys* grid. Then click **S Refresh.**
- 4 Select a stationary survey in the *Stationary Surveys* grid and then click the **G** Snap To Facility button to open the *Snap To Facility* window (Figure 14-13).

	e	LG123-A	•	•		
Milepost		1.000		]		
eries Nu	mber	Series Number	-	-		
Relative Milepost		1.000				
Existing F						
LG1						

Figure 14-13. Snap To Facility

**5** Click **Existing Facilities** to enable the grid for use.

PCS Axis automatically selects the closest existing milepost location as indicated by the highlighted record labeled *LG123-A*, *1.243* shown in the following example (Figure 14-14). You can however change the selection if needed.

- **6** To snap the stationary survey to an existing milepost location, select a milepost record in the grid and then click **V OK**.
- 7 When the *Snap To Facility* window closes, click **Save** in the *Stationary Survey Maintenance* window to save changes.

RO	W Code	LG123-A				
N A II	epost	1.000				
Ser	ies Number	Series Number				
Rel	ative Milepost					
Exi	sting Facilities -					
	ROW Code	Milepost	Series Number	Relative Milepost		
	LG123-A	0.621		0.621		
	LG123-A	0.690		0.690		
	LG123-A	0.746		0.746		
•	LG123-A	1.243		1.243		
	LG123-A	1.379		1.379		
	LG123-A	1.460		1.460		
	LG123-A	1.864		1.864		
	LG123-A	1.932		1.932		
	LG123-A	1.988		1.988		
						m Row Coun

Figure 14-14. Snap To Facility

#### Exclude Survey Records in a Stationary Survey

When a stationary survey includes one or more survey records with problems, the survey records are identified with an 🐼 error or 😱 warning icon. A survey record with one or more errors must be resolved prior to running telluric compensation. A survey record with a warning does not require resolution, however problems may occur during telluric compensation.

Information in this section explains how to exclude survey records in the compensation calculation. A stationary survey with any of the following characteristics that include an error or warning are eligible for exclusion:

- Missing ON and/or OFF voltage measurement.
- Missing survey date and time.
- Same voltage measurement for both the ON and OFF reading.

To exclude one or more survey records in the compensation calculation, follow these steps:

- **1** Select the pipeline segment(s) you want to work with in the *Select ROWs* window (Figure 14-2, page 655).
- 2 Click **Data Entry** > **Stationary Survey Maintenance** to open the *Stationary Survey Maintenance* window.
- **3** Click the down arrow in the **Date range** field and select an option in the selection list to filter the data view in the *Stationary Surveys* grid. Then click **S Refresh.**
- 4 Select a stationary survey in the *Stationary Surveys* grid.
- **5** If you want to filter data in the survey record grid, complete one of the following steps:
  - a Click 🔀 Show Errors to only display survey records with errors.
  - **b** Click **()** Show Warnings to only display survey records with warnings.
  - c Click Show Errors and Warnings to only display survey records with errors and warnings.

**NOTE:** Clicking **Show All** displays all survey records related to the selected stationary survey including those with and without errors and warnings.

- 6 Use any of the methods in the following list to exclude one or more survey records. PCS Axis highlights excluded survey records in red as shown in the following example (Figure 14-15). The fields labeled *Exclusion Change User* and *Exclusion Change Date* also identify who excluded the survey record and when it was excluded.
  - Double-click the survey record.
  - Select a survey record and then right-click the mouse and choose **Exclude Selected** in the shortcut menu that opens.
  - To select multiple survey records in consecutive order, click the first survey record, press and hold the **Shift** key, then click the last survey record. Right-click the mouse and choose **Exclude Selected** in the shortcut menu.
  - To select multiple survey records in non-consecutive order, press and hold the **Ctrl** key, then click each survey record you want to exclude. Right-click the mouse and choose **Exclude Selected** in the shortcut menu.

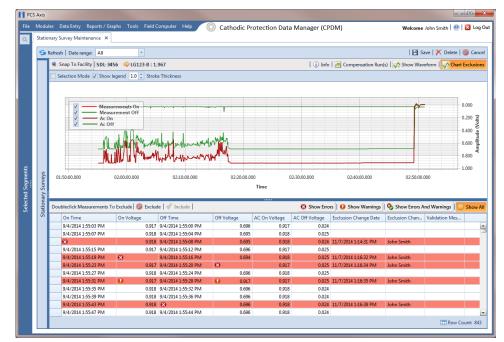


Figure 14-15. Exclude Survey Record(s) in Telluric Compensation

7 To include a survey record in telluric compensation that has previously been excluded, select the excluded survey record and then click **√ Include**.

**NOTE:** Use the **M Chart Exclusions** button to show or hide excluded survey records in the graph.

# **Running Telluric Compensation**

After receiving Allegro survey files in PCS Axis and importing, evaluating, and modifying stationary data logger (SDL) survey files in *Stationary Survey Maintenance*, use the information in this section to run telluric compensation and related functionality using features available in the CPDM and ISM modules.

Topics in this section include those in the following list:

- Using Telluric Compensation in CPDM
- Using Telluric Compensation in ISM (page 684)

### Using Telluric Compensation in CPDM

When working with test point inspections in a periodic or annual survey that require telluric compensation, use the *Telluric* workspace in the CPDM *Test Point Inspection* grid to perform compensation and other related functions.

Test point records associated with the selected pipeline segment display in the *Test Point Inspection* grid and the *Test Point Inspection Detail* mini-grid. Test point inspections eligible for telluric compensation display in the *Telluric* workspace based on your selection of SDL survey files (upstream/downstream data set).

Topics in this section include those in the following list:

- Viewing Test Point Inspections Eligible for Compensation (page 674)
- Changing the Compensation Requirement (page 675)
- Running Telluric Compensation (page 677)
- Reversing a Compensation Run for a Selected Survey Date (page 681)
- Uncompensating Test Point Inspections (page 682)

#### Viewing Test Point Inspections Eligible for Compensation

Complete the following steps to view test point inspections eligible for telluric compensation in CPDM:

1 Select one or more pipeline segments to work with in the *Select ROWs* window. Click **Save** to close the window (Figure 14-16).

Choose pipeline segments with the option labeled *Telluric Compensation Required* enabled in *Edit ROW Detail*. See *Adding a Pipeline Information Record* (page 151) for more information if needed.

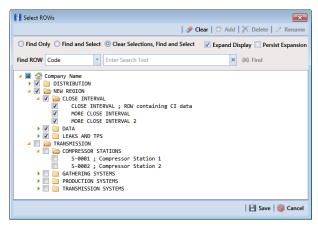


Figure 14-16. Select ROWs

2 Click Data Entry > Edit CPDM Data to open the Edit CPDM Data window.

3 Click **Test Point** Test Point and then the **Inspection** tab Inspection to open the *Inspection* grid. Test points eligible for compensation include voltage measurements in the fields labeled *Uncompensated On* and *Uncompensated Off* in the *Test Point Detail Inspection* mini-grid as shown in the following figure (Figure 14-17).

			nce	el Sele	cted ROWs 📰 My Test Poi	nt Inspections Layout_	1 🐁 (PCS) ROV	V Code and Milepost		🍄 Options 🖌 🕹 Cu
	Test Point	Rectifier	oreign Bond	Galvanic Anode	Tank					🖬 B
61	🛛 Find 🛛 🖉 Tellu	iric						🛛 🔂 Build St	irvey   🗢 Add   🗡 [	Delete   😘 Refresh
	ROW Code and	Pipe Milepost	Inspection	in Date	Survey	Structure P/S	Structure	IRF Casing P	'S Foreign P	VS Technic
		1432.00	0 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
	LG123-A	2814.00	0 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
	LG123-A	4207.00	0 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
	LG123-A	5598.00	0 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
	LG123-A	6983.00	0 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
	LG123-A	8355.00	0 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
	LG123-A	9720.00	0 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
	LG123-A	11071.0	0 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
	LG123-A	11093.0	10 7/15/201	4 12:00:00 AM	2014 Annual Survey					jsmith
										Row Co
Γ.	Test Point Detail Ins	pection								-   0
	Name	PCS Field Name	Compliance	On	Off On Date and T	ime Off Date	and Time	Compensation Run	Uncompensated On	Uncompensated Off
	TestLead 1	Structure P/S	0		7/15/2014 12:3	14:27 PM 7/15/201	4 12:34:24 PM		-1.893	-1.170
			0		7/15/2014 12:	15:31 PM 7/15/201	4 12:35:28 PM	0	-1.901	-1.189
	TestLead 2	Structure P/S			7/15/2014 12:3	4-55 PM 7/15/201	4 12:34:52 PM	9	-0.252	-0.210
		Structure P/S AC P/S	۲							
	TestLead 2		0		7/15/2014 12:5		4 12:35:44 PM	0	-1.903	-1.188
	TestLead 2 TestLead 3	AC P/S					4 12:35:44 PM	9	-1.903	-1.18

Figure 14-17. Edit CPDM Data

#### Changing the Compensation Requirement

If you need to change the compensation requirement for a pipeline segment and related test point inspections, use the *Maintenance* window available in the *Telluric* workspace to apply the features labeled *Add Requirement* or *Remove Requirement* as needed.

**IMPORTANT:** Changing the compensation requirement must occur prior to running telluric compensation for the pipeline survey. The compensation requirement cannot be changed once telluric compensation has completed and results have been applied to the PCS Axis database.

To change the compensation requirement for a pipeline segment, follow these steps:

- Select the pipeline segment you want to work with in the Select ROWs window.
   Then click Save to close the window (Figure 14-16, page 674).
- 2 Open the *Telluric* workspace in CPDM. Click **Data Entry** > **Edit CPDM Data** > **Test Point** > **Inspection** > **Telluric** tab.

- 3 Locate the upstream and downstream SDL survey files associated with the selected pipeline segment by clicking the down arrow in the Survey Date field and selecting a survey date using a calendar. You can also type a survey date in the field using the format MM/DD/YYYY to indicate the month, day, and year. Then click Q Find.
- 4 Click **Maintenance** to open the *Maintenance* window and then click the **Compensation Requirements** tab (Figure 14-18).
- **5** Click the down arrow in the **ROW Code and Pipe** field and select a pipeline segment in the selection list to view related test point inspections in the grid.

(	Compensation Run(s)	Compensation F	lequirements						
lec	t a ROW to change the c	ompensation require	ement for un-compensated read	dings on (7/15/2014).					
lov	V Code and Pipe LG123-	A	-						
	ROW Code and Pipe	Milepost	Inspection Date	Survey	Structure P/S	Structure IRF	Casing P/S	Foreign P/S	
	LG123-A	1432.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	2814.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
•	LG123-A	4207.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	5598.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	6983.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	8355.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	9720.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	11071.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	11093.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	12593.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	13948.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	15832.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	16630.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	17491.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	18730.000	7/15/2014 12:00:00 AM	2014 Annual Survey					
	LG123-A	18939.393	7/15/2014 12:00:00 AM	2014 Annual Survey					
_									
-									Þ
_								Row Coun	_
									· ·

Figure 14-18. Maintenance

- **6** Complete one of the following steps:
  - a To add the compensation requirement to the selected pipeline segment, click
     Add Requirement.
  - **b** To remove the compensation requirement from the selected pipeline segment, click **S Remove Requirement**.

After adding or removing the compensation requirement, PCS Axis closes the *Maintenance* window and returns to the *Telluric* workspace.

**c** If you want to close the window without changing the current compensation requirement, click **Q Cancel** to return to the *Telluric* workspace.

#### **Running Telluric Compensation**

Running telluric compensation takes place in the *Telluric* workspace of the *Test Point Inspection* grid. After receiving Allegro survey files and importing and evaluating SDL survey files, use the information in this section to run telluric compensation for test point inspections in a periodic or annual survey that include telluric effects and require compensation.

Complete the following steps:

- Select the pipeline segment you want to work with in the Select ROWs window.
   Then click Save to close the window (Figure 14-16, page 674).
- 2 Open the *Telluric* workspace in CPDM. Click **Data Entry** > **Edit CPDM Data** > **Test Point** > **Inspection** > **Telluric** tab (Figure 14-19).

1	Information Inspection Test Point Rectif		n Bond Galvanic Anode	Tank						Custom
	🚥 Find 🔀 Telluric							O A	dd 🛛 🗶 Delete 🛛 🕤 F	Refresh   😫
	Criteria	۶	Clear Stationary Surveys			🋄 Se	lect All   🥩 Clear All			
	Survey Date 11/18/2014								<ul> <li>         Un-Competing</li></ul>	
	Q Find ROW Code and Pipe	Miles et	© Run Inspection Date	Comment	Structure P/S	Structure IRF	Casing P/S	Foreign P/S	Technician	Inspecti
	LG123-A	Milepost 1432.000	7/15/2014 12:00:00 AM	Survey 2014 Annual Survey					ismith	
	LG123-A	2814.000	7/15/2014 12:00:00 AM	2014 Annual Survey					jsmith	
	LG123-A	4207.000	7/15/2014 12:00:00 AM	2014 Annual Survey					jsmith	
	LG123-A	5598.000	7/15/2014 12:00:00 AM	2014 Annual Survey					jsmith	
	LG123-A	6983.000	7/15/2014 12:00:00 AM	2014 Annual Survey					jsmith	
	LG123-A	8355.000	7/15/2014 12:00:00 AM	2014 Annual Survey					jsmith	
										•
	Test Point Detail Inspection Name PCS F		mpliance On	Off On Date and T	ime Off Date a	nd Time Comp	ensation Run Uncon	npensated On Uncor	npensated Off Comp	Row Count: 1

Figure 14-19. Telluric Workspace

3 Locate the upstream and downstream SDL survey files associated with the selected pipeline segment by clicking the down arrow in the Survey Date field and selecting a survey date using a calendar. You can also type a survey date in the field using the format MM/DD/YYYY to indicate the month, day, and year. Then click Q Find (Figure 14-20).

A list of SDL survey files related to the entered survey date display in the *Stationary Surveys* group box of the *Telluric* workspace.

4 If you want to view a telluric summary of an SDL survey listed in the *Stationary Surveys* group box, click the **Info** link to open the *Stationary Telluric Info* window. For a description of this window, see *View Telluric Summary Information* (page 662). **5** If you want to view voltage measurements associated with an SDL survey listed in the *Stationary Surveys* group box, click the **Edit** link to open the *Stationary Survey Maintenance* window. A description of this window is available in the section entitled *Using Stationary Survey Maintenance* (page 654).

Inform	mation Inspe	ction M	faintenance			2 Selected R	OWs 🔠 My Test Point In	spections Layout_1 🛛 🐁 [PCS	] ROW Code and I	Vilepost		🗢 Option	ns 📌 Custo		
Те	est Point	Rectifier	r Foreig	n Bond Galv	anic Anode	Tank					📑 Ba				
86 F	ind 🛛 🖉 Tellu	iric										🔿 Add 🔀 Delete 🕞 Refresh			
Criteria	a		9		y Surveys				Select All						
					23-A 23-A	011730 01.45-			Info	Edit Edit		😑 Un-Comp	pensated Inspect		
~	Date 07/15/20	14 -			23-A	011/14 25.22	1_MBTX0072 7/15/2	014 18939.393	Into	Ealt		P Maintena	nce		
Survey	Date 07/15/20.														
Q. Fin	nd			🙆 Run											
	ROW Code and I	Pipe	Milepost	Inspection Da	ite	Survey	Structur	e P/S Structure IRF	Casing	P/S	Foreign P/S	Technician	Inspecti		
1	LG123-A		1432.000	7/15/2014 12:	MA 00:00	2014 Annu	al Survey					jsmith			
	.G123-A		2814.000	7/15/2014 12:	MA 00:00	2014 Annu	al Survey					jsmith			
L	.G123-A		4207.000	7/15/2014 12:	MA 00:00	2014 Annu	al Survey					ismith			
L	.G123-A		5598.000	7/15/2014 12:	MA 00:00	2014 Annu	al Survey					jsmith			
L	.G123-A		6983.000	7/15/2014 12:	MA 00:00	2014 Annu	al Survey					jsmith			
						2014.4									
Tes	it Point Detail Ins		eld Name		On	Off	On Date and Time	Off Date and Time		<b>n</b> 10		Uncompensated Off	-1017		
	Name	Structu													
	TestLead 1						7/15/2014 12:34:27 PM	7/15/2014 12:34:24 PM			-1.893	-1.176			
	TestLead 2	Structu					7/15/2014 12:35:31 PM	7/15/2014 12:35:28 PM			-1.901	-1.189			
	TestLead 3	AC P/S					7/15/2014 12:34:55 PM	7/15/2014 12:34:52 PM			-0.252	-0.210			
	TestLead 4	Structu	ire P/S				7/15/2014 12:35:47 PM	7/15/2014 12:35:44 PM			-1.903	-1.188			
													>		

Figure 14-20. Telluric Workspace

- **6** To run telluric compensation, follow these steps:
  - **a** Select the SDL upstream/downstream data set pair to use in the compensation run. Click the check box associated with the upstream and downstream SDL survey files (Figure 14-21).

Inforr	mation Inspe	ction Maintenanc	e		Selected ROW	's 📰 My Test Point Insp	ections Layout_1 🛛 🐁 [PCS	ROW Code and Milepo	st	🗳 Option	s 🦨 Custon
	st Point		reign Bond Galw	anic Anode	Tank						🖪 Based
65 F	ind 🔀 Tellu									Add 🔀 Delete 🕤	Refresh 🛛 😂 🛛
Criteria	a	1	Iclear Stational					🏢 Select All   🎐			
			✓ LG1 ✓ LG1		011730 01.45-1_M 011714 25.22-1_M			Info Ed Info Ed		Un-Comp	ensated Inspect
Survey	Date 07/15/20	14 -	V LOI	23*M	011714 25.22-1_0	B1X0072 7715	10555.555			Maintena متر	nce
Q. Fin	id		🙆 Run								
1	ROW Code and	Pipe Milepost									
1	LG123-A	- 1432.000	7/15/2014 12:	00:00 AM	2014 Annual S	urvey				jsmith	
L	G123-A	2814.000	7/15/2014 12:	00:00 AM	2014 Annual S	urvey				jsmith	
L	G123-A	4207.000	7/15/2014 12:	MA 00:00	2014 Annual S	urvey				jsmith	
L	G123-A	5598.000	7/15/2014 12:	00:00 AM	2014 Annual S	urvey				jsmith	
L	G123-A	6983.000	7/15/2014 12:	MA 00:00	2014 Annual S					jsmith	
4											Þ
Tes	t Point Detail Ins	pection		_	_					8	Row Count: 1
	Name	PCS Field Name			Off		Off Date and Time			Uncompensated Off	
	TestLead 1	Structure P/S				7/15/2014 12:34:27 PM	7/15/2014 12:34:24 PM		-1.893	-1.176	4
	TestLead 2	Structure P/S				7/15/2014 12:35:31 PM	7/15/2014 12:35:28 PM		-1.901	-1.189	
	TestLead 3	AC P/S				7/15/2014 12:34:55 PM	7/15/2014 12:34:52 PM		-0.252	-0.210	
	TestLead 4	Structure P/S				7/15/2014 12:35:47 PM	7/15/2014 12:35:44 PM		-1.903	-1.188	

Figure 14-21. Telluric Workspace

**b** Click **(C) Run** to begin the compensation process and open the *Compensation Results* window (Figure 14-22).

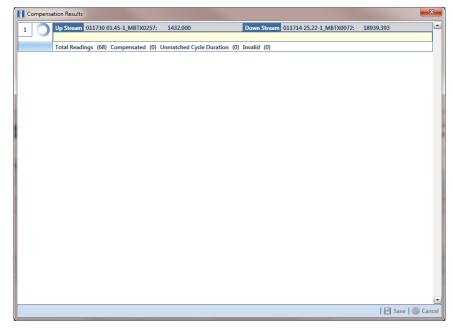


Figure 14-22. Compensation Results

**c** If an error occurs during the compensation run, a **(**) warning icon displays in the *Compensation Results* window. A description of the error and how to resolve it also display.

In the following example, the survey measurement must be changed to zero to apply no telluric correction and successfully run compensation. See *Uncompensating Test Point Inspections* (page 682) for information about how to apply *ForceZero* and *Exclude* to survey measurements.

	mpensa								<u> </u>	
1	0	Up Stream 01	1730 01.45-1_M	IBTX0257: 1432.00	00	Down Stream 01171	4 25.22-1_MBTX	0072: 18939.3	393	
a p,	review	Total Deadless	- (69) Camara	sated (66) Unmatch	- I Curla Durat	(0) I				-
26 11	TEVIEW	Total Keading	s (06) Compen	sated (00) Unmatch	ed Cycle Durat	ion (0) Invalid (2)				_
								Select All	🔶 Cle	
velud	ded read	ding(s) that are	not cycle time n	natched or invalid. Ch	eck reading(s)	to force to zero.		Select All	🔌 Cle	
_	ded read	ding(s) that are		natched or invalid. Ch Relative Milepost		to force to zero. On Date Time	Off Voltage		View	
_	Run		not cycle time n Compliance True	natched or invalid. Ch Relative Milepost 8355.000	eck reading(s) On Voltage 0		Off Voltage	Select All Off Date Time		ar A
1	Run 1	Validation	Compliance	Relative Milepost	On Voltage	On Date Time	-	Off Date Time	View	ar A
1	Run 1	Validation Invalid	Compliance True	Relative Milepost 8355.000	On Voltage	On Date Time	0	Off Date Time	View	ar A
1	Run 1	Validation Invalid	Compliance True	Relative Milepost 8355.000	On Voltage	On Date Time	0	Off Date Time	View	ar A
1	Run 1	Validation Invalid	Compliance True	Relative Milepost 8355.000	On Voltage	On Date Time	0	Off Date Time	View	ar A
1	Run 1	Validation Invalid	Compliance True	Relative Milepost 8355.000	On Voltage	On Date Time	0	Off Date Time	View	ar A
1	Run 1	Validation Invalid	Compliance True	Relative Milepost 8355.000	On Voltage	On Date Time	0	Off Date Time	View	ar A

Figure 14-23. Warning in Compensation Results

**d** When the compensation process completes, click **Preview** to view a graph of compensation results (Figure 14-24).

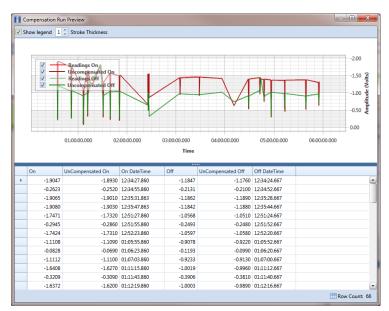


Figure 14-24. Compensation Run Preview

- **e** When you finish viewing the graph, click the Windows close button to close the graph and return to the *Compensation Results* window.
- **f** If you want to apply compensation results to the PCS Axis database, click **Save** in the *Compensation Results* window.

Clicking **S** Cancel cancels the compensation process. PCS Axis closes the window and returns to the *Telluric* workspace. Compensation results are also not applied to the PCS Axis database.

#### Reversing a Compensation Run for a Selected Survey Date

If you need to reverse (undo) one or more compensation runs for a selected survey date, use the *Maintenance* window available in the *Telluric* workspace to view a list of completed compensation runs available for uncompensation. After reversing a compensation run, the *Test Point Inspection* grid and associated *Detail* mini-grid update with uncompensated test point inspection readings for the selected pipeline segment.

Complete the following steps to reverse a compensation run for a selected survey date:

- Select the pipeline segment you want to work with in the Select ROWs window. Then click Save to close the window.
- 2 Open the *Telluric* workspace in CPDM. Click **Data Entry** > **Edit CPDM Data** > **Test Point** > **Inspection** > **Telluric** tab.
- 3 Locate the upstream and downstream SDL survey files associated with the selected pipeline segment by clicking the down arrow in the Survey Date field and selecting a survey date using a calendar. You can also type a survey date in the field using the format MM/DD/YYYY to indicate the month, day, and year. Then click Q Find (Figure 14-20, page 678).

A list of SDL survey files related to the entered survey date display in the *Stationary Surveys* group box of the *Telluric* workspace.

- 4 Click *P* Maintenance to open the *Maintenance* window (Figure 14-25, page 682).
- **5** If the *Compensation Run(s)* grid is not visible, click the **Compensation Run(s)** tab to view a list of compensation runs.
- 6 Click the check box associated with the compensation run you want to reverse. Then click **Save** to reverse (undo) the selected compensation run.

	Compensation Run(s)	Compensatio	n Requirements			
Sele	ect compensation run(s	s) to un-compensate	for (7/15/2014).			
					🏢 Select All   🤞	Clear A
	Ran By	Ran Date	UpStream Survey	DownStream Survey	Action	
	John.Smith	11/18/2014			ForceZero	l
$\checkmark$	John.Smith	11/18/2014	011730 01.45-1_MBTX0257	011714 25.22-1_MBTX0072	Normal	
					₩Row	( Count: 2

Figure 14-25. Maintenance

#### **Uncompensating Test Point Inspections**

If you want to exclude one or more test point inspections in a compensation run, or want to change the inspection reading to zero (0) for one or more test points, use the *Un-Compensated Inspections* window in the *Telluric* workspace to apply *ForceZero* or *Exclude* as needed.

*ForceZero* applies no telluric correction to the selected test point inspection(s). *Exclude* removes the selected test point inspection(s) from the compensation run.

Complete the following steps to uncompensate one or more test point inspections in a compensation run:

- Select the pipeline segment you want to work with in the Select ROWs window.
   Then click Save to close the window.
- 2 Open the *Telluric* workspace in CPDM. Click **Data Entry** > **Edit CPDM Data** > **Test Point** > **Inspection** > **Telluric** tab.

- 3 Locate the upstream and downstream SDL survey files associated with the selected pipeline segment by clicking the down arrow in the Survey Date field and selecting a survey date using a calendar. You can also type a survey date in the field using the format MM/DD/YYYY to indicate the month, day, and year. Then click Q Find (Figure 14-20, page 678).
- 4 Click Un-Compensated Inspections to open the Un-Compensated Inspections window. Then click the down arrow in the Action field and select ForceZero or Exclude (Figure 14-26).
- 5 Click the check box for each test point you want to uncompensate. Click **Save** to begin the uncompensate process or **Cancel** to close the window and return to the *Telluric* workspace.

Acti			Force the T	elluric Correction to Zero			
For	ceZero		*				
		841	Inspection Date		Structure P/S	lect All   🥏 Cles	ar A
	ROW Code and Pipe	Milepost 1432.000	7/15/2014 12:00:00 AM	Survey 2014 Annual Survey	Structure P/S	Structure IKF	1
							-
	LG123-A	2814.000	7/15/2014 12:00:00 AN				
	LG123-A	4207.000	7/15/2014 12:00:00 AN				
	LG123-A	5598.000	7/15/2014 12:00:00 AN				
	LG123-A	6983.000	7/15/2014 12:00:00 AN				
1	LG123-A	8355.000	7/15/2014 12:00:00 AM	1 2014 Annual Survey			4
	LG123-A	9720.000	7/15/2014 12:00:00 AN	2014 Annual Survey			
	LG123-A	11071.000	7/15/2014 12:00:00 AM	2014 Annual Survey			
	LG123-A	11093.000	7/15/2014 12:00:00 AN	1 2014 Annual Survey			
	LG123-A	12593.000	7/15/2014 12:00:00 AN	2014 Annual Survey			
	LG123-A	13948.000	7/15/2014 12:00:00 AM	2014 Annual Survey			
	LG123-A	15832.000	7/15/2014 12:00:00 AM	1 2014 Annual Survey			
	LG123-A	16630.000	7/15/2014 12:00:00 AM	1 2014 Annual Survey			
	LG123-A	17491.000	7/15/2014 12:00:00 AM	1 2014 Annual Survey			
	LG123-A	18730.000	7/15/2014 12:00:00 AM	2014 Annual Survey			
	LG123-A	18939.393	7/15/2014 12:00:00 AM	2014 Annual Survey			
-							
•						l	۲

Figure 14-26. Un-Compensated Inspections

# Using Telluric Compensation in ISM

When working with inspections in a close interval (CI) continuous survey that require telluric compensation, use the *Telluric* workspace in *Edit ISM Data* to perform compensation and other related functions.

After selecting a CI continuous survey to work with, inspection records associated with the selected CI survey and pipeline segment display in the data grid of *Edit ISM Data*. Inspection records eligible for telluric compensation display in the *Telluric* workspace based on your selection of SDL survey files (upstream/downstream data set) associated with the selected CI survey.

Topics in this section include those in the following list:

- Viewing CI Inspections Eligible for Compensation (page 685)
- Changing the Compensation Requirement (page 687)
- Running Telluric Compensation (page 689)
- *Reversing a Compensation Run in ISM* (page 693)
- Uncompensating CI Test Point Inspections (page 694)

**Note:** Several options are available for customizing a grid layout and sorting order, as well as applying data filters that allow you to work with a subset of CI inspection records. For information about how to apply data filters, refer to *Viewing Records in a Grid* (page 249). See *Working with Themes and Filter Groups* (page 316) for information about customizing the grid layout and sorting order.

#### Viewing CI Inspections Eligible for Compensation

Complete the following steps to view close interval (CI) inspections eligible for telluric compensation in ISM:

 Select one or more pipeline segments to work with in the Select ROWs window. Click Save to close the window (Figure 14-27).

Choose pipeline segments with the option labeled *Telluric Compensation Required* enabled in *Edit ROW Detail*. See *Adding a Pipeline Information Record* (page 151) for more information if needed.

Select ROWs		
	🖉 Cle	ar   😋 Add   🏋 Delete   🥜 Rename
O Find Only O S	elect () Clear Selections and Select	Expand Displa
Find ROW Code	<ul> <li>Enter Search Text</li> </ul>	× 00 Find
🔺 📃 🏠 Ny Pip	eline Company	
🕨 🔲 📔 Ny I	Pipeline Folder	
🔺 📃 🛛 🔚 Nort	theast Region	
4 🛄 🗁 I	.6123	
1	LG123-A ; NE Paddock #1	
	LG123-B ; NE Paddock #2	
	LG123-C ; NE Paddock #3	
	LG123-D ; NE Paddock #4	
	LG123-E ; NE Paddock #5	
ا 📄 🕨 ا	.6234	
) 🕨 🔲 🛄 I	.6567	
🕨 📄 📔 Nort	thwest Region	
🕨 🔲 📔 Sout	theast Region	
🕨 🔲 📔 Sout	thwest Region	
		🛛 🗄 Save 🛛 🚱 Cance

Figure 14-27. Select ROWs

- 2 If the ISM module is not open, click **Modules** > **Indirect Survey Manager** (**ISM**).
- 3 Open the ISM data grid. Click **Data Entry** > **Edit ISM Data** (Figure 14-28).

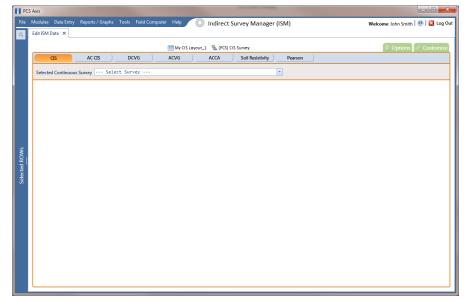


Figure 14-28. Edit ISM Data

- 4 Click the **CIS** button **CIS** to work with close interval survey data.
- 5 Select a survey folder with CI inspection readings you want to run telluric compensation. Click the down arrow in the field Selected Continuous Survey and select a survey folder in the selection list (Figure 14-29).

Inspection records eligible for compensation include voltage measurements in the fields labeled *CIS Structure P/S Uncompensated* and *CIS Structure IRF Uncompensated* (Figure 14-29).

_	SM Data ×	Reports / Graphs 1	ools Field Compute	r Help 🔘 Indirect Su	rvey Manager (I	SM)	Welcome J	ohn Smith   🕑   🔀
				1 My CI Survey Layout_1 🛚 🛚 My CI Survey Layout_1	] CIS Survey		\$	Options 🦨 Custo
	CIS	AC CIS	DCVG	ACVG ACCA	Soil Resistivity	Pearson		
		Survey LG123-A 8	(27/2013 No. CT	Survey_27aug2013		1		
Sei	ected Continuous :	Survey CO125-A e	/2//2015 Ny CI	201.46A-51.90B5012				
61	Find 🛛 🖉 Tell	uric				📴 Survey Maintenan	ice 🛛 🗘 Add 🛛 🗡 Dele	ete   🧐 Refresh   😸
	Series	Station Number	CIS Structure P/S	CIS Structure P/S Uncompensated	CIS Structure IRF	CIS Structure IRF Uncompensated	CI Compensated On	CI Compensated Off
1		3.946		-1.205		-0.951	-1.176	-0.928
		3.954		-1.213		-0.968	-1.181	-0.935
		3.959		-1.223		-0.964	-1.179	-0.933
		3.964		-1.180		-0.919	-1.174	-0.925
		3.969		-1.189		-0.946	-1.173	-0.926
		3.974		-1.238		-0.996	-1.174	-0.925
		3.979		-1.236		-0.985	-1.169	-0.923
		3.984		-1.161		-0.915	-1.171	-0.928
		3.989		-1.175		-0.935	-1.169	-0.923
		3.994		-1.174		-0.930	-1.164	-0.922
		3.999		-1.185		-0.937	-1.165	-0.922
		4.004		-1.185		-0.943	-1.163	-0.921
		4.009		-1.113		-0.867	-1.162	-0.926
		4.014		-1.101		-0.857	-1.160	-0.924
		4.019		-1.095		-0.854	-1.157	-0.924
		4.020		-1.149		-0.893	-1.174	-0.928
		4.024		-1.115		-0.882	-1.156	-0.920
		4.030		-1.157		-0.922	-1.168	-0.923
		4.034		-1.126		-0.894	-1.153	-0.921
		4.035		-1.188		-0.940	-1.173	-0.925
		4.039		-1.124		-0.890	-1.150	-0.920
		4.040		-1.175		-0.923	-1.166	
		4.044		-1.114		-0.878	-1.146	
4								L.

Figure 14-29. Edit ISM Data

#### Changing the Compensation Requirement

If you want to change the compensation requirement for a pipeline segment and related close interval (CI) inspections, use the *Maintenance* window available in the *Telluric* workspace to apply *Add Requirement* or *Remove Requirement* as needed.

**IMPORTANT:** Changing the compensation requirement must occur prior to running telluric compensation for a pipeline segment and associated CI inspections. The compensation requirement cannot be changed once telluric compensation has completed and results have been applied to the PCS Axis database.

To change the compensation requirement for a pipeline segment and associated CI inspections, follow these steps:

- Select the pipeline segment you want to work with in the Select ROWs window.
   Then click Save to close the window (Figure 14-27, page 685).
- 2 Open the CIS data grid in Edit ISM Data. Click Data Entry > Edit ISM Data > CIS button CIS.
- **3** Select a survey folder with survey readings you want to change the compensation requirement. Click the down arrow in the field **Selected Continuous Survey** and select a survey folder in the selection list (Figure 14-29, page 686).
- 4 Click the **Telluric** tab **Telluric** to open the *Telluric* workspace (Figure 14-30).

	ISM Data 🗙								
_				🔠 My CI Survey L	ayout_1 🛛 📉 (PCS) Cl	IS Survey		\$	Options 🦨 Custo
	CIS	AC CIS	DCVG	ACVG	ACCA	oil Resistivity	Pearson		
Se	elected Continuo	us Survey LG123-A	8/27/2013 My C	I Survey_27aug20	813				
1	Find 🛃	elluric					Survey Maintenar	nce 🛛 🔿 Add 🛛 🗙 Del	ete 🛛 🕞 Refresh 🛛 😫
Sta	ationary Survey	s			Select A	II   🧈 Clear All			
	LG123-A		8/27/2013	2.190	<u>Info</u>	Edit		🥥 U	n-Compensated Inspe
	LG123-A		8/27/2013	2.240	Info	Edit		2 N	faintenance
	LG123-A	SDLC0227	8/27/2013	6.350	Info	Edit			
H	LG123-A	SDLD0206	8/27/2013	7.720	Info	Edit			
	F	3.946			Uncompensated C		CIS Structure IRF Uncompensated -0.951		
	<u>۲</u>								
		3.954			-1.213 -1.223		-0.968		
		3.964			-1.180		-0.919		
		3,969			-1.189		-0.946		
		3.974			-1.238		-0.996		
		3.979			-1.236		-0.985	-1.169	-0.92
		3.984			-1.161		-0.915	-1.171	-0.92
		3.989			-1.175		-0.935	-1.169	-0.92
		3.994			-1.174		-0.930		
		3.999			-1.185		-0.937		
		4.004			-1.185		-0.943		
		4.009			-1.113		-0.867		
		4.014			-1.101 -1.095		-0.857		
		4.019							

Figure 14-30. ISM Telluric Workspace

- 5 Click *P* Maintenance to open the *Maintenance* window and then click the Compensation Requirements tab (Figure 14-31).
- 6 Click the down arrow in the field **ROW Code and Pipe** and select a pipeline segment in the selection list to view related CI inspections in the grid.
- **7** Complete one of the following steps:
  - a To add the compensation requirement to the selected pipeline segment, click
     Add Requirement.
  - **b** To remove the compensation requirement from the selected pipeline segment, click **S Remove Requirement**.

After adding or removing the compensation requirement, PCS Axis closes the *Maintenance* window and returns to the *Telluric* workspace.

**c** If you want to close the window without changing the current compensation requirement, click **O Cancel** to return to the *Telluric* workspace.

elect	a ROW to c	hange the compensat	ion requirement for u	n-compensated readings on (8/27/20	)13).		
ROW	Code and P	ipe LG123-A		•			_
	Series	Station Number	CIS Structure P/S	CIS Structure P/S Uncompensated	CIS Structure IRF	CIS Structure IRF Uncompensated	С
		3.946		-1.205		-0.951	_
		3.954		-1.213		-0.968	
		3.959		-1.223		-0.964	
		3.964		-1.180		-0.919	
		3.969		-1.189		-0.946	
		3.974		-1.238		-0.996	
		3.979		-1.236		-0.985	
		3.984		-1.161		-0.915	
		3.989		-1.175		-0.935	
		3.994		-1.174		-0.930	)
		3.999		-1.185		-0.937	
		4.004		-1.185		-0.943	
		4.009		-1.113		-0.867	
		4.014		-1.101		-0.857	
		4.019		-1.095		-0.854	ļ.
		4.020		-1.149		-0.893	
		4.024		-1.115		-0.882	
		4.030		-1.157		-0.922	
◀							►

Figure 14-31. Maintenance

#### **Running Telluric Compensation**

Running telluric compensation takes place in the *Telluric* workspace of the *Edit ISM Data* grid. After receiving Allegro survey files and importing and evaluating SDL survey files, use the information in this section to run telluric compensation for inspections in a close interval (CI) survey that include telluric effects and require compensation.

Complete the following steps:

- Select the pipeline segment you want to work with in the Select ROWs window. Then click Save to close the window (Figure 14-27, page 685).
- 2 Open the CIS data grid in Edit ISM Data. Click Data Entry > Edit ISM Data > CIS button CIS.
- **3** Select a survey folder with CI inspections that you want to run compensation. Click the down arrow in the field **Selected Continuous Survey** and select a CI survey folder in the selection list (Figure 14-29, page 686).
- 4 Click the **Telluric** tab **Telluric** to open the *Telluric* workspace (Figure 14-32, page 690).

A list of stationary data logger (SDL) survey files related to the selected pipeline segment and CI survey display in the *Stationary Surveys* group box of the *Telluric* workspace (Figure 14-32, page 690).

- 5 If you want to view a telluric summary of an SDL survey listed in the Stationary Surveys group box, click the Info link to open the Stationary Telluric Info window. For a description of this window, see View Telluric Summary Information (page 662).
- 6 If you want to view voltage measurements associated with an SDL survey listed in the *Stationary Surveys* group box, click the **Edit** link to open the *Stationary Survey Maintenance* window. A description of this window is available in the section entitled *Using Stationary Survey Maintenance* (page 654).

				I My CI Survey Layout_1 🛚 🗏 [PCS] (	CIS Survey			Options 🦨 Custo
	CIS	AC CIS	DCVG		Soil Resistivity	Pearson		
Se	lected Continuous	Survey LG123-A	8/27/2013 My CJ	Survey_27aug2013	-			
6	🛚 Find 🔀 Tel	luric				🗟 Survey Maintenan	ce 🕕 Add 🔀 Dele	ete 🕞 Refresh 🖢
	tionary Surveys			Select /	All   🥩 Clear All			
	LG123-A	SDLA0276	8/27/2013	2.190 Info			🥥 Ur	n-Compensated Inspe
	LG123-A	SDLB0171	8/27/2013	2.240 Info			1 M	laintenance
	LG123-A LG123-A	SDLC0227 SDLD0206	8/27/2013 8/27/2013	6.350 Info 7.720 Info			-	
	LGI23-A	SDLD0206	8/27/2013	1.120 Into	Eall			
7	Series	Station Number     3.946	r CIS Structure P/S	CIS Structure P/S Uncompensated 0 -1.205	IS Structure IRF	CIS Structure IRF Uncompensated -0.951	CI Compensated On -1.176	
	_	3.954		-1.213		-0.968	-1.181	
		3.959		-1.223		-0.964	-1.179	-0.93
		3.964		-1.180		-0.919	-1.174	-0.92
		3.969		-1.189		-0.946	-1.173	
		3.974		-1.238		-0.996	-1.174	
		3.979		-1.236		-0.985	-1.169	
		3.984		-1.161 -1.175		-0.915	-1.171 -1.169	
		3,994		-1.175		-0.930	-1.169	
		3,999		-1.185		-0.937	-1.165	
		4.004		-1.185		-0.943	-1.163	
		4.009		-1.113		-0.867	-1.162	-0.92
				-1.101		-0.857	-1.160	
		4.014						

Figure 14-32. Telluric Workspace

- 7 To run telluric compensation, follow these steps:
  - **a** Select the SDL upstream/downstream data set pair to use in the compensation run. Click the check box associated with the upstream and downstream SDL survey files (Figure 14-33).

Edit	t ISM Data 🗙	y Reports / Graphs			Indirec	t Survey	y Manager	(13101)		weicome	Iohn Smith   🤨   🔀
				📰 My CI Su	rvey Layout_1 🛛	[PCS] CIS	Survey			¢	Options 🦨 Custo
	CIS	AC CIS	DCVG	ACVG	ACCA	Soi	il Resistivity	Pearson			
S	elected Continuo	us Survey LG123-A	8/27/2013 My	I Survey_27	aug2013			-			
1	👀 Find 🔀 T	elluric							🗟 Survey Maintena	nce 🛛 🔿 Add 🛛 🗙 Dele	zte 🛛 🕞 Refresh 🛛 😖
Sta	ationary Survey	/s				Select All	🛛 🥏 Clear All				
V		SDLA0276	8/27/2013	2.190		Info	Edit			🥥 U	n-Compensated Inspec
	LG123-A	SDLB0171 SDLC0227	8/27/2013 8/27/2013	2.240 6.350		Info Info	Edit Edit			N فتر ا	laintenance
1		SDLD0206	8/27/2013	7.720		Info	Edit				
C	Run										
	Series	Station Numb	er CIS Structure P/S	CIS Structu	ire P/S Uncompen	sated CIS	Structure IRF	CIS Struct	ure IRF Uncompensated	CI Compensated On	CI Compensated Off
	1	- 3.946				1.205			-0.951	-1.176	-0.928
		3.954				1.213			-0.968		
		3.959				1.223			-0.964		
		3.964				1.180			-0.919		
		3.969				1.189			-0.946		
		3.974				1.238			-0.996		
		3.979				1.236			-0.985		
		3.984				1.161			-0.915		
		3.989				1.175			-0.935		
		3.994				1.174			-0.930		
		3.999				1.185			-0.937		
		4.004				1.185			-0.943		
		4.009				1.113			-0.867		
		4.014				-1.101			-0.857		
		4.019				-1.095			-0.854	-1.157	-0.924

Figure 14-33. Telluric Workspace

**b** Click **() Run** to begin the compensation process and open the *Compensation Results* window (Figure 14-34).

Compens	ation Results						×
1 🔾	Up Stream	SDLA0276:	2.190	Down Stream	SDLA0206:	7.720	<b></b>
	Total Readings	(958) Compensat	ed (0) Unmatch	ed Cycle Duration (0) Invalid	(0)		
				,			
						🛛 🖪 Sav	re 🕼 Cancel

Figure 14-34. Compensation Results

**c** If an error occurs during the compensation run, a **(**) warning icon displays in the *Compensation Results* window. A description of the error and how to resolve it also display.

In the following example, the survey measurement must be changed to zero to apply no telluric correction and successfully run compensation (Figure 14-35). See *Uncompensating Test Point Inspections* (page 682) for information about how to apply *ForceZero* and *Exclude* to survey measurements.

1	0	Up Stream	SDLA0276:	2.190	Down	Stream	SDLA0206:	7.720	
9	Previe	Total Reading	s (958) Compens	ated (0) Unn	natched Cycle Duration	(958) Invalio	d (0)		
							18	Select All	I 🧈 Clear
	ıded r	reading(s) that are	not cycle time mat	tched or invali	d. Check reading(s) to i	force to zero.	10	Select All	🧈 Clear
xclu			-		d. Check reading(s) to t			Select All	🥩 Clear
	Run	Validation	not cycle time mat Station Number 3.946	On Voltage	On Date Time	Off Voltage	Off Date Time	View	🥩 Clear
Exclu	Run 1	Validation Cycle Duration	Station Number	On Voltage -1.205		Off Voltage -0.951		View 5 P <u>View</u>	🧼 Clear
xclu	Run 1	Validation	Station Number 3.946	On Voltage -1.205 -1.213	On Date Time 8/27/2013 4:30:19 P	Off Voltage -0.951 -0.968	Off Date Time 8/27/2013 4:30:10	View 5 P <u>View</u> 8 P <u>View</u>	🤌 Clear
xclu	Run 1 1	Validation Cycle Duration Cycle Duration	Station Number 3.946 3.954	On Voltage -1.205 -1.213 -1.223	On Date Time 8/27/2013 4:30:19 P 8/27/2013 4:28:31 P	Off Voltage -0.951 -0.968 -0.964	Off Date Time 8/27/2013 4:30:10 8/27/2013 4:28:20	View 5 P View 8 P View 5 P View	🧼 Clear
ixclu	Run 1 1 1 1	Validation Cycle Duration Cycle Duration Cycle Duration	Station Number 3.946 3.954 3.959	On Voltage -1.205 -1.213 -1.223 -1.18	On Date Time 8/27/2013 4:30:19 P 8/27/2013 4:28:31 P 8/27/2013 4:28:19 P	Off Voltage -0.951 -0.968 -0.964 -0.919	Off Date Time 8/27/2013 4:30:10 8/27/2013 4:28:20 8/27/2013 4:28:10	View           5 P         View           8 P         View           5 P         View           8 P         View	Clear
ixclu	Run 1 1 1 1 1	Validation Cycle Duration Cycle Duration Cycle Duration Cycle Duration	Station Number 3.946 3.954 3.959 3.964	On Voltage -1.205 -1.213 -1.223 -1.18 -1.189	On Date Time 8/27/2013 4:30:19 P 8/27/2013 4:28:31 P 8/27/2013 4:28:19 P 8/27/2013 4:27:51 P	Off Voltage -0.951 -0.968 -0.964 -0.919 -0.946	Off Date Time 8/27/2013 4:30:10 8/27/2013 4:28:20 8/27/2013 4:28:10 8/27/2013 4:27:40	View           5 P         View           8 P         View           5 P         View           8 P         View           8 P         View           8 P         View           8 P         View	Clear
	Run 1 1 1 1 1 1 1 1 1	Validation Cycle Duration Cycle Duration Cycle Duration Cycle Duration Cycle Duration	Station Number 3.946 3.954 3.959 3.964 3.969	On Voltage -1.205 -1.213 -1.223 -1.18 -1.189 -1.238	On Date Time 8/27/2013 4:30:19 P 8/27/2013 4:28:31 P 8/27/2013 4:28:19 P 8/27/2013 4:27:51 P 8/27/2013 4:27:31 P	Off Voltage -0.951 -0.968 -0.964 -0.919 -0.946 -0.996	Off Date Time 8/27/2013 4:30:14 8/27/2013 4:28:24 8/27/2013 4:28:14 8/27/2013 4:27:44 8/27/2013 4:27:24	View           5 P         View           8 P         View           8 P         View           8 P         View           8 P         View           5 F         View	

Figure 14-35. Warning in Compensation Results

**d** When the compensation process completes, click **Preview** to view a graph of compensation results (Figure 14-36).

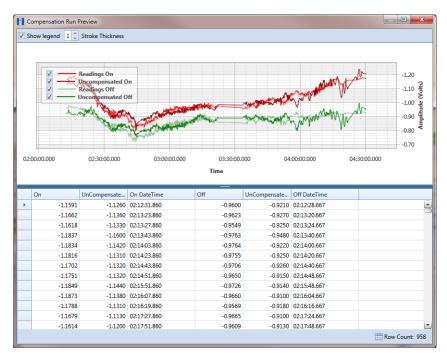


Figure 14-36. Compensation Run Preview

- **e** When you finish viewing the graph, click the Windows close button to close the graph and return to the *Compensation Results* window.
- **f** If you want to apply compensation results to the PCS Axis database, click**Save** in the *Compensation Results* window.

Clicking **O Cancel** cancels the compensation process. PCS Axis closes the window and returns to the *Telluric* workspace. Compensation results are not applied to the PCS Axis database.

#### Reversing a Compensation Run in ISM

If you want to reverse (undo) one or more compensation runs in ISM, use the *Maintenance* window available in the *Telluric* workspace to view a list of completed compensation runs available for uncompensation. After reversing a compensation run, the data grid in *Edit ISM Data* updates with uncompensated close interval (CI) inspections.

Complete the following steps to reverse a compensation run in ISM:

- Select the pipeline segment you want to work with in the Select ROWs window. Then click Save to close the window.
- 2 Open the CIS data grid in Edit ISM Data. Click Data Entry > Edit ISM Data > CIS button CIS.
- 3 Select a survey folder with CI inspections you want to reverse (undo) a compensation run. Click the down arrow in the Selected Continuous Survey field and select a survey folder in the selection list (Figure 14-29, page 686).
- 4 Click the **Telluric** tab **Telluric** to open the *Telluric* workspace (Figure 14-30, page 687).
- 5 Click *P* Maintenance to open the *Maintenance* window (Figure 14-37, page 693).
- 6 If the *Compensation Run(s)* grid is not visible, click the **Compensation Run(s)** tab to view a list of compensation runs.
- Click the check box associated with the compensation run you want to reverse.
   Then click Save to reverse (undo) the selected compensation run.

	ompensation Run(s	) Compensa	tion Requirements			
Select	compensation run	(s) to un-compensa	te for (8/27/2013).			
						🏢 Select All   🧈 Clear /
1	Ran By	Ran Date	UpStream Survey	DownStream Survey	Action	
<b>Z</b> ▶.	John.Smith	11/19/2014	SDLA0171	SDLA0227	Normal	

Figure 14-37. Maintenance

#### **Uncompensating CI Test Point Inspections**

If you want to exclude one or more close interval (CI) inspections in a compensation run, or want to change the telluric compensation to zero (0) for one or more CI inspections, use the *Un-Compensated Inspections* window in the *Telluric* workspace to apply *ForceZero* or *Exclude* as needed.

*ForceZero* applies no telluric correction to the selected CI inspection(s). *Exclude* removes the selected CI inspection(s) from the compensation run.

Complete the following steps to uncompensate one or more CI inspections in a compensation run:

- Select the pipeline segment you want to work with in the Select ROWs window. Then click Save to close the window.
- 2 Open the CIS data grid in Edit ISM Data. Click Data Entry > Edit ISM Data > CIS button CIS.
- 3 Select a survey folder with CI inspections you want to reverse (undo) a compensation run. Click the down arrow in the Selected Continuous Survey field and select a survey folder in the selection list (Figure 14-29, page 686).
- 4 Click the **Telluric** tab **Telluric** to open the *Telluric* workspace (Figure 14-30, page 687).
- 5 Click Un-Compensated Inspections to open the Un-Compensated Inspections window. Then click the down arrow in the Action field and select
   ForceZero or Exclude (Figure 14-38, page 695).
- 6 Click the check box for each CI inspection you want to uncompensate. Click **Save** to begin the uncompensate process or **Cancel** to close the window and return to the *Telluric* workspace.

Action Exclude			Exclude from Telluric Con	npensation		
					🏢 Select All   🥩 C	lear
Series	Station Number	CIS Structure P/S	CIS Structure P/S Uncompensated	CIS Structure IRF	CIS Structure IRF Uncompensated	CIC
	3.946		-1.205		-0.951	
	3.954		-1.213		-0.968	
	3.959		-1.223		-0.964	
1	3.964		-1.180		-0.919	
	3.969		-1.189		-0.946	
	3.974		-1.238		-0.996	
	3.979		-1.236		-0.985	
7	3.984		-1.161		-0.915	
	3.989		-1.175		-0.935	
1	3.994		-1.174		-0.930	
	3.999		-1.185		-0.937	
	4.004		-1.185		-0.943	
	4.009		-1.113		-0.867	
	4.014		-1.101		-0.857	
	4.019		-1.095		-0.854	
7	4.020		-1.149		-0.893	
	4.024		-1.115		-0.882	
	4.030		-1.157		-0.922	
						Þ

Figure 14-38. Un-Compensated Inspections

# Notes

# 15

# **Managing Themes**

Information in this chapter explains how to work with facility type themes in *Facility Type Themes Management* and how to manage all themes in the system using *Themes Management*. The information is intended for users with *SysAdmin* user permissions unless noted otherwise.

Topics in this chapter include those in the following list:

- Working with a Facility Type Theme
- Managing Themes (page 703)

# Working with a Facility Type Theme

A facility type theme is a named set of one or more facility types, such as test point, rectifier, valve, and atmospheric facility types. Certain features in PCS Axis require you to select a facility type theme to complete an operation, such as selecting a facility type theme when working in *Define Routes* (Data Entry > Define Routes) or *Field Computer Send* (Field Computer > Send).

Two types of facility type themes are available for use. They include *installed* and *addition* facility type themes. An installed facility type theme is one that has been installed during the PCS Axis software installation. A facility type theme addition is one that you create.

Information in this section explains how to work with a facility type theme in *Facility Type Themes Management*. Topics include those in the following list:

- Editing an Installed Facility Type Theme (page 698)
- Adding a Facility Type Theme Addition (page 699)
- Editing a Facility Type Theme Addition (page 702)

## Editing an Installed Facility Type Theme

An installed facility type theme includes [PCS] in the name of the theme, such as **©** [PCS] **Rectifier Survey**. The procedure in this section explains how to complete the following tasks to edit an installed facility type theme:

- add a facility type
- remove a facility type
- revert an installed facility type theme

To edit an installed facility type theme, follow these steps:

- 1 Click **Tools** > **Facility Type Themes** to open the *Facility Type Themes* window (Figure 15-1).
- 2 Click the down arrow in **Select Facility Type Theme** and select a PCS Axis installed theme, such as **(PCS)** P/S Survey.

NCS Axis	
Modules Data Entry Reports / Graphs Tools Field Computer Help 🛛 💮 PCS Axis	Welcome John Smith   😣   🔀 Lo
cility Type Themes ×	
🔛 Save   🔿 Add   🏋 Delete   🗠 Revert   🛞 Cancel	
Select Facility Type Theme	
😵 [PCS] P/S Survey 🔹 📄 Select All 🖉 Clear All	
acility Types	
CPDM ISM VM ACM ICM LSM	
CIS     Valve     Atmospheric     Coupon     Leak Survey     ACCIS     ACCIS	
Foreign Bond     DCVG     Probe	
Galvanic Anode ACVG	
Tank ACCA	
Soil Resistivity	

Figure 15-1. Facility Type Themes

- **3** To add one or more facility types in an installed theme:
  - Click the check box for each facility type you want to add, then click each save.
     A check mark inside a check box indicates a selection (Figure 15-1).
- 4 To remove one or more facility types in an installed theme:
  - Click the check box to clear the check mark for each facility type you want to remove. Click Save to save changes.
- **5** To revert a facility type theme and restore settings prior to editing:
  - Click Severt, then click Ves when the Confirm Revert message displays (Figure 15-2).

Con	firm Revert
	Are you sure you want to revert '[PCS] P/S Survey'?
	🖋 Yes 🛛 🔀 No

Figure 15-2. Confirm Revert

### Adding a Facility Type Theme Addition

To add a facility type theme addition, follow these steps:

1 If the *Facility Type Themes* window is not open, click **Tools** > **Facility Type Themes** (Figure 15-3).

CS Axis			
Modules Data Entry Reports / Grap	hs Tools Field Computer Help	🔇 PCS Axis	Welcome John Smith   🕹   🔀 L
ility Type Themes 🗙			
	💾 Save   🗘 Add   🤉	📉 Delete   🖘 Revert   🛞 Cancel	
elect Facility Type Theme			
[PCS] All Facility Types cility Types	*	📔 Select All 🛛 🥔 Clear All	
		CM LSM	
CPDM ISM Test Point CIS	VM ACM IC Valve Atmospheric Coupe		
Rectifier AC CIS	Sampl		
🖉 Foreign Bond 🛛 📝 DCVG	🗹 Probe		
Galvanic Anode 🗹 ACVG	🗹 Inhibit	tor Injector	
Z Tank Z ACCA Z Soil Resistivity			
Pearson			

Figure 15-3. Facility Type Themes Management

- 2 Click 🛟 Add to open the New Facility Type Theme dialog box (Figure 15-4).
- **3** Type a name for the new theme in the field **Enter Theme Name**.

New Facility Type Theme	×
Enter Theme Name:	
My Facility Type Theme_1	
Public 🗹 Copy Content	
Copy Facility Types From:	
[PCS] All Facility Types	-
Facility Types In Selected Theme:	
Test Point	
Rectifier	
Foreign Bond	
Galvanic Anode	
Tank	
CIS	
AC CIS	
DCVG	
ACVG	
ACCA	
Soil Resistivity	
Pearson	
Valve	
Atmospheric	
Coupon	
Samples	
Probe	
Inhibitor Injector	
Leak Survey	
8	Save   🚳 Cancel

Figure 15-4. New Facility Type Theme

**4** Select the **Public** check box if you want the new theme available to all PCS Axis users.

When a theme is not public, it is a private theme. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

- **5** Click the down arrow in **Copy Facility Types From** and select an existing facility type theme with facility types you want to copy to the new theme.
- 6 Click 💾 Save to save changes and close the dialog box.
- 7 To add one or more facility types in the new theme:
  - Click the check box for each facility type you want to add.

Clicking **Select All** adds all facility types in the new theme. A check mark inside a check box indicates a selection (Figure 15-5, page 701).

- **8** To remove one or more facility types from the new theme:
  - Click the check box to clear the check mark for each facility type you want to remove.

Clicking 🥏 Clear All removes all facility types in the new theme.

9 Click 💾 Save to save changes.

The facility type theme is now available for selection in *Define Routes* (page 381) and *Field Computer Send* (page 595).

🚹 PCS Axis	_ D <b>_ X</b>
File Modules Data Entry Reports / Graphs Tools Field Computer Help 💮 PCS Axis Welcome	ohn Smith   🥶   🔀 Log Out
Facility Type Themes ×	
🛛 🖸 Save 🗠 Add 🔀 Delete 🗠 Revert 🚳 Cancel	
Select Facility Type Theme	
😵 My Facility Type Theme_1 🔹 👘 📰 Select All	
Facility Types	
CPDM ISM VM ACM ICM LSM	
Test Point     CIS     Valve     Atmospheric     Coupon     Leak Survey     Rectifier     AC CIS	
Ac C3     Samples     Samples     CVG     Probe	
Galvanic Anode ACVG	
Tank ACCA Soil Resistivity	
Jon Residunty     Person	

Figure 15-5. Facility Types

# Editing a Facility Type Theme Addition

The following procedure describes how to add and remove facility types in a facility type theme addition and how to delete a facility type theme addition.

Complete the following steps:

- 1 If the *Facility Type Themes* window is not open, click **Tools** > **Facility Type Themes** (Figure 15-6).
- 2 Click the down arrow in **Select Facility Type Theme** and select a facility type theme addition.

PCS Axis		
ie Modules Data Entry Reports / Graphs Tools	Field Computer Help 😯 PCS Axis	Welcome John Smith   😢   🔀 Log
acility Type Themes 🗙		
	💾 Save   🔿 Add   🗡 Delete   🗠 Revert   🚳 Cance	
Select Facility Type Theme		
My Facility Type Theme_1	🔹 🔲 Select All   🧈 Clear Al	
Facility Types		-
CPDM ISM VM	ACM ICM LSM LSM LsM LsA Survey	
Rectifier AC CIS	Samples	
Every Foreign Bond DCVG	Probe	
Galvanic Anode ACVG	🛄 Inhibitor Injector	
Soil Resistivity		
Pearson		

Figure 15-6. Facility Type Themes Management

- **3** To add one or more facility types:
  - Click the check box for each facility type you want to add. Clicking Select
     All adds all facility types. A check mark inside a check box indicates a selection.
     Click Save to save changes.
- 4 To remove one or more facility types:
  - Click the check box to clear the check mark for each facility type you want to remove. Clicking Clear All clears all selections. Click Save to save changes.
- **5** To revert a facility type theme and restore settings prior to editing:
  - Click a Revert, then click Ves when the Confirm Revert message displays.
- 6 To delete a facility type theme addition:
  - Click X Delete and then click Yes when the Confirm Delete message opens.

# Managing Themes

*Themes Management* allows you to perform the following tasks for any PCS Axis installed and user-created theme in the system:

- change the *Based On* method for working with facility records
- rename a theme
- change a theme from *Public* to *Private* and vice versa
- assign a *Private* theme to a user
- delete a theme

To manage themes in the system, follow these steps:

 Click Tools > Themes Management to open the *Themes Management* window (Figure 15-7).

s Management 🗙				
ng Reports Field Computer				
id Column Themes Grid Sorting Theme	s Form Edit Themes			
			E E	🐌 Import   📄 Export   🗡 Dele
Search				
Entity	Based On	Theme	▲ Is Public	Assigned To
Rectifier Information	Selected ROWs	[PCS] Rectifier Information	1	
CIS Continuous	Selected ROWs	CIS Inspections	1	
Coupon Inspection	Selected ROWs	Coupon Inspections	1	
Foreign Bond Information	Selected ROWs	Foreign Bond Information	1	
Foreign Bond Inspection	Selected ROWs	Foreign Bond Inspections	<b>V</b>	
Foreign Bond Maintenance	Selected ROWs	Foreign Bond Maintenance	$\checkmark$	
Galvanic Anode Information	Selected ROWs	Galvanic Anode Information	$\checkmark$	
Galvanic Anode Inspection	Selected ROWs	Galvanic Anode Inspections	$\checkmark$	
Galvanic Anode Maintenance	Selected ROWs	Galvanic Anode Maintenance	$\checkmark$	
Rectifier Inspection	Selected ROWs	My Rectifier Inspection Grid Layout_1		John Smith
Test Point Inspection	Selected ROWs	My Test Point Grid Layout_2		John Smith
Test Point Information	Selected ROWs	My Test Point Info Grid_1		John Smith
Test Point Inspection	Selected ROWs	My Test Point Inspection Layout_1		-
Pearson Continuous	Selected ROWs	Pearson Inspections	V	Bob Brown
Rectifier Information	Selected ROWs	Rectifier Information	1	John Smith
Rectifier Inspection	Selected ROWs	Rectifier Inspections	1	George Abney
Rectifier Maintenance	Selected ROWs	Rectifier Maintenance	$\checkmark$	Jack Smith
Tank Information	Selected ROWs	Tank Information	$\checkmark$	Jane Arnold
Tank Inspection	Selected ROWs	Tank Inspections	$\checkmark$	Joe Brown
Tank Maintenance	Selected ROWs	Tank Maintenance	$\checkmark$	John Smith
Test Point Information	Selected ROWs	Test Point Information	$\checkmark$	ů
Test Point Inspection	Selected ROWs	Test Point Inspections	$\checkmark$	
Test Point Maintenance	Selected ROWs	Test Point Maintenance	V	

Figure 15-7. Themes Management

- **2** Open a grid with the theme you want to edit. For example, to edit a grid layout theme, click the **Editing** tab and then the **Grid Column Themes** tab.
- **3** To edit the *Based On* method for a theme:
  - **a** Select a theme in the grid. For example, a *Test Point Inspections* theme addition is selected in Figure 15-7.
  - Select a mode for displaying facility records in a data entry grid, report, or survey file sent to the Allegro Field PC. Click the Based On field and then select one of the following options in the selection list: Selected ROWs, Route, Schedule, or Exported.
- 4 To rename a theme:
  - **a** Select a theme in the grid and then type a name in the **Theme** field.
- **5** To change a theme from *Public* to *Private*:
  - **a** Select a theme in the grid and then click the check box **Is Public** to remove the check mark.
  - **b** Assign the *Private* theme to a user. Click the **Assigned To** field and select a user name in the selection list.

- **6** To change a theme from *Private* to *Public*:
  - **a** Select a theme in the grid and then click the check box **Is Public** to place a check mark inside the check box. PCS Axis automatically removes the user name associated with the private theme in the *Assigned To* field.
- 7 To delete a theme, select a theme in the grid and then click **X Delete**. When the *Confirm Delete* message opens, click **Yes**.

# Notes


# 16

# Using Reports and Graphs

Information in this chapter explains how to generate and use PCS Axis reports and graphs. The information is intended for PCS Axis users with SysAdmin, User, and Read Only user permissions unless noted otherwise. Topics in this chapter include those in the following list:

- Considering the Value of PCS Axis Reports
- Overview of Reports (page 711)
- Quick Start (page 732)
- Adding a Custom Report (page 742)
- Working with Report Themes and Filter Groups (page 747)

# Considering the Value of PCS Axis Reports

PCS Axis reporting supports a variety of business applications. A few of these include managing data collection and data entry; reviewing the quality of cathodic protection (CP) data; providing information for an audit; and examining the effectiveness of a maintenance program.

The following list describes how you can use PCS Axis reporting in your business:

• Manage data collection and data entry.

Provide a printed copy of the *Survey Report* or *Data Collection Report* to technicians and vendors for recording CP data in the field. Update the PCS Axis database using completed reports submitted by technicians and vendors. Using PCS Axis reports in this manner allows you to verify consistent data collection and data entry in PCS Axis.

• Review data quality.

Use PCS Axis reporting to check the quality of survey data submitted by vendors. The quickest method is to view the *Survey Report* to determine which facilities have not been surveyed. Blank report fields indicate no survey data. If a vendor is using the Allegro Field PC to collect survey data, view the Field Computer Log to determine which facilities have not been surveyed.

Another method for checking the quality of survey data is to generate an *Exceptions* or *Comparisons* report. The *Exceptions* report allows you to compare surveys from previous years. Look for dramatic changes between surveys. You can also use the *Exceptions* report to check for data entry mistakes. This is helpful when range checking is not used or when personnel enter data using survey data recorded in a printed form. The *Comparisons* report compares multiple years of survey data. Use the *Comparisons* report to review changes in data and check for mistakes that might have been made during data entry.

• Provide information for an audit.

The *Survey Report* and facility *Inspections Graph* contain most of the information needed for an audit. When an audit requires more specific information, create a custom facility report using a columnar, summary, or graph report style.

To prepare for an audit, generate a *Delinquency Report* to help with creating a plan for bringing a pipeline system into compliance. Another method for preparing for an audit is to generate a *Survey Report* or any custom summary report to provide data for an audit. All other PCS Axis reports are also beneficial in providing information for an audit.

• Determine the effectiveness of a maintenance program.

PCS Axis reporting provides several reports and graphs that help with determining the effectiveness of a maintenance program. For example, use the *CPDM Rectifier Output History Report* to review the output of a rectifier over time. Look for changes in the rectifier output and any survey remarks or permanent comments that identify reasons for the change. Another method for determining a maintenance program's effectiveness is to generate the *Survey Report* and review the number of inspection readings for a particular survey period. Also look for changes among facilities.

# **Overview of Reports**

Information in this section provides an overview of the report types and styles available in PCS Axis, including a description of each PCS Axis report. Topics include those in the following list:

- Types of PCS Axis Reports
- Description of PCS Axis Reports (page 712)
- *Report Styles* (page 728)
- Understanding the Summary Drilldown Report (page 731)

### Types of PCS Axis Reports

The types of reports available in PCS Axis include those in the following list.

- *Compliance*: This type of report includes statistics, such as: number of test points; number of test points surveyed; missing test points; delinquent test points; and test points below criteria. Each one provides a concise data summary. Compliance reports are a key report typically used for auditing purposes.
- *Delinquency*: A delinquency report includes information about facilities that are currently delinquent or have been delinquent based on regulatory survey intervals. This type of report includes both interval violations and calendar year violations.
- Exceptions: Report includes survey data and other related information only for facilities that fail to meet certain criteria. For example, based on filter options selected in *Exception Filters*, the report can include facilities with missing structure readings; structure readings less negative than -0.85; or structure readings more negative than -2.0. This type of report is helpful when trying to quickly locate a problem in the maintenance of a pipeline.
- *Facility Schedules*: A list of facilities (such as test points, rectifiers, bonds, and galvanic anodes) that need to be surveyed based on the last survey date and target survey month.
- *Survey*: All data collected for each facility for a specific survey period.

## **Description of PCS Axis Reports**

PCS Axis organizes reports in categories, such as PCS Axis reports, module survey reports, facility type reports, pipeline reports, and continuous survey reports. Most reports in each of these categories are available for set up as a columnar, summary, or graph report style. If you frequently use one or more reports, you can designate these reports as a "favorite" to have them listed in the *Favorite Reports* menu for quicker access.

For a description and an example of the different types of PCS Axis reports, continue with the topics in the following list:

- PCS Axis Reports (page 712)
- Module Survey Report (page 716)
- Facility Type Reports (page 718)
- ROW Reports (page 722)
- Continuous Survey Reports (page 724)

#### **PCS** Axis Reports

Reports available for selection include those in the following list:

- PCS Axis Schedule Report (page 713)
- PCS Axis Delinquency Report (page 714)
- PCS Axis Inspections Graph (page 715)

#### PCS Axis Schedule Report

The *PCS Axis Schedule Report* lists facilities that require inspection using the schedule definition selected for the report. The schedule definition and a calculation based on the last inspection date and target survey month determine which facilities the report includes. Information is presented in a columnar report style in two formats: as a monthly calendar overview and as a detailed list (Figure 16-1).

			My Pip	eline Company								
			PCS Axis	Schedule Report								
		Selected RO	Ws: TRANSMISSI	DN; TRANSMISSIO	N SYSTEMS; T	-1401						
		Options: Based On: Schedu	ule: [PCS] Email In	stalled Schedule T	vpes from 1/1	L/2013 to 9/	/30/2013					
	Last											
ROW Code and Pipe	Milepost	Facility Type		Facility ID	Due Date from Schedule	Inspection Date From Schedule	Delinquent Date From Schedule	Time Between Surveys From Schedule	Days Until Delinquent			
Due Date from Schedule: 1/1		round type		identity to	ouncounc	Juliedule	ouncourc	Tromosticatic				
ROW Code: T-1401												
r-1401	0.000	Test Point			1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	0.001	Rectifier	R-200		1/1/2013	9/14/2006	12/14/2007	12 Months	-2491			
		Test Point			1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	1.000				1/1/2013	3/22/2006		12 Months	-2286			
	1.500				1/1/2013	3/22/2006		12 Months	-2286			
	1.627				1/1/2013	3/22/2006		12 Months	-2286			
	1.750				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	2.000				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	2.250				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	2.500				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	3.000				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	3.218				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	3.250				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	3.500				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	4.000				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	5.000				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	5.275				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	6.000	Foreign Bond			1/1/2013	7/12/2006	10/12/2007	12 Months	-2174			
		Test Point			1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	7.000				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	8.000				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	8.500				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	8.717				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	8.800	Rectifier	R-201		1/1/2013	9/13/2006	12/13/2007	12 Months	-2492			
		Test Point			1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	8.830				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	8.957				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	8.979				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	9.000				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	9.750				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
	10.000				1/1/2013	3/22/2006	6/22/2007	12 Months	-2286			
urveyor												
		-										
			9/24/2013	Page 1/5								

Figure 16-1. Example of PCS Axis Schedule Report

#### PCS Axis Delinquency Report

The *PCS Axis Delinquency Report* is a compliance report that identifies delinquent facilities based on a survey schedule. Information is presented in a columnar style with a list of delinquent facilities, missing and surveyed facilities, facilities not included in a survey, and facilities below criteria (Figure 16-2).

When the report is customized using the *Summary* report style, it is a statistical status report with a concise summary of the cathodic protection system. It includes the number of delinquent facilities, missing and surveyed facilities, and facilities below criteria. As an option, the report also provides drilldown functionality for further analysis of delinquent facilities.

The following example provides a description of how a facility is identified as delinquent and included in the report.

**Example:** A facility with a 12-month inspection cycle was initially inspected 1/15/2013. The facility became delinquent on 4/15/2014; this includes the 12-month inspection cycle plus the grace period. An inspection was recorded for the facility on 4/27/2014. If the report option labeled *Include only delinquent facilities* is not set, the facility is included in the Delinquency Report because it was delinquent from 4/15 to 4/26.

							My	Pipeline Co	npany					
	PCS Axis Delinquency Report Selected ROWs: TRANSMISSION; TRANSMISSION SYSTEMS; T-1401													
		Options:	Based On: S	elected ROW	/s; Selec	ted Facility T	ype Theme: [I	PCS] P/S Surv	ey; Include o	nly deliquent f	acilities; I	Date range	1/1/2013 to 9/30/2013	
ROW Co	ode and Pipe	Milepo	st	Facility Type		Facility ID	Delinquent Year	Number of Inspections per Calendar Year	First Read	Second Read	Violation Days	Delinquency Months Between Survey	Delinquent Notes	
Region: T	RANSMISSION				_									
Syst	tem: TRANSMI	SSION SYST	TEMS											
	ROW Code:	T-1401	ROW Name	: College Stati	ion to Au	stin								
T-1401		0.000	Test F	oint					03/22/2006	<09/30/2013>	2293	12	Interval Violation	
		0.001	Rectit	ier	R-200				09/14/2006	<09/30/2013>	2498	2	Interval Violation	
			Test	oint					03/22/2006	<09/30/2013>	2293		Interval Violation	
		1.000							03/22/2006	<09/30/2013>	2293		Interval Violation	
		1.500							03/22/2006	<09/30/2013>	2293		Interval Violation	
		1.627							03/22/2006	<09/30/2013>	2293		Interval Violation	
		1.750							03/22/2006	<09/30/2013>	2293		Interval Violation	
		2.000							03/22/2006	<09/30/2013> <09/30/2013>	2293 2293		Interval Violation Interval Violation	
		2.500							03/22/2006	<09/30/2013>	2293		Interval Violation	
		3.000							03/22/2006	<09/30/2013>	2293		Interval Violation	
		3.218							03/22/2006	<09/30/2013>	2293		Interval Violation	
		3.250							03/22/2006	<09/30/2013>	2293		Interval Violation	
		3.500							03/22/2006	<09/30/2013>	2293		Interval Violation	
		4.000							03/22/2006	<09/30/2013>	2293	12	Interval Violation	
		5.000							03/22/2006	<09/30/2013>	2293	12	Interval Violation	
		5.275							03/22/2006	<09/30/2013>	2293	12	Interval Violation	
		6.000	Forei	gn Bond					07/12/2006	<09/30/2013>	2181	12	Interval Violation	
			Test I	oint					03/22/2006	<09/30/2013>	2293	12	Interval Violation	
		7.000							03/22/2006	<09/30/2013>	2293		Interval Violation	
		8.000							03/22/2006	<09/30/2013>	2293		Interval Violation	
		8.500							03/22/2006	<09/30/2013>	2293		Interval Violation	
		8.717							03/22/2006	<09/30/2013>	2293		Interval Violation	
		8.800	Rectit Test F		R-201				09/13/2006 03/22/2006	<09/30/2013>	2499 2293		Interval Violation Interval Violation	
		8.830	lesti	om					03/22/2006	<09/30/2013> <09/30/2013>	2293		Interval Violation	
		8.957							03/22/2006	<09/30/2013>	2293		Interval Violation	
		8.979							03/22/2006	<09/30/2013>	2293		Interval Violation	
		9.000							03/22/2006	<09/30/2013>	2293		Interval Violation	
		9.750							03/22/2006	<09/30/2013>	2293		Interval Violation	
Surveyor														
an veyor														

Figure 16-2. Example of PCS Axis Delinquency Report

#### PCS Axis Inspections Graph

This report is a graph of inspection readings in a facility survey or survey readings in a continuous survey based on property settings in the *Graph* tab. Property settings include selection of one or more band fields, survey folders, and graph options. Band fields are equivalent to data fields in a data entry grid, such as *Structure P/S* in the *Edit CPDM Data* grid and *CIS Structure P/S* in the *Edit ISM Data* grid.

Areas of the graph with spikes indicate areas where survey data should be reviewed closely (Figure 16-3). Locations in the graph marked with the letter "C" indicate *Casing P/S*. Those marked with the letter "F" indicate *Foreign Bond*. Hovering the mouse over either of these captions displays a yellow tooltip with measurement data as shown in the next example. To toggle these and other captions on or off when viewing the graph, click *Options* and then click a check box labeled with the caption you want to toggle on or off, such as *Show Casing P/S*.

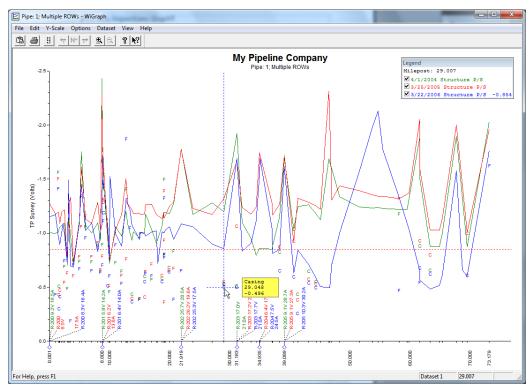


Figure 16-3. Example of PCS Axis Inspections Graph

#### **Module Reports**

Reports available for selection include those in the following list:

- Module Survey Report (page 716)
- Module Data Collection Report (page 717)

#### Module Survey Report

The survey report includes survey information by module, such as the *CPDM Survey Report*. It is available in a columnar, summary, or graph report style. The report includes all facility data in the survey period selected for the report, such as facility data in a survey period for the *CPDM Survey Report* (Figure 16-4).

							ne Comp					
						CPDM Su	rvey Rep	ort				
				Selected RO	Ws: TRANS	MISSION	; TRANSN	AISSION	SYSTEMS;	T-1401		
Opt	ions: Base	ed On: Sele	cted ROWs;	Selected Facility Type Th Options: All inspections								the reporting time period; Filter
					Structure	Foreign	Casing	Bond Current	Rectifier Output Current	Rectifier Output Volts	Rectifier Negative	
ROW Code and Pipe	Facilit	y ID	Milepost	Inspection Date	P/S	P/S	P/S	Found	Found	Found	Inspections	Inspection Remarks
tegion: TRANSMISSIO	N											
System: TRANSN	ISSION SY	STEMS										
ROW Code	: T-1401	ROW Na	me: College S	tation to Austin								
-1401			0.000	3/13/2003 12:00:00 AM	-1.019							Misc. piping -1.100
				4/1/2004 12:00:00 AM	-1.002							
				3/25/2005 12:00:00 AM	-1.275							Misc. piping -1.324 (Paint good)
				3/22/2006 12:00:00 AM	-1.141							(Paint good) Misc. piping -1.324 (Paint good)
	R-200		0.001	3/13/2003 12:00:00 AM					18.10	7.30		
				4/1/2004 12:00:00 AM					18.50	9.16		
				12/3/2004 12:00:00 AM					17.00	21.00		
				3/3/2005 12:00:00 AM								
				3/25/2005 12:00:00 AM					17.50	8.54		
				4/7/2005 12:00:00 AM					17.00	8.00		
				5/5/2005 12:00:00 AM					8.00	17.00		
				6/3/2005 12:00:00 AM					20.00	8.00		
				7/7/2005 12:00:00 AM					17.00 17.00	6.00 8.00		
				8/4/2005 12:00:00 AM 9/1/2005 12:00:00 AM					17.00	8.00		
				10/6/2005 12:00:00 AM					17.00	8.00		
				11/4/2005 12:00:00 AM					17.00	7.50		
				2/2/2006 12:00:00 AM					7.00	17.00		
				3/1/2006 12:00:00 AM					7.00	18.00		
				4/5/2006 12:00:00 AM					7.00	16.00		
				5/5/2006 12:00:00 AM					16.00	8.00		
				6/8/2006 12:00:00 AM					16.00	7.00		
				6/22/2006 12:00:00 AM					16.40	8.28		
				7/5/2006 12:00:00 AM					17.00	7.00		
				8/18/2006 12:00:00 AM								
				9/14/2006 12:00:00 AM						10.80		
urveyor												
					9/24/201	3	Page 1	/20				

Figure 16-4. Example of CPDM Survey Report

#### Module Data Collection Report

The data collection report is a blank report used by technicians and vendors to record survey readings in the field. It is available for selection in all modules except ISM. The report uses a columnar report style and includes survey information by module, such as the *CPDM Data Collection Report*. Based on the survey type selected when setting up the report, it includes a list of facilities and other optional data, such as previous survey readings (Figure 16-5).

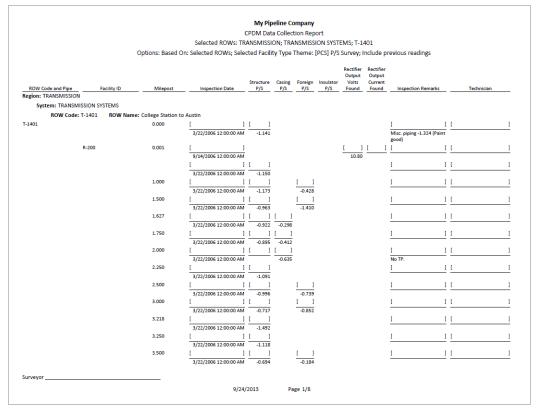


Figure 16-5. Example of CPDM Data Collection Report

## Facility Type Reports

Reports available for selection in any module except ISM include those in the following list:

- Facility Type Information Report
- Facility Type Inspections Report (page 719)
- Facility Type Maintenance Report (page 720)
- Facility Type Exceptions Report (page 721)

#### Facility Type Information Report

A report based on the columnar report style that includes information entered in the *Information* data entry grid for a facility type, such as the *Test Point Information* report. Depending on how the report is set up, it can include information for user-selected fields such as ROW Name and Code, Milepost number, Effective Date, Active/Inactive status, Protection Criteria, and so on. The report does not include survey readings (Figure 16-6).

				M	y Pipelin	e Company					
				Test P	oint Info	rmation Rep	port				
			Selected RO	Ws: TRANSN	IISSION;	TRANSMISS	SION SYST	EMS; T-14	01		
				Options:	Based O	n: Selected	ROWs				
						Test Point	Activate	Activate	Activate	Activate	
ROV	V Code and Pipe	Milepost	Location Description	Effective Date	Facility Active	Protection Criteria	Structure P/S	Casing P/S	Foreign P/S	Insulator P/S	Permanent Comments
	TRANSMISSION										
Sys	tem: TRANSMISSION S	YSTEMS									
	ROW Code: T-1401	ROW Name:	College Station to Austin								
r-1401		0.000	Bethel Station		Yes	.85 On	Yes	No	No	No	
		0.001	Rectifier R-200		Yes	.85 On	Yes	No	No	No	
		1.000	Alderman #1		Yes	.85 On	Yes	No	Yes	No	
		1.500	Williford E #1		Yes	.85 On	Yes	No	Yes	No	
		1.627	FM 321		Yes	.85 On	Yes	Yes	No	No	
		1.750	Park Rd. 64		Yes	.85 On	Yes	Yes	No	No	
		2.000	Texas 84		Yes	.85 On	Yes	Yes	No	No	
		2.250	County Rd.		Yes	.85 On	Yes	No	No	No	
		2.500	Fryer B		Yes	.85 On	Yes	No	Yes	No	
		3.000	Whitaker #1		Yes	.85 On	Yes	No	Yes	No	
		3.218	County Road		Yes	.85 On	Yes	No	No	No	
		3.250	Old Meter Riser		Yes	.85 On	Yes	No	No	No	
		3.500			Yes	.85 On	Yes	No	Yes	No	
		4.000	Mills #1		Yes	.85 On	Yes	No	Yes	No	
		5.000	Richard - Wynn		Yes	.85 On	Yes	No	Yes	No	
		5.275	Eastex Trans.		Yes	.85 On	Yes	No	Yes	No	
		6.000	FM 27		Yes	.85 On	Yes	No	Yes	No	
		7.000	Layton #1		Yes	.85 On	Yes	No	Yes	No	
		8.000	4" Riser		Yes	.85 On	Yes	No	Yes	No	
		8.500	Gas Unit #4		Yes	.85 On	Yes	No	Yes	No	
		8.717	Valve		Yes	.85 On	Yes	No	No	No	
		8.800	Rect R-200		Yes	.85 On	Yes	No	No	No	
		8.830	Big Brown Plant		Yes	.85 On	Yes	No	Yes	No	
		8.957	Valve		Yes	.85 On	Yes	No	No	No	
		8.979	Big Brown Plt R		Yes	.85 On	Yes	Yes	No	No	
		9.000	Gas Unit #3		Yes	.85 On	Yes	No	Yes	No	
Surveyo	r										
				9/24/2013		Page 1/4					

Figure 16-6. Example of CPDM Test Point Information Report

#### Facility Type Inspections Report

The inspections report includes information entered in the Inspection data entry grid for a particular facility type. It is available as a columnar, summary, or graph report. For example, the *Test Points Inspection* report includes all survey data collected at a test point but does not include other facility types such as rectifiers and bonds. Rectifier and bonds are included in a report specific to these facility types (Figure 16-7).

				My Pipel	ine Company					
				Test Point In	spection Rep	ort				
			Selected R	OWS: TRANSMISSION	N; TRANSMISS	ION SYST	EMS; T-1	1401		
			Filter	r Settings: Survey Is e	equal to '2006	Annual	Survey'			
Optic	ons: Based On: Sele	ected ROWs; C	only include facilities with	th inspections during	the reporting	z time pe	riod; Filt	er Options: /	All inspections that	t meet the filter criteria
				Indicate missing	inspection re	adings				
		Effective			Structure	Casing	Foreign	Insulator		
ROW Code and Pipe Region: TRANSMISSIO	Milepost	Date	Inspection Date	Survey	P/S	P/S	P/S	P/S	Technician	Inspection Remarks
	MISSION SYSTEMS									
ROW Code		Name: College	Station to Austin							
T-1401	0.000	vanie, conege .	3/22/2006 12:00:00 AM	2006 Annual Survey	-1.141					Misc. piping -1.324 (Pain
-1401	0.000		5/22/2006 12:00:00 AM	2006 Annual Survey	-1.141					good)
	0.001		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.150					
	1.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.173		-0.428			
	1.500		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.963		-1.410			
	1.627		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.922	-0.298				
	1.750		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.895	-0.412				
	2.000		3/22/2006 12:00:00 AM	2006 Annual Survey		-0.635				No TP.
	2.250		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.091					
	2.500		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.996		-0.739			
	3.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.717		-0.852			
	3.218		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.492					
	3.250 3.500		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.118 -0.694					
	4.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.694		-0.184 -0.707			Isolated at main - Bare
	4.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.686		-0.707			isolated at main - Bare line
	5.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.116		-0.665			
	5.275		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.451		-1.339			Meter needs painting,
										County Road.
	6.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.024		-0.954			
	7.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.094		-0.648			Rd casing abandoned
	8.000		3/22/2006 12:00:00 AM 3/22/2006 12:00:00 AM	2006 Annual Survey 2006 Annual Survey	-0.831		-0.862 -0.638			Mainline tie in
	8.500				-1.020		-0.638			East edge of Big Brown
	8./1/		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.080					(Needs paint). BV-F76B
	8.800		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.720					KWA meter # bad.
	8.830		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.514		-0.700			paint OK, plant side
	8.957		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.422					needs painting West of Big Brown tie-in
	8.979		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.409	-1.186				BV-F76.
Surveyor										
				9/24/2013	Page 1/4					

Figure 16-7. Example of CPDM Test Point Inspections Report

#### Facility Type Maintenance Report

A report based on the columnar report style that includes information entered in the *Maintenance* data entry grid for a facility type. For example, the *Test Points Maintenance* report includes a detail listing of all current, pending, and completed repairs for test points (Figure 16-8).

				My Pip	eline Compan	y			
				Test Point N	Aaintenance R	eport			
			Selected R	OWs: TRANSMISSI	ON; TRANSMIS	SION SYSTE	MS; T-1403		
		Options: Bas					, hat meet the filter crite	ria	
ROW Code and Pipe	Milepost	Effective Date	Repair Found Date	Test Point Repair Code	Repair Initiated Date	Repair Corrected Date	Reference Number	Repair Priority	Repair Remarks
Region: TRANSMISSION									
System: TRANSMISS	SION SYSTEMS								
ROW Code: T-	1403 ROW Na	me: Dallas to Ho	uston						
T-1403	0.000	12/31/2003	1/5/2006	23			3257	High	
	0.507		1/5/2006	4	1/5/2006	1/5/2006	3701	Crit	
	0.607		1/8/2011	5			3291	Low	Needs paint
	1.059		3/8/2011	6			2621	Crit	Destroyed
	2.703		1/5/2006	3	1/5/2006	1/5/2006	7226	Med	
			3/8/2008	4			1306	Med	
			3/8/2010	5			6921	Low	
			3/8/2011	6			1032	Low	
	2.705								
	2.753		3/8/2003	15	3/6/2011	3/8/2011	9434	Crit	Replaced leads
		3/23/2005	3/8/2011	24			9925	Med	
	2.798								
	5.869		3/8/2011	36			433	High	
	7.872		1/5/2006	1		1/5/2006	6529	Low	
	8.877		1/5/2006	20		2/9/2006	2114	High	
	10.190								
	10.191								
	12.850		3/8/2011	7			5797	Low	Leads are loose
	15.000								
	20.990		3/8/2011	15			3033	Low	
	20.995								
	23.762								
	25.778								
	25.779								
	29.812								
	32.490								
Surveyor									
				9/24/2013	Page 1/5				

Figure 16-8. Example of CPDM Test Point Maintenance Report

#### Facility Type Exceptions Report

A report based on the columnar report style that includes survey data and other related information only for facilities that fail to meet certain criteria. For example, based on filter options selected in *Exception Filters*, the report can include facilities with missing structure readings; structure readings less negative than -0.85; or structure readings more negative than -2.0. This type of report is helpful when trying to quickly locate a problem in the maintenance of a pipeline (Figure 16-9).

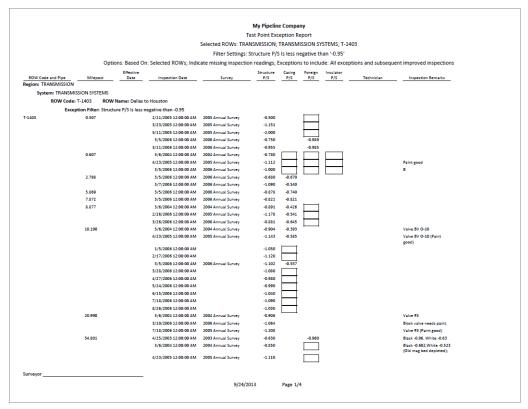


Figure 16-9. Example of CPDM Test Point Exceptions Report

#### **ROW Reports**

Reports available for selection in any module except ISM include those in the following list:

- ROW Information Report
- ROW Maintenance Report (page 723)

#### **ROW Information Report**

A report based on the columnar report style that includes pipeline system information entered in the *Edit ROW Detail Information* grid. Depending on how the report is set up, it includes information for user-selected fields such as pipeline name and size, total footage, default location format, surface area, and so on (Figure 16-10).

						My Pipeline Compan				
			Salacted	DOM: T		OW Information Repo ON; TRANSMISSION S		Me: 4 Die -l		
			Selected	ROWS: TH		IS: Based On: Selecter		JWS; 4 PIPEII	nes	
					option	is. bused on: selected	110113			
ROW	Code ROW Name	Pipe	Pipeline Name	Pipeline Size	Total Footage	Default Location Format	ROW Effective Date	ROW Active	Surface Area	ROW Permanent Comments
	RANSMISSION									
Syst	em: TRANSMISSION SYSTEMS									
-1401	ROW Code: T-1401									
-1401	College Station to Austin	1		12.00	390720	Milepost (3 Decimals)		Yes		
	ROW Code: T-1401	Records: 1								
	ROW Code: T-1403									
Г-1403	Dallas to Houston	1		24.00	992640	Milepost (3 Decimals)		Yes		
	ROW Code: T-1403	Records: 1								
	ROW Code: T-1701									
r-1701	Kilgore to Henderson	1				Station Number		Yes		
	ROW Code: T-1701	Records: 2					2/12/2007	No		
		Records. 2								
	ROW Code: T-1903									
F-1903	Station 400 to Station 401	1		24.00	992640	Milepost (3 Decimals)		Yes		
	ROW Code: T-1903	Records: 1								
Syst	em: TRANSMISSION SYSTEMS	Rec	ords: 5							
Region: Tl	RANSMISSION Red	cords: 5								
otal Reco	rds: 5									
Surveyor .										

Figure 16-10. Example of ROW Information Report

#### ROW Maintenance Report

A report based on the columnar report style that includes pipeline system information entered in the *Edit ROW Detail Maintenance* grid. It includes a detail listing of all current, pending, and completed repairs (Figure 16-11).

					My	Pipeline Con	npany			
					ROW	Maintenance	e Report			
			Sele	cted ROW	s: TRANSMISSION;	TRANSMISS	ION SYSTEM	IS; 3 ROWs; 3	3 Pipelines	
			Options: Ba	ed On: Se	lected ROWs; Filte	r Options: A	ll maintenan	ice that mee	t the filter criteria	
			ROW	ROW		ROW Repair	ROW Repair Initiated	Corrected		
	ROW Code	Pipe	Effective Date	Active	ROW Repair Code	Found Date	Date	Date	ROW Repair Remarks	ROW Reference Number
-	tem: TRANSMISSION	YSTEMS								
.,.	ROW Code: T-1401									
T-1401	1			Yes	RC101	9/9/2013	9/10/2013	9/10/2013	routine maintenance	Ref-101
	ROW Code: T-1401		Records: 1							
	ROW Code: T-1403									
T-1403	1			Yes	RC102	9/17/2013	9/18/2013	9/19/2013	routine maintenance	Ref-201
	ROW Code: T-1403		Records: 1							
	ROW Code: T-1903									
T-1903	1			Yes	RC203	9/20/2013	9/20/2013	9/20/2013	routine maintenance	Ref-301
	ROW Code: T-1903		Records: 1							
Sys	tem: TRANSMISSION S	STEMS	Records	: 3						
Region: 1	TRANSMISSION	Reco	ords: 3							
Total Rec	ords: 3									
Surveyor										

Figure 16-11. Example of ROW Maintenance Report

#### Continuous Survey Reports

Reports available for selection include those in the following list:

- PCS Axis Inspections Graph (page 715)
- Continuous Survey Report (page 724)
- Continuous Survey Folders Report (page 726)
- CIS Criteria Report (Continuous Survey) (page 727)

#### Continuous Survey Report

A report based on the columnar or graph report style that includes station numbers with associated survey readings for a selected survey folder and pipeline segment(s) selected in the *Select ROWs* window. See Figure 16-12 and Figure 16-13, page 725.

					My P	ipeline Compa	ny			
					CIS	Survey Repor	t			
			S	elected RO	Ws: TRANSMIS	SION; TRANSM	ISSION SYS	TEMS; T-140	3	
				Filter Set	tings: CIS Struc	ture P/S Is less	negative t	han '-0.95'		
		Optic	ns: Based C		-		-		6 On- Off Surve	v
		CIS	CIS					Plot		
ROW Code and Pipe	Station Number	Structure P/S	Structure	Indication Score	Indication Classification	Longitude	Latitude	This Point	Surveyor	Survey Remarks
F-1403	136+00	-0.753						Yes		Foreign Line Xing
F-1403	140+70	-0.948						Yes		
T-1403	189+30	-0.943						Yes		
T-1403	198+80	-0.848						Yes		
T-1403	202+10	-0.921						Yes		
T-1403 T-1403	213+00 213+10	-0.930 -0.924						Yes		
T-1403 T-1403	213+10 213+40	-0.924						Yes		
T-1403	213+40	-0.713						Yes		
T-1403	263+72	-0.800	-0.760					Yes		TS 284+05 -0.798 Retie
T-1403	263+80	-0.832	-0.767					Yes		15 204705 10.750 11210
T-1403	263+90	-0.851	-0.778					Yes		
T-1403	264+00	-0.881	-0.796					Yes		
T-1403	264+10	-0.890	-0.796					Yes		
T-1403	264+20	-0.892	-0.797					Yes		
T-1403	264+30	-0.900	-0.802					Yes		
T-1403	264+40	-0.889	-0.792					Yes		
T-1403	264+42	-0.884	-0.785					Yes		CL Caliche Rd
T-1403	264+50	-0.894	-0.794					Yes		
T-1403	264+60	-0.902	-0.800					Yes		
T-1403	264+70	-0.903	-0.802					Yes		
T-1403	264+71	-0.900	-0.797					Yes		Line Marker
T-1403	264+80	-0.899	-0.798					Yes		
T-1403	264+90	-0.896	-0.795					Yes		
T-1403	265+00	-0.887	-0.791					Yes		
T-1403	265+10	-0.885	-0.789					Yes		
T-1403	265+20	-0.882	-0.789					Yes		
T-1403	265+30	-0.883	-0.786					Yes		
T-1403	265+40	-0.891	-0.789					Yes		
T-1403	265+50	-0.892	-0.788					Yes		
T-1403	265+60	-0.892	-0.788					Yes		
T-1403	265+70	-0.887	-0.785					Yes		
Surveyor										
					9/24/2013	Page 1	(201			

Figure 16-12. Example of Continuous Survey Report (Columnar Report Style)

The next figure shows an example of the *Continuous Survey Report* using the graph report style (Figure 16-13).

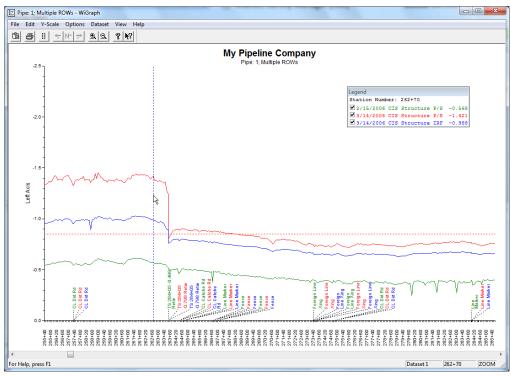


Figure 16-13. Example of Continuous Survey Report (Graph Report Style)

#### Continuous Survey Folders Report

A report based on the columnar report style that lists all survey folders associated with the currently selected pipeline segment in the *Select ROWs* window. The report includes the survey folder name, start date, and total number of survey readings for each survey folder included in the report (Figure 16-14).

			My Pipe	line Com	pany				
			CIS Surve	Folders I	Report				
		Selected ROWs: N	lorthwest F	Region; LB	123; 3 ROV	Ns; 3 Pij	pelines		
		Op	ions: Based	d On: Sele	cted ROWs	5			
			Number of						
			Readings in	Survey	Total				
ROW Code and Pipe B123-A	CI Survey Name 160PN NASCORP 2005	Start Date 4/1/2005	Survey 25596	Interval 2.5	Footage 69147	NASC	Surveyor	Vendor Smith CP Services	
8123-A	160PN 2008 - FOLLOW-UP	10/24/2008	6864	2.5	69147	CEM		CP Services CEM	
B123-B	1844+17 to 1841+67	8/31/2009	55	2.5	154213	BDP			
B123-B	oo to 250	8/31/2009	41	2.5	154213	BDP			
B123-B	00-250	9/8/2009	42	2.5	154213	BDP			
B123-C	243817 TO 244017	6/22/2009	41	5.0	362123	BDP		Smith CP Services	
B123-C	249755 TO 249955	6/22/2009	41	5.0	362123	BDP			
8123-C	249755 TO 249955 WOB	6/22/2009	40	5.0	362123	BDP			
8123-C	45.6373 TO 45.6752	6/22/2009	41	5.0	362123	BDP			
otal Records: 9									

Figure 16-14. Example of Continuous Survey Folders Report

#### CIS Criteria Report (Continuous Survey)

A report based on the columnar report style that lists survey data for on/off and native state surveys.

The *CIS Criteria Report* allows you to include or exclude survey readings based on the following fields: native (no cathodic protection); on potential (cathodic protection system on); and instant off (regular timed interruptions from the current source). If other report information is required, you can create a custom criteria report that meets those requirements. Report information also allows you to quickly determine if survey readings are out of specification or were recorded incorrectly (Figure 16-15).

						My Pipeli	ne Company			
						CIS Crite	ria Report			
				Selected	ROWS: TRAM	SMISSION	; TRANSMISS	ION SI	YSTEMS; T-1403	
	Filter Se	ttings: Read	ling does not m	eet the .85 C	n Criteria: Re	eading does	s not meet th	ie .85 I	IRF Criteria; Reading does n	ot meet the 100mV Criteria
		-	-			-				1403 2/15/2006 Native Survey
	CIS	CIS				Meets	Number of	Plot		
tation Number	Structure P/S	Structure IRF	CIS Native P/S (CIS Criteria)	Meets .85 On Criteria	Meets .85 Off Criteria	100mV Criteria	Readings in Survey	This Point	Survey Remarks	Surveyor
29+48	-0.580			No			21674	Yes	Pipe Enters Ground	
29+50	-0.602			No			21674	Yes	ok	
29+51	-0.615			No			21674	Yes	Fence	
29+60	-0.641			No			21674	Yes		
29+70	-0.630			No			21674	Yes		
29+80	-0.666			No			21674	Yes		
29+90	-0.666			No			21674	Yes		
30+00	-0.676			No			21674	Yes		
30+10	-0.683			No			21674	Yes		
30+20	-0.700			No			21674	Yes		
80+30	-0.696			No			21674	Yes		
30+40	-0.686			No			21674	Yes		
30+50	-0.683			No			21674	Yes		
30+60	-0.690			No			21674	Yes		
30+70	-0.696			No			21674	Yes		
30+80	-0.689			No			21674	Yes		
30+90	-0.676			No			21674	Yes		
81+75	-0.596			No			21674	Yes	Csg -0.302	
31+80	-0.563			No			21674	Yes		
31+84	-0.527			No			21674	Yes	Line Marker	
31+90	-0.548			No			21674	Yes		
32+00	-0.585			No			21674	Yes		
32+10	-0.608			No			21674	Yes		
32+20	-0.623			No			21674	Yes		
32+22	-0.594			No			21674	Yes	Fence to Seadrift PL Station	
32+30	-0.633			No			21674	Yes		
32+40	-0.637			No			21674	Yes		
32+50	-0.634			No			21674	Yes		
32+60	-0.642			No			21674	Yes		
32+64	-0.632			No			21674	Yes	Line Marker, PI Right	
32+70	-0.664			No			21674	Yes		
32+80	-0.678			No			21674	Yes		
eyor										

Figure 16-15. Example of CIS Criteria Report (Continuous Survey)

# **Report Styles**

Available PCS Axis report styles include columnar, summary, and graph. Information in this section describes reporting characteristics for each of these styles. Topics include those in the following list:

- Columnar Report Style
- Summary Report Style (page 729)
- Graph Report Style (page 730)

## Columnar Report Style

The columnar report style is similar to a spreadsheet with report data organized in columns and rows (Figure 16-16). There are as many rows of data as there are records returned from the PCS Axis database. You can set up the columnar report style with a layout, sorting, and filtering theme, as well as setting paper and print options.

				My Pipel	ine Company					
				Test Point In	spection Repo	ort				
			Selected R	OWS: TRANSMISSION	; TRANSMISS	ION SYST	TEMS; T-1	401		
			Filte	r Settings: Survey Is e	equal to '2006	Annual s	Survey'			
Opt	ions: Based On: Sel	ected ROWs; O	only include facilities with	th inspections during	the reporting	g time pe	riod; Filt	er Options: A	Il inspections that	t meet the filter criteria;
				Indicate missing	inspection re-	adings				
		Effective			Structure	Casing	Foreign	Insulator		
ROW Code and Pipe Region: TRANSMISS		Date	Inspection Date	Survey	P/S	P/S	P/S	P/S	Technician	Inspection Remarks
•	SMISSION SYSTEMS									
-		Name: College S	Station to Austin							
-1401	0.000	Name: Conege 3	3/22/2006 12:00:00 AM	2006 Annual Survey	-1.141					Misc. piping -1.324 (Paint
1-1401	0.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.141					good)
	0.001		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.150					
	1.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.173		-0.428			
	1.500		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.963		-1.410			
	1.627		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.922	-0.298				
	1.750		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.895	-0.412				
	2.000		3/22/2006 12:00:00 AM	2006 Annual Survey		-0.635				No TP.
	2.250		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.091		-0.739			
	3.000		3/22/2006 12:00:00 AM 3/22/2006 12:00:00 AM	2006 Annual Survey 2006 Annual Survey	-0.996		-0.739			
	3.218		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.717		-0.652			
	3.250		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.118					
	3.500		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.694		-0.184			
	4.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.686		-0.707			Isolated at main - Bare
										line
	5.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.116 -1.451		-0.665			• • • • • • • • • • • • • • • • • • •
	5.275		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.451		-1.339			Meter needs painting, County Road.
	6.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.024		-0.954			
	7.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.094		-0.648			Rd casing abandoned
	8.000		3/22/2006 12:00:00 AM	2006 Annual Survey	-0.831		-0.862			Mainline tie in
	8.500		3/22/2006 12:00:00 AM	2006 Annual Survey			-0.638			
	8.717		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.080					East edge of Big Brown (Needs paint). BV-F76B
	8.800		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.720					KWA meter # bad.
	8.830		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.514		-0.700			paint OK, plant side needs painting
	8.957		3/22/2006 12:00:00 AM	2006 Annual Survey						needs painting West of Big Brown tie-in. BV-F76.
	8.979		3/22/2006 12:00:00 AM	2006 Annual Survey	-1.409	-1.186				ov-r/6.
urveyor										
				9/24/2013	Page 1/4					

Figure 16-16. Example of Columnar Report Style

# Summary Report Style

The summary report allows you to analyze large amounts of pipeline data easily in a familiar spreadsheet format. The report provides a summary of totals, subtotals, and aggregated numeric data (counts, sums, and percentages) for facilities on a pipeline. For example, you can use the report to easily determine the total number of facilities on a pipeline; total number and percentage of surveyed facilities; and total number and percentage of surveyed facilities.

that meet the filter criteria; indicate missing inspection readings           Active TPs defended TPs defended           System         For Advice TPs defended TPs defended           System         ROW Code         Active TPs TPs defended TPs defended         Tes Advice TPs TPs defended TPs	Selected ROWs: TRANSMISSION', TRANSMISSION', SYSTEMS; 7 ROWs; 7 Pipelines Filter Settings: Survey Is equal to '2006 Annual Survey' Options: Based Or: selected ROWs; Ophindude facilities with inspections during the reporting time period; Filter Options: All inspections that meet the filter criteria; Indicate missing inspection readings that meet the filter criteria; Indicate missing inspection readings (FRANSMISSION SYSTEMS) FIRE OR Active TPs Te Surveyed Procent Surveyed P					My Pip	eline Company			
Filter Settings: Survey Is equal to '2006 Annual Survey'       Options: Based On: Selected ROWs; Only include facilities with inspections during the reporting time period; Filter Options: All Inspection       Antwe The Salected ROWs; Only include facilities with inspections during the reporting time period; Filter Options: All Inspection       Colspan="2">Colspan="2"       Colspan="2"       Colsp	Filter Settings: Survey Is equal to '2006 Annual Survey'           Options: Base On: Sleet ROWs; Only Include facilities with inspections during the reporting time period; Filter Options: All Inspections and the meets the inter-order site instant center					Test Point	Inspection Repor	t		
Options: Based On: Selected ROWs; Only include facilities with inspections during the reporting time period; Filter Options: All inspection           that meet be filter criteria; Indicate missing inspection reading:           Colspan="2">Colspan="2"Co	Options: Based On: Selected ROWs; Only include facilities with Inspections during the reporting time period; Filter Options: All inspections during the reporting time period; Filter Options: All inspections during the reporting time period; Filter Options: All inspections during the reporting time period; Filter Options: All inspections during the reporting time period; Filter Options: All inspections during the reporting time period; Filter Options: All inspections during the reporting time period; Filter Options: All inspections realing:           Added Total Selected Rows of the reporting time period; Filter Options: All inspections realing:           Option: Total Selected Rows of the reporting time period; Filter Options: All inspections realing:           Option: Total Selected Rows of the reporting time period; Filter Options: All inspections realing:           Option: Total Selected Rows of the reporting time period; Filter Options: All inspections realing:           Option: Total Selected Rows of the reporting time period; Filter Options: All inspections realing:           Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporting time period; Filter Option: Total Selected Rows of the reporteres and row row rows of the reporting tin the reporting time peri			Selected	ROWs: TRA	NSMISSION; TR	ANSMISSION SYS	TEMS; 7 ROWs; 7	Pipelines	
that meet the filter criteria; Indicate missing inspection readings           crient Crise Supresent Provide Supresent	The sub-result of the result of the r				Filter Se	ettings: Survey I	s equal to '2006 A	nnual Survey'		
Anter Try Sub Proceed	Inst Superier         The Superier         Formal Processing         Fo	Options: Bas	sed On: Selecte	d ROWs; O	Only include	facilities with in:	spections during	the reporting time	e period; Filter C	ptions: All inspections
Grand Total           System         ROW Code         Active TPs         TPs Surveyed         Percent Surveyed         TPs Below Criteria         TPs Above Criteria         TPs Requiring F/S         Percent Above Criteria - 1           TRANSMISSION SYSTEMS         1.1400         40         39         99%         1         38         40         9           T-1401         102         100         99%         23         64         101         1         4           T-1600         15         0%         0%         101         14         1 <td< td=""><td>Grand Total         Grand Total           system         ROW Code         Active TPs         TPs Surveyed         TPs Below Criteria         TPs Above Criteria         TPs Requiring P/s         Percent Above Criteria         TPs Above Criteria         TPs Requiring P/s         Percent Above Criteria         TPs Above Criteria         TPs Requiring P/s         Percent Above Criteria         TPs Above Criteria         TPs Requiring P/s         Percent Above Criteria         TPs Repuiring P/s         TPs Repuiring P/s         Percent Above Criteria         TPs Repuiring P/s         Percent Above Criteria         TPs Repuiring P/s         TPs Repuiring P/s         Tes Repu</td><td></td><td></td><td></td><td>that meet th</td><td>e filter criteria;</td><td>Indicate missing i</td><td>nspection reading</td><td>gs</td><td></td></td<>	Grand Total         Grand Total           system         ROW Code         Active TPs         TPs Surveyed         TPs Below Criteria         TPs Above Criteria         TPs Requiring P/s         Percent Above Criteria         TPs Above Criteria         TPs Requiring P/s         Percent Above Criteria         TPs Above Criteria         TPs Requiring P/s         Percent Above Criteria         TPs Above Criteria         TPs Requiring P/s         Percent Above Criteria         TPs Repuiring P/s         TPs Repuiring P/s         Percent Above Criteria         TPs Repuiring P/s         Percent Above Criteria         TPs Repuiring P/s         TPs Repuiring P/s         Tes Repu				that meet th	e filter criteria;	Indicate missing i	nspection reading	gs	
RANSMISSION SYSTEMS TRANSMISSION SYSTEMS TA1400         Active TPs         TP: Surveyed         Percent Surveyed         TP: Below Criteria         TP: Above Criteria         TP: Requiring P/S         Percent Above Criteria - 1           TRANSMISSION SYSTEMS TA1401         100         39         98%         1         38         40         9           T-1401         102         096%         23         66         101         40           T-1600         137         125         00%         108         134         40	RAW Code         Active TPs         Ps Surveyed         Percent Surveyed         TPs Below Criteria         TP 4 Above Criteria         TP s Requiring P/s         Percent Above Criteria -TP s           IRANSMISSION SYSTEMS         1-400         40         39         9986         1         38         40         9955           Ir401         100         000         9896         1         38         40         9955           Ir402         1010         1000         9896         123         644         101         6639           Ir403         137         1205         9195         121         100         8103         8113           Ir400         05         0         065         100         100         8103         8113           Ir400         05         0         066         0         006         000	Active TPs Su Percen TPs Be TP	s Ab TPs Re Percen							
TANASMISSION SYSTEMS         T.1400         40         33         95%         1         33         40         9           T.400         102         100         96%         23         64         100         6           T.403         137         125         91%         22         108         134         141           T.1600         5         0%         0%         0         144         144         145 </td <td>TANASMISSION SYSTEMS         7-1400         4d0         39         98%         1         38         40         95%           T-401         102         100         98%         23         64         101         6635           T-402         107         102         91%         23         64         101         6635           T-1600         107         107         0%         0%         108         104         6119           T-1700         6         0%</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	TANASMISSION SYSTEMS         7-1400         4d0         39         98%         1         38         40         95%           T-401         102         100         98%         23         64         101         6635           T-402         107         102         91%         23         64         101         6635           T-1600         107         107         0%         0%         108         104         6119           T-1700         6         0%									
T1400         40         30         90%         1         30         40         10           T1400         102         100         98%         2         64         101         6           T1403         137         125         91%         12         108         134         14           T1600         5         0%         0%         0         14         14	T-1400         40         35         300         1         360         40         527           T-1403         103         100         98%         23         64         101         6635           T-1403         137         125         91%         22         108         134         819           T-1600         5         0%         0%         0         0         90%           T-1700         0         0%         0%         0%         0%         0%           T-1903         136         124         91%         12         107         133         86%	· · · · · · · · · · · · · · · · · · ·								
T-1403         1137         125         9.1%         12         108         134         11           T-1600         5         0%         0%         0         0         0         0         0	T-403         137         125         91%         12         108         134         819           T-1600         5         0         0%         0         0%	TRANSMISSION SYSTEMS								
T-1600 S 0%	T-1600         S         OK         OK         OK         OK           T-1700         C         OK         C         OK         OK <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>									
	T-1700         C         OM         C         OM           T-1701         C         OM         C         A         OM           T-1903         136         124         915         12         107         133         809				125			108	134	
	T-1701         O         O%         48         O%           T-1903         136         124         91%         12         107         133         80%			5						0%
	T-1903 136 124 91% 12 107 133 809									0%
	IRANSMISSION SYSTEMS Total 420 388 92% 48 317 456 709									
TRANSMISSION SYSTEMS Total         420         388         92%         48         317         456		TRANSMISSION SYSTEMS Tot	al	420	388	92%	48	317	456	70%

Figure 16-17. Example of Summary Report Style

The summary report style provides an optional *Drilldown* feature for viewing summary data in a pivot table. You can add, remove, and arrange data columns in the pivot table to obtain a desired report of summary data. Double-clicking a field in the grid opens a window with drilldown information as shown in the following example (Figure 16-18).

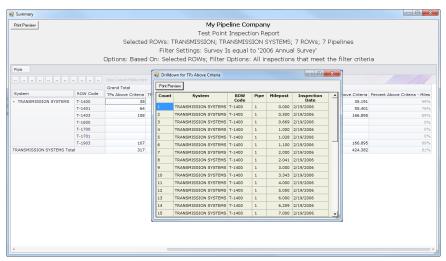


Figure 16-18. Summary Drilldown Report

## Graph Report Style

A graph report presents data in a line graph format. The report shows survey data versus distance or time. As an option you can set up the report to graph several bands of survey data. Each band includes an X-axis, Y-axis, and survey readings.

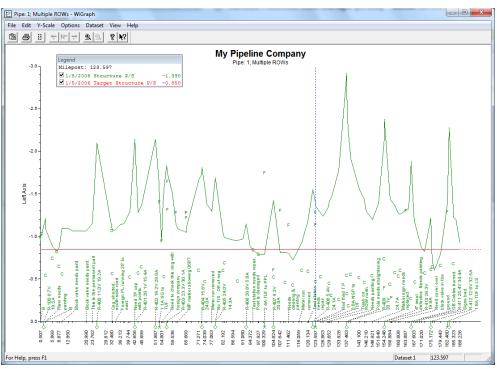


Figure 16-19. Example of Graph Report Style

# Understanding the Summary Drilldown Report

The *Summary* report includes the *Drilldown* option for displaying data in an interactive pivot table format (Figure 16-20). This feature allows you to display different representations of the same summary data. You can add, remove, and rearrange filters to display a subset of summary data for easier analysis of large amounts of data. Double-clicking a field opens a window with detailed drilldown information for the selected summation type (Figure 16-18). Percentage drill downs are currently unavailable. The following list describes operations you can perform in a pivot table:

- Arranging Column Fields in the Grid: The arrangement of filter buttons correspond to the arrangement of column fields in the grid. Dragging a filter button to a different position within the group of buttons subsequently rearranges column fields in the grid. Hovering the mouse over a filter button displays a tooltip with the filter name.
- *Removing Column Fields in the Grid*: Dragging a filter button to the area of the pivot table labeled "Drop Column Fields Here" removes the selected column from the grid.
- *Removing Filters from Calculations*: Dragging a filter button to the area of the pivot table labeled "Drop Filter Fields Here" removes the selected filter from calculations.
- Double-click a total or sub-total to view or print details in a drilldown table.

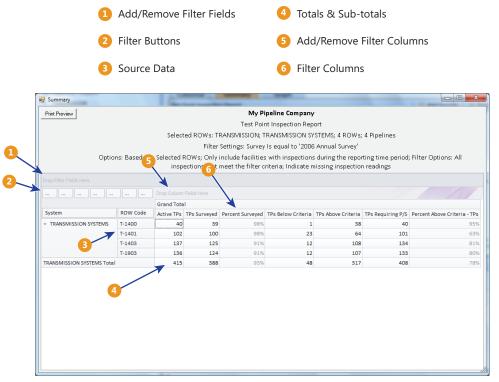


Figure 16-20. Summary Drilldown

# **Quick Start**

Information in this section includes procedures for setting up and printing a report based on the Columnar and Summary report styles. Report set up includes selecting a report layout and sorting method, as well as selecting optional filters for filtering data.

Topics in this section include those in the following list:

- Working with a Report Based on the Columnar Report Style
- Working with a Report Based on the Summary Report Style (page 736)
- Working with a Report Based on the Graph Style (page 740)

### Working with a Report Based on the Columnar Report Style

Complete the following steps to set up and print or export a report based on the *Columnar* report style:

Complete the following steps:

Select one or more pipeline segments in the *Select ROWs* window (Figure 16-21). Choose pipeline segment(s) with facilities you want to include in the report. Click
 Save to close the window.

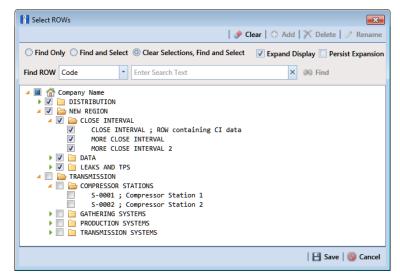


Figure 16-21. Select ROWs

2 Click **Reports/Graphs** and then select a report in the menu to open a window with report property settings. If the *Columnar* property settings window is not visible, click the **Columnar** tab <u>Columnar</u> to open the window (Figure 16-22, page 733).

The following figure shows an example of the *Columnar* property settings window for the *Test Point Inspection Report* (Figure 16-22, page 733).

PCS	Avis 🕞 🖸	×
	Nodules Data Entry Reports / Graphs Tools Field Computer Help 🕜 Cathodic Protection Data Manager (CPDM) Welcome John Smith 💩 🛛 🔀 Log	Ou
Q.	Test Point Inspection Report X	
	Columnar Summary Graph 🗟 🧨	æ
	Test Point Inspection Report 🛛 🛔 Add Favorite   😓 Print   🔒 Expo	t
	🗈 Based On	
	<ul> <li>Ø Selected ROWs</li> <li>Ø Route</li> </ul>	
	3 View	
	Select Layout Theme	
	PCS] Test Point Inspections	
	Nort Options	
	Select Sort Theme Sort Dates  PCSI ROW Code and Mileoost  ONewest First Newest First	
	Insert Lines Between Groups Page Breaks None   None	
	Options	
Selected ROWs	Filter Options:  All inspections that meet the filter criteria  Apply other filters to the most recert inspection found within report timeframe  The most recent inspection after the filter criteria has been met  Indicate missing inspection reading	
	Y Filters (D New 'And' Group (D New 'Or' Group	
	Currently Active Facilities Only Currently Inactive Facilities on Currently Inactive ROWs	
	🔲 Relative Milepost is between 🥜 and	
	Inspection Date is between	
	Survey is equal to	
	Periodic Survey is equal to	
	Periodic Survey Year is equal to	
	Technician is equal to	
		-

Figure 16-22. Test Point Inspection Report

- **3** Select one of the following options to choose which facility records to include in the report:
  - **a** Click the option **Selected ROWs** to include facilities associated with the pipeline selection(s) in the *Select ROWs* window.
  - **b** Click the **Route** option and then select a route to include facilities associated with the selected route.
- 4 Click the down arrow in the field **Select Layout Theme** and choose a layout theme in the selection list. The layout theme determines which fields are included in the report, paper and font settings, and additional print options such as including a signature line in the report.

**NOTE:** Only public themes are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

- **5** Click the down arrow in the field **Select Sort Theme** and choose a sorting theme in the selection list. The sorting theme determines how PCS Axis sorts report data.
- 6 Choose a method for sorting inspection dates. Click **Oldest First** or **Newest First** in **Sort Dates** to sort records with the oldest or newest inspection dates first.
- 7 Choose an option for inserting a line between different groups of report data. Click the down arrow in the field **Insert Lines Between Groups** and choose an option in the selection list.
- 8 Choose an option that determines where a page break occurs in the report. Click the down arrow in the **Page Breaks** field and select an option in the selection list.
- **9** Select one or more of the following options as needed in the *Options* group box. Date range in filter criteria is determined by considering all time frame filters, such as inspection date, survey, and periodic survey filters.
  - Only include facilities with inspections during the reporting time period: When time frame filters are not selected in the *Filters* group box, such as inspection date, survey, or periodic survey filters, the report includes all inspections using the inspection date and time as the reporting time period.

If one or more time frame filters are selected in the *Filters* group box, the report only includes inspections for the selected time frame filter(s).

- All inspections that meet the filter criteria: Report includes all inspections that meet filter criteria based on selections in the *Filter* group box.
- Apply other filters to the most recent inspection found within report timeframe: This option finds the latest inspection within the reporting time frame first, and then applies all other filters selected in the *Filter* group box. The report only includes inspections for facilities when the latest record within the date range meets other filters.
- The most recent inspection after the filter criteria has been met: This option applies all filter criteria first based on selections in the *Filter* group box, and then finds the latest inspection.
- *Indicate missing inspection readings:* This option includes an empty box in the report for each missing inspection reading.
- **10** Select one or more options in the *Filters* group box to filter report data according to your filter selection(s). For example, click **Currently Active Facilities Only** to only include currently active facilities in the report.

**NOTE:** PCS Axis disables the option *Only show facilities with inspection records* when the *Columnar* report includes any of the following filter settings: Inspection Date is between, Survey is equal to, Periodic Survey is equal to, or Periodic Survey Year is equal to.

When adding a date filter, such as **Inspection Date is between**, set a date range using a calendar or dynamic dates in the following manner:

- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
- To set a date range using dynamic start and end dates, click the 📰 calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **11** If you want to add the report in *Favorite Reports* (Reports/Graphs > Favorite Reports), click **Add Favorite**.

**NOTE:** If you want to remove a favorite report listed in *Favorite Reports*, open the report and then click **Provide Remove Favorite** in the report options window.

**12** To export the report:

- a Click 📑 Export to open the Export File dialog box.
- **b** Choose an export file type. Click the down arrow in the **Save as type** field and select one of the following file types:
  - Excel files (\*.xlsx)
  - Text files (\*.txt, \*.csv)
  - XML files (\*.xml)
- **13** To print the report:
  - a Click **Print** to open the report in a preview window.
  - **b** To print the report using the default printer set up in Windows, click the 
     **Quick Print** button. To select a printer other than the default printer, click the 
     **Print** button.

### Working with a Report Based on the Summary Report Style

The following procedure explains how to set up and print or export a report based on the *Summary* report style. Also included are instructions for using the optional *Drilldown* feature.

Complete the following steps:

Select one or more pipeline segments in the *Select ROWs* window (Figure 16-23).
 Select pipeline segment(s) with facilities you want to include in the report. Click
 Save to close the window.

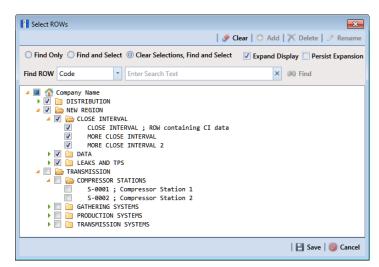


Figure 16-23. Select ROWs

2 Click **Reports/Graphs** and then select a report in the menu to open a window with report property settings. If the *Summary* property settings window is not visible, click the **Summary** tab <u>Summary</u> to open the window.

The following figure shows an example of the *Summary* property settings window for the *Test Point Inspection Report* (Figure 16-24).

PCS Axis	- • •
File Modules Data Entry Reports / Graphs Tools Field Computer Help 🚺 Cathodic Protection Data Manager (CPDM)	Welcome John Smith   💷   🔀 Log Out
Test Point Inspection Report ×	
Columnar Summary Graph	+ Customize
Test Point Inspection Report	😭 Add Favorite   😣 Print   🗔 Drilldown
🗈 Based On	
<ul> <li>Ø ● Selected ROWs</li> <li>Ø Route</li> </ul>	
🔣 View	
Select Layout Theme 🕏 [PCS] Compliance Report	
(i) Options	
Only include facilities with inspections during the reporting time period	
Filter Options: (a) All inspections that meet the filter criteria	
The most recent inspection after the filter criteria has been met	
Apply other filters to the most recent inspection found within report timeframe     The most recent inspection after the filter criteria has been met     Filters     Filters	① New 'And' Group 0 New 'Or' Group
	•
Currently Active Facilities Only Currently Inactive Facilities and Facilities on Currently Inactive ROWs	
Contently inactive racinities and Pacificies on Contently inactive Rows     Relative Milepost is between	
Inspection Date is between and a magnetic state of the second stat	
Survey is equal to	
Periodic Survey is equal to	
Periodic Survey Year is equal to	
Technician is equal to	
	9

Figure 16-24. Test Point Inspection Report (Summary)

- 3 Select an option to choose which facility records to include in the report. Click Selected ROWs to include facilities associated with the pipeline selection(s) in the Select ROWs window. Or, click Route and then select a route to include facilities associated with the selected route.
- 4 Click the down arrow in the field **Select Layout Theme** and choose a layout theme in the selection list. The layout theme determines which fields are included in the report.

**NOTE:** Only public themes are available for selection. If you would like to use a private theme, your company's system administrator must make your private theme a public one.

- Select one or more of the following options as needed in the *Options* group box.
   Date range in filter criteria is determined by considering all time frame filters, such as inspection date, survey, and periodic survey filters.
  - Only include facilities with inspections during the reporting time period: When time frame filters are not selected in the *Filters* group box, such as inspection date, survey, or periodic survey filters, the report includes all inspections using the inspection date and time as the reporting time period.

If one or more time frame filters are selected in the *Filters* group box, the report only includes inspections for the selected time frame filter(s).

- *All inspections that meet the filter criteria*: Report includes all inspections that meet filter criteria based on selections in the *Filter* group box.
- Apply other filters to the most recent inspection found within report timeframe: This option finds the latest inspection within the reporting time frame first, and then applies all other filters selected in the *Filter* group box. The report only includes inspections for facilities when the latest record within the date range meets other filters.
- The most recent inspection after the filter criteria has been met: This option applies all filter criteria first based on selections in the *Filter* group box, and then finds the latest inspection.
- **6** Select one or more of the following survey filters in the *Filters* group box. The *Summary* report requires at least one of these filter settings:
  - Survey is equal to
  - Periodic Survey is equal to
  - Periodic Survey Year is equal to

**NOTE:** PCS Axis disables the option *Only show facilities with inspection records* when the *Summary* report includes any of the following filter settings: Inspection Date is between, Survey is equal to, Periodic Survey is equal to, or Periodic Survey Year is equal to.

- Select additional filters in the *Filters* group box as required. For example, click
   Currently Active Facilities Only to only include active facilities in the report.
- 8 When adding a date filter, such as **Inspection Date is between**, set a date range using a calendar or dynamic dates in the following manner:

- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
- To set a date range using dynamic start and end dates, click the button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **9** If you want to add the report in *Favorite Reports*, click **Add Favorite**.

**NOTE:** Once a report has been added as a favorite, you can remove the favorite report by opening the report and clicking report = Remove Favorite in the report options window.

**10** If you want to work with report data in an interactive pivot table, click **C Drilldown** to open the report in a new window.

See *Understanding the Summary Drilldown Report* (page 731) for a description of operations you can perform in the pivot table.

- **11** To print the report:
  - a Click 🖳 **Print** to open the report in a preview window.
  - b To print the report using the default printer set up in Windows, click the 
     Quick Print button. To select a printer other than the default printer, click the
     Print button.

### Working with a Report Based on the Graph Style

Complete the following steps to set up and print or export a report based on the *Graph* report style:

Complete the following steps:

Select one or more pipeline segments in the *Select ROWs* window (Figure 16-25). Choose pipeline segment(s) with facilities you want to include in the graph. Click
 Save to close the window.

Select ROWs	×
Ø	lear   🔿 Add   🗙 Delete   🧷 Rename
$\bigcirc$ Find Only $\bigcirc$ Find and Select $@$ Clear Selections, Find and Select	🗹 Expand Display 🗌 Persist Expansion
Find ROW Code    Enter Search Text	× 00 Find
<ul> <li>Company Name</li> <li>Company Name</li> <li>DISTRIBUTION</li> <li>CloSE INTERVAL</li> <li>CLOSE INTERVAL; ROW containing CI data</li> <li>MORE CLOSE INTERVAL</li> <li>MORE CLOSE INTERVAL</li> <li>MORE CLOSE INTERVAL</li> <li>Compressor Station 1</li> <li>S-0002; Compressor Station 1</li> <li>S-0002; Compressor Station 2</li> <li>GATHERING SYSTEMS</li> <li>TRANSMISSION SYSTEMS</li> <li>TRANSMISSION SYSTEMS</li> </ul>	
	💾 Save   🔞 Cancel

Figure 16-25. Select ROWs

- 2 Click **Reports/Graphs** and select a report in the menu.
- **3** Click the **Graph** tab **Graph** to open a property settings window. For example, the next figure shows the property settings window for the *Test Point Inspection* graph (Figure 16-26, page 741).
- 4 Click the down arrow in the field **Select Layout Theme** and choose a layout theme in the selection list.
- 5 In the **Band Fields** group box, click the check box for more or more types of survey data you want to include in the graph.
- 6 Select one or more *Facility Surveys* in the Survey Selections group box. To select facility surveys in sequential order, press Shift and then click each survey. To select facility survey in non-sequential order, press Ctrl and then click each survey.
- 7 To include all parallel pipelines on one page, click the check box **Include all parallel pipes on one page**.

A check mark inside the check box indicates a selection. To clear the selection, click the check box again to remove the check mark.

- 8 To combine all selected pipelines on one page, click the check box **Combine all** selected ROWs on one page.
- **9** Select one or more options in the **Filters** group box to filter graph data according to your filter selection(s). For example, click **Currently Active Facilities Only** to only include currently active facilities in the graph.

Modules Data Entry Reports / Graphs Tools Field Computer Help O Cathodic Protection Data Manager (C	CPDM) Welcome John Smith 🛛 🕙 🛛 🕬
Test Point Inspection Report ×	
	of Custo
Columnar Summary Graph	
Test Point Inspection Report	😭 Add Favorite   🛃 G
🐰 View	
Select Layout Theme 🐨 [PCS] Test Point Inspections (vs Distance Graph) 🔹	
I Band Fields	
🗹 Structure P/S 🗹 Structure IRF 🗹 Target Structure P/S 🗹 Target Structure IRF 📝 Native P/S 📝 Native P/S + 100 mV	
Survey Selections	
Facility Surveys	
Facility Surveys	🧈 Ci
	10-0
2010 Annual Survey	
2009 Annual Survey	
2009 to 2011 Atmospheric Survey	
2008 Annual Survey	
2007 Annual Survey	
2006 Annual Survey	
2006 to 2008 Atmospheric Survey	
2005 Annual Survey	
Include all parallel pipes on one page	
Combine all selected ROWs on one page	
17 atta	
7 Filters	
D     Currently Active Facilities Only	

Figure 16-26. Test Point Inspection Graph Report

**10** If you want to add the graph in *Favorite Reports*, click **Add Favorite**.

**NOTE:** If you want to remove a favorite report listed in *Favorite Reports*, open the report and then click **Pavorite Remove Favorite** in the report options window.

**11** To view the graph, click **Graph** to open the graph in a preview window. Then click the **Print** button to print the graph.

# Adding a Custom Report

The following procedure explains how to add a custom report and set up report options. For information about deleting a custom report or changing a custom report from *Public* to *Private* and vice versa, refer to the instructions in *Managing Themes* (page 697).

Complete the following steps:

Select one or more pipeline segments in the *Select ROWs* window (Figure 16-27). Choose pipeline segment(s) with facilities you want to include in the report. Click
 Save to close the window.

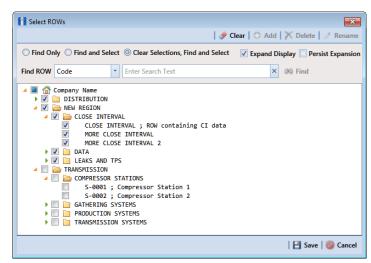


Figure 16-27. Select ROWs

2 Click **Reports/Graphs**, navigate to a report in the list, then click **G** Add Report.

For example, click *Reports/Graphs > Test Point Reports > Test Point Inspection Report > Add Report* to open the *Add Custom Report* dialog box (Figure 16-28).

Test Point Inspection Report: Add Custor	n Report 🛛 🔀
Name	
8	
Description	
Public	
	💾 Save   🚳 Cancel

Figure 16-28. Add Custom Report

- **3** Type a name for the report in the **Name** field. This field is required.
- **4** If you want to add information about the report, type the information in the **Description** field.
- **5** Select the **Public** check box if you want the report available to all PCS Axis users. When a report is not public, it is a private report available only to the user who creates it.
- 6 Click 💾 Save.
- **7** When the report options window opens (Figure 16-29), select one of the following options to choose which facility records to include in the report:

	Axis	
N	Modules Data Entry Reports / Graphs Tools Field Computer Help 🗾 🙆 Cathodic Protection Data Manager (CPDM)	Welcome John Smith   🔨   🔀 Le
1	My TP Custom Report 🗙	
L	Columnar Summary Graph	ل Custom
	My TP Custom Report	🖌 🔓 Add Favorite   🗟 Print   📄 Exp
	2) Based On	M And Favorite   B Print   H Exp
	Based On     Selected ROWs	
	<ul> <li>Selected RUWS</li> <li>Ø Route</li> </ul>	
	🔝 View	
	Select Layout Theme	
	[PCS] Test Point Inspections     *	
	N Sort Options	
	Select Sort Theme Sort Dates  PCSI ROW Code and Milenost  Oldest First  Newest First	
	Insert Lines Between Groups Page Breaks None   Vone  Vone  Vone Vone Vone Vone Vone Vone Vone Vone	
	(i) Options	
	Only include facilities with inspections during the reporting time period Filter Options: All inspections that meet the filter criteria Apply other filters to the most recent inspection found within report timeframe The most recent inspection after the filter criteria has been met Indicate mission inspection regimes	
	Indicate missing inspection reduings           Filters	💿 New 'And' Group   🔘 New 'Or' Group
		0
	Currently Active Facilities Only	
	Currently Inactive Facilities and Facilities on Currently Inactive ROWs	
	Relative Milepost is between	9
	Inspection Date is between and and and a second sec	1
	Survey is equal to ~	
	Periodic Survey is equal to	
	Periodic Survey Year is equal to	

Figure 16-29. Custom Report Options

- **a** Click the option **Selected ROWs** to include facilities associated with the pipeline selection(s) in the *Select ROWs* window.
- **b** Click the **Route** option and then select a route to include facilities associated with the selected route.
- 8 Click the down arrow in the field **Select Layout Theme** and choose a layout theme in the selection list. The layout theme determines which fields are included in the report.

**Note:** For information about adding new report themes, such as a report layout theme, sorting theme, and filter theme, refer to *Working with Report Themes and Filter Groups* (page 747).

- **9** Complete the following steps in the *Sort Options* group box:
  - **a** Click the down arrow in the field **Select Sort Theme** and choose a sorting theme in the selection list. The sorting theme determines how PCS Axis sorts report data.
  - b Choose a method for sorting inspection dates. Click Oldest First or Newest
     First in Sort Dates to sort records with the oldest or newest inspection dates first.

- c Choose an option for inserting a line between different groups of report data. Click the down arrow in the field **Insert Lines Between Groups** and choose an option in the selection list.
- **d** Choose an option that determines where a page break occurs in the report. Click the down arrow in the **Page Breaks** field and select an option in the selection list.
- **10** Select one or more of the following options as needed in the *Options* group box. Date range in filter criteria is determined by considering all time frame filters, such as inspection date, survey, and periodic survey filters.
  - Only include facilities with inspections during the reporting time period: When time frame filters are not selected in the *Filters* group box, such as inspection date, survey, or periodic survey filters, the report includes all inspections using the inspection date and time as the reporting time period.

If one or more time frame filters are selected in the *Filters* group box, the report only includes inspections for the selected time frame filter(s).

- *All inspections that meet the filter criteria*: Report includes all inspections that meet filter criteria based on selections in the *Filter* group box.
- Apply other filters to the most recent inspection found within report timeframe: This option finds the latest inspection within the reporting time frame first, and then applies all other filters selected in the *Filter* group box. The report only includes inspections for facilities when the latest record within the date range meets other filters.
- The most recent inspection after the filter criteria has been met: This option applies all filter criteria first based on selections in the *Filter* group box, and then finds the latest inspection.
- *Indicate missing inspection readings*: This option includes an empty box in the report for each missing inspection reading.
- Select optional filters in the *Filters* group box as required. For example, clickCurrently Active Facilities Only to include only currently active facilities in the report.

When adding a date filter, such as **Inspection Date is between**, set a date range using a calendar or dynamic dates in the following manner:

- To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
- To set a date range using dynamic start and end dates, click the button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- **12** If you want to add the report in *Favorite Reports*, click **Add Favorite**.

**NOTE:** If you want to remove a favorite report listed in *Favorite Reports*, open the report and then click **Armove Favorite** in the report options window.

- **13** To print the report:
  - a Click 🖳 **Print** to open the report in a preview window.
  - b To print the report using the default printer set up in Windows, click the 
     Quick Print button. To select a printer other than the default printer, click the
     Print button.

# Working with Report Themes and Filter Groups

A theme is a group of named settings saved for later use, such as a report layout or sort theme. Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

Several installed themes are provided with the PCS Axis software installation. PCS Axis installed themes are public themes available to all PCS Axis users. These themes are identified with a globe icon and PCS in brackets [PCS], such as () [PCS] Test Point Inspections.

A filter group is a named set of one or more filters that affect the data output of a report. PCS Axis provides two types of filter groups you can define and include in the property settings of a report. These include the AND and OR filter groups.

When you add a filter group, you define filter conditions that determine which records to include or exclude in a report. Adding an AND filter group produces a subset of records that meet *all* filter conditions. Adding an OR filter group produces a subset of records that meet *any* filter condition. When you generate the report, PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

The following sections describe how to add a report layout theme, sort theme, and an optional filter group. Topics include those in the following list:

- Adding a Columnar Report Layout Theme (page 748)
- Adding a Summary Report Layout Theme (page 753)
- Adding a Report Sort Theme (page 757)
- Adding an AND Filter Group (page 762)
- Adding an OR Filter Group (page 765)
- Editing and Arranging Filter Groups (page 769)

# Adding a Columnar Report Layout Theme

A columnar report layout theme is a group of report settings saved in a theme for later use. Settings include choosing which fields to include in the report, paper settings, and print options. The following procedure applies to a columnar report layout theme for any columnar report in PCS Axis.

Complete the following steps:

Select one or more pipeline segments in the Select ROWs window (Figure 16-30).
 Select pipeline segment(s) with facilities you want to include in the report. Click Save to close the window.

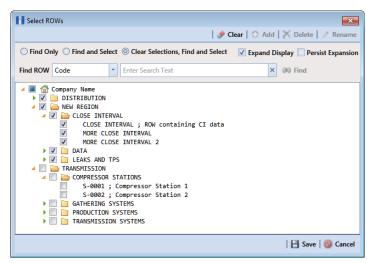


Figure 16-30. Select ROWs

2 Select the report you want to work with in the *Reports/Graphs* menu. Click **Report/Graphs** and then select a report in the list.

For example, click *Reports/Graphs* > *Test Point Reports* > *Test Point Inspection Report*.

3 Click the **Customize** tab **Customize**, and then the **Columnar Layouts** button **Columnar Layouts** to open the *Layouts* page (Figure 16-31).

PCS	Axis	- • ×
_		: John Smith   🤨   🔀 Log Out
Q	Test Point Inspection Report ×	
	Columnar Summary Graph	🥜 Customize
	😑 🛛 Layouts: Test Point Inspection Report 🛛 🛛 🔛 Save and Close 🛛 🖽 Save 🖉 Add 🕅 Kolete 🗠 Revert 🖾 New Baseline 🕼 Cancel	Columnar Layouts
	Select Layout Theme Based On SelectedROW	🍒 Summary Layouts
	POST Test Point Inspections     Search For Field     X     POW Code and Pine	🞽 Graph Layouts
	Search For Field X ROW Code and Pipe	🛚 Sorts
	ROW Permanent Information Fields     Effective Date     Effective Date	Y Filters
	Test Point Information Fields	Close
	Test Point Inspection Fields     Survey     Structure P/S	
	Casing P/S	
	Foreign P/S Insulator P/S	
	Technician	
	Inspection Remarks	
ls	$\odot$	
SOV ::	$\odot$	
Selected ROWs		
Selec		
•,		
	Report Paper Size Estimate (DPI = 100)	-
	neport i aper size csumate (pri r = 200)	
	Notdanella Hear Petrikan Insettrian Sove Book State State Sove Insettlines	
	Wrap Wrap	
	Paper Settings	-
		-

Figure 16-31. Report Layouts

**NOTE:** Setting up a *Graph Layouts* theme is unavailable in the current release of the PCS Axis software.

4 Click 🛟 Add to open the New Layout Theme dialog box (Figure 16-32).

New Layout Theme
Enter Theme Name:
8
Public 🗹 Copy Content
Copy Fields From Theme:
[PCS] Test Point Inspections
Fields in the Selected Theme:
ROW Code and Pipe  Milepost Effective Date Inspection Date Survey Structure P/S Casing P/S Foreign P/S Insulator P/S Technician Inspection Remarks
V
🛷 OK   🚳 Cancel

Figure 16-32. New Layout Theme

- **5** Type a name for the layout theme in the field **Enter Theme Name**. This field is required.
- **6** If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

- 7 Select a layout theme with fields you want to copy to the new layout theme. Click the Copy Content check box and then click the down arrow in Copy Fields From Theme and select a theme in the selection list.
- 8 Click **V** OK to save changes and return to the *Layouts* page.
- **9** Complete the following steps to add and remove fields in the report layout theme as needed (Figure 16-33):
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ All Fields.

- **b** Double-click a field in the left pane to move it to the right pane. Repeat this step as needed. The report layout theme includes all fields in the right pane of the *Layouts* page.
- **c** To remove a field in the layout theme, double-click a field in the right pane to move it to the left pane. Repeat this step as needed.
- **d** To change the order of fields in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.
- **10** Click the **Wrap** check box in *Report Paper Size Estimate* for each field you want text to wrap, such as *Inspection Remarks*.
- **11** Click **Paper Settings** to open the property settings panel (Figure 16-33).

Paper Size		Font	Size Min Max	Column Spacing
Letter, 8 1/2 x 11 in.	-	Calibri	- 6 4	2 🗘
Orientation	Left Margin			
Portrait O Landscape	0.3 🗘			
Print Options				1
Reprint group headings on eac	h page		Print filter/option settings in report heading	
Show number of records printe	d in each group		Include signature line	
Print current date in report foo	ter			

#### Figure 16-33. Paper Settings

12 Set options as needed in the *Paper Settings* and *Print Options* group boxes.Adjusting the **Min** and **Max** settings in the *Font* group box allows you to increase or decrease the font size.

- **13** To adjust the width of report columns, follow these steps:
  - a Place the mouse over a column boundary to change the cursor to a horizontal resize cursor (-).
  - **b** Click and drag a column boundary to adjust the width of the report column.
  - **c** If the adjustment extends report columns outside of the page, a red "out of bounds" message displays (Figure 16-34). Click and drag the column boundary to make adjustments as needed to clear the message.

	= 100)		1 Out of Bounds 🕤 First Occurance
Nitionally View Retaile Newton	Non Man Ling Mar Mar		
Wrap Wra	Wrap	Wrap	V Wrap
Paper Settings			
Paper Size	Font	Size Min Max	Column Spacing
Letter, 8 1/2 x 11 in.	- Calibri	- 4 4 🗘 10	2 \$
Orientation	Left Margin		
Portrait  Landscape	0.3 🗘		
Print Options			
		Print filter/option settings in report heading	
🔲 Reprint group headings on each p	age		

Figure 16-34. Out of Bounds Warning

- **14** Click the **Wrap** check box in the group box labeled *Report Paper Size Estimate* for each field you want text to wrap, such as *Inspection Remarks*.
- **15** Click **Save and Close** to save changes and return to the report options window.
- **16** To apply the layout theme to the report, click the down arrow in **Select Layout Theme** and select the new layout theme in the selection list.

#### Adding a Summary Report Layout Theme

A layout theme is a group of named settings saved for later use. You can define a *Summary* layout theme with report settings that define the table row, column, and data fields as well as the aggregate functions (average, sum, count, and percentage) used to calculate data fields in a *Summary* report. Summation fields, field operators, filters, drilldown fields, drilldown sorting fields, horizontal and vertical field groupings, as well as

paper settings can all be saved in a Summary layout theme.

A *Summary* report presents data in a cross tab table view. It provides a "big picture" of pipeline and facility data by summarizing and analyzing the data. You can control how PCS Axis summarizes the data, for example by sum, average, count, or percentage. Using a *Summary* report can help with analyzing data, making comparisons, and detecting patterns in the pipeline system.

To add a *Summary* layout theme, follow these steps:

Select one or more pipeline segments in the *Select ROWs* window (Figure 16-35). Choose pipeline segment(s) with facilities you want to include in the report. Click
 Save to close the window.

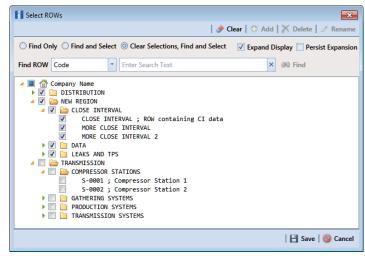


Figure 16-35. Select ROWs

- 2 Choose the report you want to work with in the *Reports/Graphs* menu. Click **Report/Graphs** and then select a report, such as the **Test Point Inspection Report**.
- 3 Click the Summary tab <u>Summary</u>, then the Customize tab <u>*F* Customize</u>.
- 4 Click the **Summary Layouts** button **Summary Layouts** to open the *Summaries* page (Figure 16-36, page 754).

T	Fest Point Inspection Report ×		
	Columnar Summary	Graph	📌 Customize
	Summaries: Test Point Inspection R	eport 🛛 🕴 Save and Close 🛛 Save 🗋 Save 🗋 Save 🗎 Save	A Revert S Cancel T Columnar Layouts
	2 Options		🔏 Summary Layouts
	Select Summary Theme 💿 [PCS] Co	mpliance Report •	Copy To Clipboard 🔀 Graph Layouts
	Search For Field	× Horizontal Groups 0 Vertical Grouping	🖉 Clear 🕕 🔨 Sorts
	All Fields     ROW Permanent Information F	Collapsed Field Caption Field	💎 Filters
	Test Point Facility Fields	System	V Close
	Test Point Information Fields     Test Point Inspection Fields	ROW Code      Coption      Coption	
		· · · · · · · · · · · · · · · · · · ·	
		Row Count: 3	
	🔝 Full View   📀 Add Summation		
	🖌 Active TPs	Active TPs	Copy X Delete
	🗸 TPs Surveyed	© Options	Copy   / Contra
	Percent Surveyed	Caption Active TPs Filters	L 🖉 Edit
	🗹 TPs Below Criteria	Use Only The Latest Insp Maint Record Optional Required Runtime Filter	
	🗹 TPs Above Criteria	Before Summation     After Summation     After Summation	
	💞 TPs Requiring P/S or IRF	Field Operations	
	🛷 Percent Above Criteria - TPs	Total facilities.	
	💞 Total Miles	Single	1.1.1
	Miles Below Criteria	Orilldown Fields     Drilldown Fields     Drilldown Fields     Drilldown Fields	/ Edit
	Miles Above Criteria	1. Invitepost	
	Percent Above Criteria - M		
		© Count ROWs ◎ Total ROWs ◎ Count Facilities ⑧ Total Facilities	
		Count Inspections O Count Maintenance	
		Drilldown Sorte	🖉 Edit
		Compare Summations  Percentage Elect Summation  I. ASC ROW Code	<u> </u>
		Difference     Difference     Difference	
		Difference Second Summation 3. ASC Pipe	
		Sum Of Total Facilities Field Completed Maintenance *	
		Held Completes manifemence	

Figure 16-36. Summary Layouts

5 Click 🛟 Add to open the New Summary dialog box (Figure 16-37).

New Summary
Enter Theme Name:
My Summary Theme_1
Public Copy Content
Copy Fields From Theme:
💿 [PCS] Compliance Report 🔹
💞 OK \mid 🔞 Cancel

Figure 16-37. New Summary

**6** Type a name for the *Summary* layout theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the summary theme saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

- 7 If you want to copy fields from another Summary layout theme, click the **Copy Content** check box and then click the down arrow in **Copy Fields From Theme** and select a theme in the selection list.
- 8 Click **W** OK to save changes and return to the Summaries page.
- **9** Complete the following steps to select one or more PCS Axis fields to be used as horizontal table rows in the report. Field selections display in the *Horizontal Groups* panel. In a *Summary* report, these fields display horizontally on the left side of the report.
  - a Click the toggle arrow ▶ for a field category in the *Search For Field* panel to view a list of fields available for selection. For example, click ▶ **All Fields**.
  - **b** Double-click a field in the *Search For Field Panel* to move it to the *Horizontal Groups* panel. Repeat this step as needed.

As an example, when selecting *System* and *ROW Code*, each time a *System* table row is included in the report, a *ROW Code* table row is also included.

- **c** If you want the data collapsed for a table row when you first open the *Summary* report, click the **Collapsed** check box for that table row in the *Horizontal Groups* panel. An expand/collapse button is available when viewing the report to expand and collapse data as needed.
- **d** If you want to rename the caption of a table row, type a name in the **Caption** field for that table row. When this field is empty, the caption of the table row uses the default PCS Axis description.

**NOTE:** Clicking the (i) information button in the *Horizontal Groups*, *Vertical Grouping*, or *Field Operations* panel opens a window with information related to current property settings.

e To change the order of fields in the Horizontal Groups panel and subsequently in the Summary report, click and drag a field to a new position in the grid. Or, select a field and then click the up ( ) or down ( ) button.

**10** *Vertical Grouping* is an optional setting. It allows you to group horizontal table rows by a vertical column. For example, selecting *Inspection Date* displays data by *Month*, *Quarter*, or *Year* based on the *Data Group Interval* option you select.

To group horizontal table rows by a vertical column, complete the following steps in the *Vertical Grouping* panel:

- **a** Choose a PCS Axis field you want to use as the vertical column. Click the down arrow in **Field** and select a field in the selection list.
- **b** If you want to use a different caption other than the name of the selected PCS Axis field, type a name in the Caption field.
- **11** Click **Full View** to hide the field selection, *Horizontal Groups*, and *Vertical Grouping* panels. Clicking *Full View* again displays these panels.
- **12** Identify how you want data calculated. Set up one or more summations in the following manner:
  - a Click 🛟 Add Summation.
  - **b** Choose an aggregate function used to calculate data fields (average, sum, count, or percentage). Click an option in any of the following group boxes: *Single, Composite,* or *Sum Of Total Facilities.*
  - **c** If you selected an option in the group box labeled *Single* or *Sum Of Total Facilities*, click the down arrow in **Field** and select the PCS Axis field you want to use in the calculation.
  - d If you want to compare two summations, select Percentage or Difference in the Compare Summations group box. Then click the down arrow in the field First Summation and select a summation. Click the down arrow in the field Second Summation and select the second summation.
  - e Repeat **step 12 a** through **d** as needed to add additional summations.

**NOTE:** To delete a summation, select a summation tab and then click **X Delete.** Click **Yes** when the *Delete* message displays.

- **13** If you want to filter the data output in the report, click the down arrow in the field **Optional Required Runtime Filter** and select a PCS Axis field in the selection list. Or, click **Edit** to set up an *AND* or *OR* filter group. See *Working with Report Themes and Filter Groups* (page 747) for related information.
- 14 Click **Edit** in the *Drilldown Fields* group box and select one or more fields you want to use as drilldown fields. When viewing the report in PCS Axis, clicking a drilldown field displays another data view with more information about the field.
- 15 Click Edit in the *Drilldown Sorts* group box and select one or more fields that determine how data sorts. Click ASC ASC to sort data in ascending order or DESC DESC to sort in descending order.
- **16** Click **Paper Settings** and set paper, font, and print options as needed.
- 17 Click 💾 Save.

#### Adding a Report Sort Theme

A sort theme determines how PCS Axis sorts and groups records in the report. Adding a sort theme allows you to choose which field(s) to sort and group records by, such as sorting by name or ROW code. A sort theme also allows you to set options for sorting records alphanumerically in either ascending or descending order. Including a group filter in the sorting theme allows you to organize records in a group for easier analysis.

To add a report sort theme, follow these steps:

 Select one or more pipeline segments in the Select ROWs window (Figure 16-38). Choose pipeline segment(s) with facilities you want to include in the report. Click
 Save to close the window.

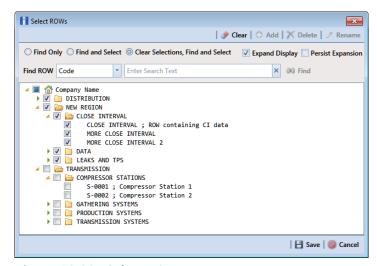


Figure 16-38. Select ROWs

2 Choose the report you want to work with in the *Reports/Graphs* menu. Click **Reports/Graphs** and then select a report, such as *Test Point Inspection Report*, to open the report options window (Figure 16-39).

CS Axis				
Modules Data Entry Reports / Graphs Tool:	Field Computer Help O Cathodic Protection Data Manager (CPDM)	Welcome John Smith   🕑   🔀 Log		
Test Point Inspection Report ×				
Columnar Summary Gr	aph	of Customi		
Test Point Inspection Report	ahu	Add Favorite 🛛 😓 Print 🗋 Expo		
t) Based On		I M And Layoute   St. Hund   Cabo		
Based Off     Selected ROWs				
Ø Route				
🔢 View				
Select Layout Theme				
[PCS] Test Point Inspections	•			
🗟 Sort Options				
Select Sort Theme	Sort Dates			
[PCS] ROW Code and Milepost	<ul> <li>Oldest First</li> <li>Newest First</li> </ul>			
Insert Lines Between Groups	Page Breaks			
None	None			
Options Only include facilities with inspections during the reporting time period Only include facilities with inspections during the reporting time period				
Filter Options: @ All inspections that meet the filter criter @ Apply other filters to the most recent in: The most recent inspection after the filt Indicate missing inspection readings	pection found within report timeframe			
🍸 Filters		O New 'And' Group O New 'Or' Group		
0		•		
Currently Active Facilities Only Currently Inactive Facilities and Facilities	on Currently Inactive ROWs			
Relative Milepost is between	g/ and			
Inspection Date is between	and The second s			
Survey is equal to				
Periodic Survey is equal to	*			
Periodic Survey Year is equal to	· ·			
Technician is equal to	19			

Figure 16-39. Report Options

3 Click the **Customize** tab *F* Customize then the **Sorts** button **Sorts** to open the *Sorts* page (Figure 16-40).

Columnar Summary Graph Sorts: Test Point Inspection Report		😤 Save and Close   💾 Sav	e   🔿 Add   🗙 Delete   🖘 R	evert   🚳 Cancel	Custom
Select Sort Theme PCS) Address	×			Add group	Summary Layouts Graph Layouts
City Address (Hidden)				1 X 1 X	V Sorts
Sench for Fridu. A Trebil DOV Fernancer Information Fridis Tet Point Soliding Fridis Tet Point Myrcolino Fridis Tet Point Myrcolino Fridis	× () ()	ROW Code Relative Milepot Pipe Inspection Date	ASC	(a) (c) (c)	Cose

Figure 16-40. Sorts

4 Click 🛟 Add to open the New Sort Layout dialog box (Figure 16-41).

New Sort Theme
Enter Theme Name:
My Report Sorting Theme_1
V Public Copy Content
Copy Fields From Theme:
😵 [PCS] Address 🔹
Groups in the Selected Theme:
City Address
Fields in the Selected Theme:
ROW Code
Relative Milepost Pipe
Inspection Date
V OK   🚳 Cancel

Figure 16-41. New Sort Layout

**5** Type a name for the sorting theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

**NOTE:** Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it.

- 6 Select a theme with fields you want to copy to the new theme. Click the Copy Content check box and then click the down arrow in Copy Fields From Theme and select a theme in the selection list.
- 7 Click **V** OK to save changes and return to the Sorts page.
- 8 To choose one or more fields for sorting records in the report, follow these steps:
  - a Click the toggle arrow ▶ for a field category in the left pane of the window to view a list of fields available for selection. For example, click ▶ All Fields.
  - **b** Double-click a field listed in the left pane to move it to the right pane. Repeat this step as needed. The sorting theme includes all fields listed in the right pane.
  - **c** If you want to remove a field in the sorting theme, double-click a field listed in the right pane to move it to the left pane. Repeat this step as needed.

- Select a sorting method for each field listed in the right pane. To sort grid records in ascending order, click the toggle button to select ASC ASC . To sort in descending order, click the toggle button to select DESC DESC.
- 10 To change the order of fields listed in the right pane and subsequently in the grid, click and drag a field to a new position in the list. Or, select a field and then click the up ( ) or down ( ) button.
- **11** Complete the following steps to add a new group with one or more fields that determine how records sort in the report:
  - a Click 🛟 Add group to add a new group (Figure 16-42, page 761).

**NOTE:** Clicking the *P* edit icon for an existing group (such as *City*) opens a group box with current settings you can edit if needed.

- Select which PCS Axis field starts the new group when that field's value changes. Click the down arrow in the field Start a new group when this value changes and select a field in the list.
- **c** If you want to add another field in the group, click **• Add Additional Field**. Then click the down arrow and select a field in the selection list. The title bar of group includes the name of each field (Figure 16-42, page 761).
- **d** Choose a sorting method for the new group. To sort the group in ascending order, click the toggle button to select **ASC ASC**. To sort in descending order, click the toggle button to select **DESC**.
- To change the position of the new group within the set of other groups in the theme, click the up < or down < button. PCS Axis processes groups in descending order beginning with the group at the top of the set.</li>
- **f** To apply optional settings to the new group, click the check box for the following options as needed:
  - Click the check box **Print group field in group header** to have the group name print as a heading at the beginning of each group.
  - Click the check box **New page for each group** to have each group print on a new page.
  - Click the check box **Print sums in group footer** to have the total number of records in a group print at the end of each group.

- g Choose which fields to include in the new group. Click the toggle arrow b for a field category in the left pane of the window to view fields available for selection. For example, click b All Fields.
- **h** Double-click a field listed in the left pane to move it to the right pane, such as *Facility ID* shown in the next figure. Repeat this step as needed. The theme includes all fields listed in the right pane.
- i Choose a sorting method for each field added in the new group. To sort fields in ascending order, click the toggle button to select **ASC** ASC. To sort in descending order, click the toggle button to select **DESC**.
- j To change the position of fields in the new group, click the up 📀 or down 🕤 button.
- **12** Click **P** Save and Close to save changes and return to the report options window.
- 13 To apply the sorting theme to a report, click the down arrow in Select SortTheme and select the sorting theme in the selection list.

PC	S Avis	_ D <mark>_ X</mark>
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🕜 Cathodic Protection Data Manager (CPDM) Welcome J	ohn Smith   🕑   🔀 Log Out
Q	Test Point Inspection Report ×	
	Columnar Summary Graph	🕹 Customize
	Sorts: Test Point Inspection Report   🔐 Save and Close   💾 Save   🕤 Add   🗡 Delete   🗠 Revert   🎯 Cancel	Columnar Layouts
	Select Sort Theme	Summary Layouts
	City P   X	Graph Layouts
	Address (Hidden)	Sorts
		Y Filters
		Close
	Start a new group when this value changes Additional fields displayed in group	
	Tacing Acave	
	ASC     Facility Type     Facility Type     Facility Type	
	Set This group head in group heads	
SWs	Print sums in group footer	
Selected ROWs 	Add Additional Field	
Sele	Search For Field X ROW Code ASC	
	All Fields     Image: A A A A A A A A A A A A A A A A A A A	
	ROW Permanent Information Helds     Facility ID     ASC     Test Point Facility Fields     Pipe     ASC	
	Test Point Inspection Fields      Inspection Date	
	$\odot$	
	$\odot$	

Figure 16-42. Sort Theme Groups

#### Adding an AND Filter Group

An AND filter group is a named set of one or more filters that affect the data output of a report. Adding an AND filter group produces a subset of records that meet *all* filter conditions. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an AND filter group, follow these steps:

Select one or more pipeline segments in the Select ROWs window (Figure 16-43).
 Click Save to close the window.

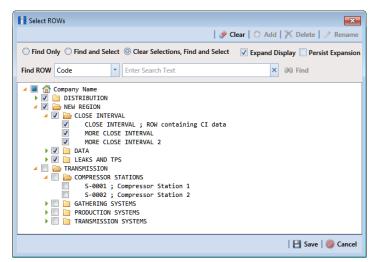


Figure 16-43. Select ROWs

2 Choose the report you want to work with in the *Reports/Graphs* menu. Click **Report/Graphs** and then select a report, such as *Test Point Inspection Report*, to open the report options window (Figure 16-44).

PCS	i Axis				
File	Modules Data Entry Reports / Graphs Tools Field Compu	ter Help 💿 Cathodic Protection Data Manager (CPDM)	Welcome John Smith   🕺   🔀 Log Out		
Q	Test Point Inspection Report 🗙				
	Columnar Summary Graph		+ Customize		
	Test Point Inspection Report		😭 Add Favorite 🗟 Print 📄 Export		
	Based On				
	Selected ROWs				
	Ø Route				
	🔡 View		<u> </u>		
	Select Layout Theme				
		*			
	Sort Options				
	Select Sort Theme  Figure 2 (PCS) ROW Code and Milepost	Sort Dates			
	Insert Lines Between Groups	Page Breaks			
		None     T			
2	Options				
Selected ROWs	Chapter of the second s				
E :	Filter Options:				
lect	All inspections that meet the filter criteria	No. of A			
s	<ul> <li>Apply other filters to the most recent inspection found</li> <li>The most recent inspection after the filter criteria has been specified as the specified of th</li></ul>				
	Indicate missing inspection readings	an ma			
	🝸 Filters		New 'And' Group        New 'Or' Group		
	[o		0		
	Currently Active Facilities Only				
	Currently Inactive Facilities and Facilities on Currently Ina				
	Relative Milepost is between	/ and			
	Inspection Date is between	- 🛄 and - 🛄			
	Survey is equal to	×			
	Periodic Survey is equal to	*			
	Periodic Survey Year is equal to	·			
	Technician is equal to	9			
	Ľ				

Figure 16-44. Report Options

**3** Click the **Customize** tab **Customize**, and then the **Filters** button **Filters** to open the *Filters* page (Figure 16-45).

S Axis	
Modules Data Entry Reports / Graphs Tools Field Computer Help 💫 Cathodic Protection Data Manager (CPDM) Welco	me John Smith   🤨   🔀 Log
Test Point Inspection Report X	
	🥜 Customi
😑 🛛 Filters: Test Point Inspection Report 🛛 🖓 Revert   🌚 Car	cel 🕂 Columnar Layouts
1 New 'And' Group 1 New 'Or' G	oup 🧝 Summary Layouts
Filter Group Caption	Graph Layouts
Currently Active Facilities Only	Sorts
Currently Inactive Facilities and Facilities on Currently Inactive ROWs	T Filters
Relative Milepost Is between [ ] and [ ]	Close
P Inspection Date is between [ ] and [ ]	<b></b>
Periodic Survey Is equal to [ ]	
Periodic Survey Year Is equal to [ ]	
P Technician Is equal to [ ]	

Figure 16-45. Filters

4 Click () New 'And' Group to open the filter properties group box (Figure 16-46).

	Iodules Data Entry Reports / Graphs Tools Field Computer Help 💿 Cathodic Protection Data Manager (CPDM) Welkome Jot fest Point Inspection Report ×	nn Smith   🕑   🔀 Log
	Columnar Summary Graph	📌 Customiz
	= Filters: Test Point Inspection Report   💾 Save and Close   💾 Save   🖘 Revert   🚳 Cancel	🕂 Columnar Layouts
	🛈 New 'And' Group   💷 New 'Or' Group	🍒 Summary Layouts
	Filter Group Caption	🞽 Graph Layouts
	Currently Active Facilities Only	M Sorts
	Currently Inactive Facilities and Facilities on Currently Inactive ROWs	T Filters
	Relative Milepost Is between [ ] and [ ]	🔀 Close
	P Inspection Date Is between [ ] and [ ]	
	Survey Is equal to [ ]	
1	Periodic Survey Is equal to [ ]	
	Periodic Survey Year Is equal to [ ]	
	P Technician Is equal to [ ]	
	Filter Group Caption	
	X AC IRF Is expected, but not recorded	
	Filter Is Always On	
	ACIRF   Is expected, but not recorded	
	Enter Custom Filter Caption	

Figure 16-46. New 'And' Filter Group

- 5 Type a name for the filter group in the Filter Group Caption field.
- **6** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- **7** When adding a date filter, such as *Inspection Date Is Between* (Figure 16-47), set a date range using a calendar or dynamic dates in the following manner:

pection Date Is between [	] and [ ]			
	10101 1			
ilter Is Always On				×
nspection Date	<ul> <li>Is Between</li> </ul>	*	- 🗐 and	- 11
		rspection Date - Is Between	rspection Date - Is Between -	rspection Date • Is Between • and

Figure 16-47. Inspection Date Is Between 'And' Filter

- **a** To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
- **b** To set a date range using dynamic start and end dates, click the **a** calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- 8 If you want the filter to remain on for all sessions of the report, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the report options page using the filter's check box.
- 9 Type a name for the filter in the field Enter Custom Filter Caption.
- **10** If you want to set up additional filter criteria for the filter group:

- a Click 🛟 Add to open another filter properties group box.
- **b** Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 5** through **step 9** to set up filter criteria.
- **11** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

12 Click 💾 Save and Close to return to the report options window.

#### Adding an OR Filter Group

An OR filter group is a named set of one or more filters that affect the data output of a report. Adding an OR filter group produces a subset of records that meet *any* filter condition. PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group.

To add an OR filter group, follow these steps:

 Select one or more pipeline segments in the Select ROWs window (Figure 16-48). Click Save to close the window.

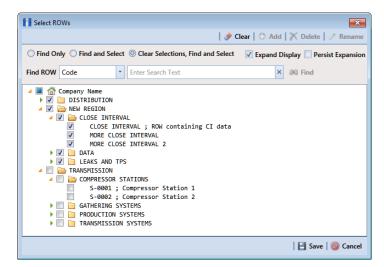


Figure 16-48. Select ROWs

2 Choose the report you want to work with in the *Reports/Graphs* menu. Click **Report/Graphs** and then select a report, such as *Test Point Inspection Report*, to open the report options window (Figure 16-49).

1 PC	S Axis		
File	Modules Data Entry Reports / Graphs Tools Field Com	puter Help 🔘 Cathodic Protection Data Manager (CPDM)	Welcome John Smith 🛛 😢 Log Out
Q	Test Point Inspection Report ×		
	Columnar Summary Graph		📌 Customize
	Test Point Inspection Report		😭 Add Favorite   😓 Print   📑 Export
	🗈 Based On		
	<ul> <li>elected ROWs</li> <li>Route</li> </ul>		
	🔢 View		
	Select Layout Theme		
	[PCS] Test Point Inspections	×	
	🖄 Sort Options		
	Select Sort Theme	Sort Dates	
	[PCS] ROW Code and Milepost	Oldest First     Newest First	
	Insert Lines Between Groups None	Page Breaks	
	(i) Options	• None •	
Ň	<ul> <li>Only include facilities with inspections during the reportir</li> </ul>	a time nation	
Selected ROWs	Filter Options:	g une period	
ele	Apply other filters to the most recent inspection foun	d within report timeframe	
S.	The most recent inspection after the filter criteria has	been met	
	Indicate missing inspection readings		
	💡 Filters		New 'And' Group      New 'Or' Group
			•
	Currently Active Facilities Only Currently Inactive Facilities and Facilities on Currently In	nactive ROWs	
	Relative Milepost is between	g/ and g/	
	Inspection Date is between	- iii and	
	Survey is equal to	*	
	Periodic Survey is equal to	*	
	Periodic Survey Year is equal to	*	
	Technician is equal to	I	

Figure 16-49. Report Options

3 Click the **Customize** tab **Customize** then the **Filters** button **Filters** to open the *Filters* page (Figure 16-50).

		y Reports / Graph	s Tools I	leid Computer	Help	Cathod	ic Protection [	Data Manager (	CPDM)	Welcome J	John Smith   🔨   🔀 Log
Test Poir	nt Inspection	n Report ×									
Col											🥜 Customi
e F	ilters: Tes	t Point Inspection I	Report					🛛 💾 Save an	d Close 🛛 💾 Save 🛛 🖘	Revert S Cancel	Columnar Layouts
									New 'And' Group	🔘 New 'Or' Group	👢 Summary Layouts
	Filter Grou	p Caption								0   X	Graph Layouts
10	Currently	Active Facilities On	ly								🐁 Sorts
0	Currently	Inactive Facilities ar	nd Facilities o	n Currently Ina	ctive ROWs						Y Filters
0	Relative N	Ailepost Is between	[ ] and	[ ]							Close
6	<sup>2</sup> Inspection	n Date Is between [	] and [	1							
0	Survey Is	equal to [ ]									
0	Periodic S	Survey Is equal to [	1								
0	Periodic S	Survey Year Is equal	to [ ]								
0	<sup>7</sup> Technicia	in Is equal to [	1								

Figure 16-50. Filters

4 Click () New 'Or' Group to open a filter properties group box (Figure 16-51).

PC	3 Axis	- • •
File	Modules Data Entry Reports / Graphs Tools Field Computer Help 🔨 Cathodic Protection Data Manager (CPDM)	Welcome John Smith   😣   🔀 Log Out
Q	Test Point Inspection Report 🗙	
		📌 Customize
	🗧 Filters: Test Point Inspection Report 🛛 🛛 🖁 Save   🖓 Revert   🖉	S Cancel 🔠 Columnar Layouts
	① New 'And' Group   ③ New	r 'Or' Group 🕱 Summary Layouts
	Filter Group Caption	Graph Layouts
	Currently Active Facilities Only	V Sorts
	Currently Inactive Facilities and Facilities on Currently Inactive ROWs	T Filters
	Relative Milepost Is between [ ] and [ ]	Close
	P Inspection Date Is between [ ] and [ ]	
Selected ROWs	Survey Is equal to [ ]	
ted R	Periodic Survey Is equal to [ ]	
ielect	Periodic Survey Year Is equal to [ ]	
<sup>o</sup>	/ Technician Is equal to [ ]	
	Include records that match any of these conditions	olX
	AC IRF Is expected, but not recorded	
	Filter Is Always On	×
	Image: ACIRF     -     Is expected, but not recorded     -       Enter Custom Filter Caption     -	- 11 1

Figure 16-51. New 'Or' Filter Group

- **5** Type a name for the filter group in the field **Include records that match any of these conditions**.
- **6** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
- 7 When adding a date filter, such as *Inspection Date Is Between* (Figure 16-52), set a date range using a calendar or dynamic dates in the following manner:

E	Inspection Date Is between	[ ] and [ ]			
	🔲 Filter Is Always On				×
	Inspection Date	<ul> <li>Is Between</li> </ul>	*	• 🔟 and	- [

Figure 16-52. Inspection Date Is Between 'Or' Filter

- **a** To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
- **b** To set a date range using dynamic start and end dates, click the **iii** calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- 8 If you want the filter to remain on for all sessions of the data entry grid, select the check box **Filter is Always On**. When this check box is not selected, toggle the filter on and off in the options page using the filter's check box.
- **9** Type a name for the filter in the field **Enter Custom Filter Caption**.

- **10** If you want to set up additional filter criteria for the filter group:
  - a Click 🛟 Add to open another filter properties group box.
  - **b** Type a name for the filter in the field **Enter Custom Filter Caption**. Then repeat **step 5** through **step 9** to set up filter criteria.
- **11** To move a filter to a different position in the filter group or a filter group to a different position in a group of filters:
  - **a** Point the mouse at the filter handle  $\parallel$  to change the cursor to a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or the filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

**12** Click **P** Save and Close to return to the report options window.

### Editing and Arranging Filter Groups

PCS Axis processes filters in a filter group in descending order beginning with the filter at the top of the filter group. Information in this section explains how to edit filter property settings and also how to arrange filters in a group of filters.

Complete the following steps:

 Select one or more pipeline segments in the Select ROWs window (Figure 16-53). Click Save to close the window.

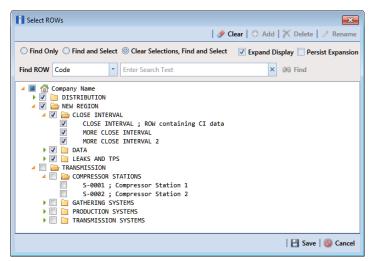


Figure 16-53. Select ROWs

2 Select the report you want to work with in the *Reports/Graphs* menu. Click **Report/Graphs** and then select a report, such as *Test Point Inspection Report*, to open the report options window (Figure 16-54).

1 PC	S Axis			
File	Modules Data Entry Reports / Graphs Tools Field O	nputer Help 🚺 Cathod	ic Protection Data Manager (CPDM)	Welcome John Smith 🛛 🔨 Log Out
Q	Test Point Inspection Report ×			
				of Customize
	Columnar Summary Graph			
	Test Point Inspection Report			😭 Add Favorite   🗟 Print   📄 Export
	🖞 Based On			
	<ul> <li>Generation Selected ROWs</li> <li>Route</li> </ul>			
	🔢 View			<u> </u>
	Select Layout Theme			
	[PCS] Test Point Inspections	•		
	Sort Options Select Sort Theme	Sort Dates		
	[PCS] ROW Code and Milepost	Oldest First      Newest First	t	
	Insert Lines Between Groups	Page Breaks		
	None	* None	-	
s	Options			
Selected ROWs	Only include facilities with inspections during the report of the report of the rep	ng time period		
E E	Filter Options:			
lect	<ul> <li>All inspections that meet the filter criteria</li> <li>Apply other filters to the most recent inspection f</li> </ul>	d within somet timeframe		
Ň	The most recent inspection after the filter criteria			
	Indicate missing inspection readings			
	🍸 Filters			O New 'And' Group O New 'Or' Group
	٥			•
	Currently Active Facilities Only			
	Currently Inactive Facilities and Facilities on Curren			
	Relative Milepost is between	nd 🥖		
	Inspection Date is between	- 🛄 and	- <u>-</u>	
	Survey is equal to	*		
	Periodic Survey is equal to	*		
	Periodic Survey Year is equal to	*		
	Technician is equal to	0		
	<u></u>			

Figure 16-54. Report Options

3 Click the **Customize** tab **Customize** then the **Filters** button **Filters** to open the *Filters* page (Figure 16-55).

PCS Axis e Modules Data Entry Reports / Graphs Tools Field Computer Help O Cathodic Protection Data Manager (CPDM)	Welcome	lohn Smith   🕑   🔀 Log O
Test Point Inspection Report ×		
Columnar Summary Graph		🥜 Customize
😑 Filters: Test Point Inspection Report 🛛 🔛 Save and Close   🔛 Save   🖘 Re	vert 🛛 🕥 Cancel	Columnar Layouts
💿 New 'And' Group   🛛	New 'Or' Group	3 Summary Layouts
Filter Group Caption	οX	🞽 Graph Layouts
Currently Active Facilities Only		🛚 Sorts
✓ Currently Inactive Facilities and Facilities on Currently Inactive ROWs		<b>Filters</b>
Currently hasther Services and Facilities on Currently Inactive ROWs     Factore Milepost is between [ ] and [ ]     Impection Date is between [ ] and [ ]     Surveys Issue to [ ]		Close
Inspection Date Is between [ ] and [ ]		
✓ Survey Is equal to [ ]		
Periodic Survey Is equal to [ ]		
Periodic Survey Year Is equal to [ ]		
Zechnician Is equal to [ ]		

Figure 16-55. Filters

4 Click the edit icon *P* to display a filter's property settings. In the following example, property settings for *Inspection Data Is between* are visible (Figure 16-56).

PCS A		n Smith   🕑   🔀 Log (
ι.T	Fest Point Inspection Report ×	
		📌 Customize
	= Filters: Test Point Inspection Report Save   🖓 Revert   🎯 Cancel	Columnar Layouts
	1 New 'And' Group 1 New 'Or' Group	💈 Summary Layouts
	Filter Group Caption	Graph Layouts
	Currently Active Facilities Only	🐁 Sorts
	Currently Inactive Facilities and Facilities on Currently Inactive ROWs	🝸 Filters
	Relative Milepost Is between [ ] and [ ]	X Close
1	S Inspection Date Is between [ ] and [ ]	
	Filter Is Always On	
	Inspection Date v Is Between v and v and v	
	Enter Custom Filter Caption	
	If g Survey is equal to []	
	III	
	Periodic Survey Year Is equal to [ ]	
	V Technician B equal to [ ]	

Figure 16-56. Inspection Date Is Between

- 5 To delete a filter in a filter group, click the  $\mathbf{X}$  delete button.
- 6 To rename the filter, type a description in the field Enter Custom Filter Caption.
- 7 To change filter criteria, use filter selection fields to select a PCS Axis field, operator, and one or more filter conditions. When adding a date filter, such as *Inspection Date Is Between*, set a date range using a calendar or dynamic dates in the following manner:
  - **a** To set a date range using a calendar, click the down arrow in the start date field to open a calendar and select a date. Repeat this step for the end date field.
  - **b** To set a date range using dynamic start and end dates, click the **a** calculator button in the start date field and set up dynamic date properties. Repeat this step for the end date field. Clicking the calculator button opens and closes dynamic date property fields.
- 8 To enable the filter for all sessions of the report, click the check box Filter is Always On to place a check mark inside the check box. When this check box is not selected, toggle the filter on and off in the report options page using the filter's check box.
- 9 Click the 🔀 close button to close the filter's property settings group box.
- **10** To move a filter to a different position in a filter group, or to move a filter group to a different position, follow these steps:
  - **a** Point the mouse at the handle  $\parallel$  of a filter or filter group to display a vertical resize cursor  $\hat{1}$ .
  - **b** Drag and drop the filter or filter group to a new location.

**NOTE:** PCS Axis processes filters in descending order beginning with the filter at the top of the filter group.

**11** Click **P** Save and Close to return to the report options window.

Notes	

# 17

# Using Synchronization

Information in this chapter explains how to set up and work with PCS Axis synchronization. The information is intended for your company's *Database System Administrator* and PCS Axis users with *SysAdmin, User,* and *Read Only* permissions.

Topics in this chapter include those in the following list:

- About Synchronization (page 776)
- PCS Axis Features Unavailable in a Subscription (page 777)
- Creating the Publication (page 778)
- Adding Subscribers (page 781)
- Configuring a Subscription (page 783)
- Synchronizing a Subscription (page 785)
- Reinitializing a Subscription (page 786)
- Switching Database Connections (page 789)

**Note:** For information about how PCS Axis activates a Bridge license for a subscription (remote client), see *Activating Bridge Import for Operation* (page 15).

## **About Synchronization**

Synchronization uses a Microsoft SQL Server publisher/subscriber database model. The publisher database is the primary database on a network server or host computer (central database server). Each subscription database is a copy of the publication database. Remote users who do not have access to the publication database can update data in a subscription database on their local computer. Frequent synchronization between the publication and subscription databases ensures all PCS Axis users are working with the same data (Figure 17-1).

Synchronization supports one publisher with multiple subscribers running in a clientserver network. Synchronizing data between the publisher and subscribers is achieved using merge/pull replication. Merge replication is used with the publisher database. Pull replication is used with subscriber databases. After the initial snapshot of the publisher database is replicated, subsequent synchronizations only replicate data that has changed since the last synchronization.

**IMPORTANT:** To avoid data conflicts, it is important to synchronize data between the publisher and each subscriber at *frequent intervals*. The subscriber must establish a reliable high-speed connection to the publisher to successfully synchronize data.

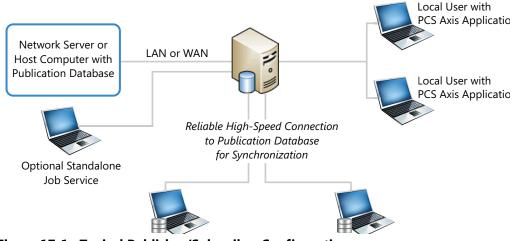


Figure 17-1. Typical Publisher/Subscriber Configuration

**NOTE:** *Hierarchy Rights* set up for a user in *User Management* determines which pipeline segments the user has access. This also applies to remote users with a subscription database on their local computer. See *Setting Up User Management* (page 187) for more information.

## PCS Axis Features Unavailable in a Subscription

Items in the following table identify PCS Axis features unavailable to a remote user with a subscription database (Table 17-1):

#### Table 17-1. PCS Axis Features Unavailable in a Subscription

Select ROWs window:

- Add hierarchy levels
- Add, delete, and rename ROWs

Modules menu:

**Custom Module Management** 

**NOTE:** Creating a custom module is disabled at the subscription level. A custom module created on the publisher is available to synchronized subscriptions however.

Data Entry menu:

- Define Routes
- Define Schedules
- Edit Schedule Settings
- Edit ROW Detail
- Survey Folder Maintenance

Tools menu:

- Bullhorn Bridge
- Fields and UDF Customizations
- Email Notification
- Themes Management
- Facility Type Themes
- User Management
- Options

## **Creating the Publication**

PCS Axis supports one publication with multiple subscriptions for data replication and synchronization. Creating a publication is a function performed by your company's *Database System Administrator*. Adding subscription users is a function performed by the *PCS Axis System Administrator* or a user with PCS Axis *SysAdmin* permissions.

Information in this section explains how to complete the following tasks:

- Confirming Share Folder Access
- Creating the Publication (page 779)

#### **Confirming Share Folder Access**

Before creating the publication, verify the items in the following list are available to ensure successful creation of the publication and subscription databases:

- Share Folder: Confirm with your company's database administrator (DBA) or IT group that a share folder has been added on the server for the publication snapshot files. These files are a "snapshot" of the PCS Axis database and are created at the time you create the publication. They are also updated when changes in the database structure are detected by the Snapshot Agent.
- Share Folder Access and Permissions: Confirm with your company's DBA or IT group that the share folder is accessible to any Windows domain user who will be configuring a subscription. These users require read/write permissions set up for the share folder on the server.

**Note:** The path and name of the server and share folder are needed later when creating the publication. The format for this information appears as: \\ServerName\SnapshotShareFolder

 Snapshot Agent Security: Confirm with your company's DBA or IT group that the Snapshot Agent is set up on the publication to run as a process under a Windows domain account. This requirement is set in the Agent Security page when using SQL Server Management Studio (SSMS). It allows PCS Axis to re-initialize a subscription that has expired.

**IMPORTANT:** An expired subscription occurs when a subscriber does not synchronize within the publication retention period, also referred to as subscription expiration period. The publication retention period is set in the field *Subscription expiration* in the *General* page when using SQL Server Management Studio. When choosing the *Subscription expiration interval*, valid options for selection are *Days*, *Weeks*, or *Months*.

#### Creating the Publication

Information in this section explains how to create the publication on the server (central database server). The information is intended for your company's *Database System Administrator*.

**IMPORTANT:** Microsoft SQL Server must be installed on the computer you plan to create and configure the publication. For more information, refer to the AI document entitled *PCS Axis Client/Server New Installation with Replication*. This document is available for download in the section entitled *Installation & Best Practice Guides* (page 3) of PCS Axis Help.

To create the publication, follow these steps:

- Click Tools > Synchronization > Create Publication to open the Create Publisher dialog box (Figure 17-2).
- 2 Type the server path to the share folder in the field **Enter Snapshot Path** using the format \\ServerName\SnapshotShareFolder.
- 3 Click 💾 OK to create the publication and add snapshot files in the share folder.

**NOTE:** During the process of creating the publication and adding snapshot files, status messages and a percentage completed display in the dialog box.

Create Publisher
Enter Snapshot Path
\\ServerName\SnapshotShareFolder
Status Messages
Progress 0 %
💾 OK   🚳 Cancel

Figure 17-2. Create Publisher

4 Click **V** OK when the message *Publisher Creation Complete* displays (Figure 17-3, page 780).

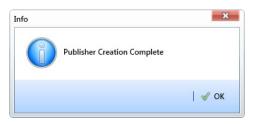


Figure 17-3. Publisher Creation Complete

To view information for the current server and database connection, as well as the PCS Axis software version, click *Help > About PCS Axis*. For more information, see *Viewing Information About PCS Axis* (page 24).

## **Adding Subscribers**

The following information explains how to add one or more subscribers (remote users) who will set up and use a subscription database on their local computer. Information in this section is intended for the *PCS Axis System Administrator* or a PCS Axis user with *SysAdmin* permissions.

To add one or more subscribers, follow these steps:

1 Click **Tools** > **Synchronization** > **Synchronization Configuration** to open the *Sync Configuration* window (Figure 17-4).

**Note:** A list of users previously added as a subscriber display in the *Subscribers* panel of the *Sync Configuration* window. Information in the *Subscription Name* field identifies whether or not a subscription has been set up on a subscriber's local computer. When a subscription has been set up, the name of the subscriber's computer and subscription display in the field. Otherwise, *Unconfigured* displays as shown in the next figure Figure 17-4.

			🗙   bba 😋
rs	Details For John Smith		
		Unconfigured	
	Subscription Name Last Synchronization	Unconfigured	
	Last Synchronization		
	Subscription Active	V	
	Expiration Status	Not Yet Initialized	
		Reinitialize Subscription	hronize First
		Notify Subscriber	
	All Subscriptions		
		Reinitialize All	
		Notify All Subscribers	
	Sync Logs Date range	All	
	Name	iync Date	
			E Row C

Figure 17-4. Synchronization Configuration

2 Click 🛟 Add to open the Add Subscription dialog box (Figure 17-5, page 782).

The dialog box includes a list of PCS Axis users available for set up as a *Subscriber*. Users are also set up as an *Active* user in *User Management* (*Tools > User Management*).

- **3** Select the user you want to add as a subscriber. Then click **OK** to close the dialog box.
- **4** Repeat **step 2** and **step 3** to add additional subscribers as needed. When you finish, click the **x** close button to close the *Sync Configuration* window.

Subscribers can now configure a subscription on their local computer. See *Configuring a Subscription* (page 783) for more information.

3	earch				
	User Name	First Name	Middle Initial	Last Name	Γ
÷	al.jones	AI		Jones	-
	bob.brown	Bob		Brown	
	dave.williams	Dave		Williams	
	1				

Figure 17-5. Add Subscription

## **Configuring a Subscription**

Information in this section explains how to set up a subscription on the local computer of a PCS Axis user who has previously been added as a subscriber in *Sync Configuration* (page 778). The information is intended for PCS Axis users with *User* or *SysAdmin* permissions.

**IMPORTANT:** Because the configuration process transfers a full copy of the publication snapshot to the subscriber's computer, it's recommended that a high-speed reliable connection to the server be available when configuring the subscription. Subsequent synchronizations only update data that has changed between the publication and subscription databases.

To configure a subscription on a subscriber's computer, follow these steps:

 Log on to the computer using the subscriber's login credentials. Then start the PCS Axis software (Start > American Innovations > PCS Axis).

**IMPORTANT:** Microsoft SQL Server must be installed on the computer you plan to create and configure a subscription. For more information, refer to the AI document entitled *PCS Axis Client/Server New Installation with Replication*. This document is available for download in the section entitled *Installation & Best Practice Guides* (page 3)of PCS Axis Help.

- 2 Click **Tools** > **Configure Subscription** to open the *Configure Subscriber* dialog box (Figure 17-6, page 784).
- 3 PCS Axis provides the name of the subscriber's computer in the field Enter Instance Name. Include the name of the local SQL server instance in this field using the following format:

ComputerName\LocalSQLServerInstanceName

**NOTE:** To view the name of the local SQL server instance using Microsoft SQL Server Management Studio (SSMS):

- (1) Start SSMS and connect to the server.
- (2) Right-click the server instance in *Object Explorer* and select *Properties*.
- (3) On the General page, view the SQL server instance name in the Name field.

- 4 If you want to use a different subscription database name than the default name set up previously in system Options (*Tools > Options > General*), type a name in the field **Enter Subscription Database Path**.
- 5 Click 💾 OK to create the subscription database.

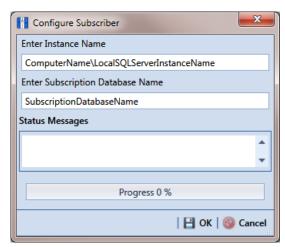


Figure 17-6. Configure Subscriber

6 Click **OK** when the message Subscription Complete Restart displays (Figure 17-7).

When the process completes, the PCS Axis software automatically restarts and then connects the user to the subscription database on the local computer. In SQL Server Management Studio, the name of the subscription database is added in the *Replication/Local Subscriptions* folder in *Object Explorer*.

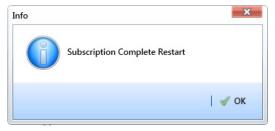


Figure 17-7. Subscription Complete Restart

**Note:** To view information for the current server and database connection, as well as the software version of PCS Axis, click **Help** > **About PCS Axis**. The *About* dialog box displays the current server and database connection in the *Connection* field. The *Version* field identifies the current database and software version. See *Viewing Information About PCS Axis* (page 24).

## Synchronizing a Subscription

Information in this section explains how a subscriber (remote user) can synchronize the subscription database on their local computer with the publication database on the network server. When a subscription database is about to expire, PCS Axis displays a message to notify the subscriber (Figure 17-8).



Figure 17-8. Pending Subscription Expiration

**IMPORTANT:** To avoid data conflicts, it is important to synchronize data between the publisher and each subscriber at *frequent intervals*. The subscriber must establish a reliable high-speed connection to the publisher to successfully synchronize data.

To synchronize a subscription, follow these steps:

1 Click **Tools** > **Synchronize Now** to open the *Synchronize Now* dialog box. Then click **Start** (Figure 17-9).

Synchronize Now
<b>^</b>
Progress 0 %
Start Cancel

Figure 17-9. Synchronize Now

2 Click **V** OK when the message *Synchronization Complete* displays to complete the process (Figure 17-10).

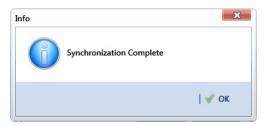


Figure 17-10. Synchronization Complete

## Reinitializing a Subscription

When a subscription database has expired, PCS Axis displays a message on the local computer of the subscriber informing the user their subscription has expired (Figure 17-11).



Figure 17-11. Expired Subscription (Subscriber)

When the PCS Axis SysAdmin is connected to the publication database on the central database server, the message *Subscription Has Expired* displays in the *Expiration Status* field for the subscriber selected in the *Sync Configuration* window (*Tools > Synchronization > Subscription Configuration*). In the following example, the subscription for the selected subscriber John Smith has expired (Figure 17-12).

Sync Configuration				×
				😳 Add   🗡 Delete
Subscribers John Smith	Details For John Smith			
Bob Brown George Wilte Betty Jones	Subscription Name	ComputerName\s	ql server instance:subscription name	
	Last Synchronization	9/15/2014 2:39:34		]
	Last Synchronization Status		at and merged 3 data change(s) (1 insert(s), 2 update(s), 0 delete(s), 0 conflict(s)).	
	Subscription Active	V		
	Expiration Status	Subscription Has Ex	pired	
		Reinitialize Su	ubscription 📳 Reinitialize Subscription And Allow Synchronize First	
		Notify Subscr	iber 🖂 Notify Of Subscription Expiration	
	All Subscriptions			
		Reinitialize Al	Reinitialize All And Allow Synchronize First	
		and the second second	scribers 🖂 Notify All Subscription Expiration	
	Sync Logs Date range:	Today	•	
	Name S	ync Date		
				L
				Row Count: 0
				<u>م</u> ا

Figure 17-12. Expired Subscription (Publisher)

The procedure in this section explains how to re-initialize an expired subscription. The information is intended for the PCS Axis SysAdmin and requires a connection to the publication database on the central database server.

**IMPORTANT:** Because the re-initialization process transfers a full copy of the publication snapshot to the subscriber's computer, it's recommended that the subscriber have a high-speed reliable connection to the publication server when re-initializing the subscription.

Unsynchronized data is lost when re-initializing a subscription. To avoid losing unsynchronized data, first use Bridge to export data on the subscription. Then use Bridge again to import data after re-initialization is complete. See *Using Bridge* (page 491) for more information.

Complete the following steps to re-initialize an expired subscription:

- Click Tools > Synchronization > Synchronization Configuration to open the Sync Configuration window (Figure 17-13).
- **2** Select the name of the subscriber with the expired subscription in the *Subscribers* panel.

Sync Configuration				×
				😌 Add   🗡 Delete
Subscribers	Details For John Smith			
Gnabh e White Jones	Subscription Name Last Synchronization Last Synchronization Status Subscription Active Expiration Status	Subscription Has Expired	nstance.subscription name ing 3 data change(s) (1 insert(s), 2 up ) Reinitialize Subscription An Notify Of Subscription Expiration	
			nitialize All And Allow Synchronize	
	Sync Logs Date range:	All		
	Name		Sync Date	
	ComputerName\sql serve	er instance:subscription name	7/17/2014 10:56:43 AM	*
				×
				Row Count: 2
	Downloaded 1 change(s) in 'Use	on tion. Publisher es us in article 'UserProfile] es es in article 'Domain' es in article 'Domain' es in article 'UserProfile'	L total	-
		up meta data in database 'Donna up meta data in database 'Donna		

Figure 17-13. Sync Configuration

- **3** Complete one of the following steps:
  - a If the subscription database has updated records that have not been synchronized with the publication database, click Reinitialize
     Subscription And Allow Synchronize First.

-or-

- **b** If the subscription database does not need to be synchronized with the publication database, click **Reinitialize Subscription**.
- **4** Click **Ves** when the message *Reinitialize Subscription* displays (Figure 17-14).

The message includes the following information for the subscription: name of the server, primary database, and publication. This is shown in the following figure as *ServerName:DatabaseName:PublicationName*.

Reinitialize Subscription	×
Reinitialize Subscription for ServerName:Database:Pu	blication?
؇ Yes	No 🛛

Figure 17-14. Reinitialize Subscription

5 Click OK when the message Subscription Reinitialized displays to close the dialog box.



Figure 17-15. Subscription Reinitialized

## Switching Database Connections

Subscribers have the option of switching database connections when logging into the PCS Axis software. This feature allows a subscriber to connect either to the subscription database on their local computer or the publication database on the company network server. It is intended for subscribers working from the company main office instead of a remote field office.

**IMPORTANT:** Before switching database connections, the subscriber must first synchronize data between the publication and subscription databases.

To switch database connections, follow these steps:

**1** Synchronize data between the subscription and publication databases. Click **Tools** > **Synchronize Now** (Figure 17-16).

Synchronize Now	×
	<b>^</b>
	•
	Progress 0 %
	riogress o 76
	Start Cancel

Figure 17-16. Synchronize Now

2 Click **V** OK when the message *Synchronization Complete* displays to complete the process (Figure 17-17).

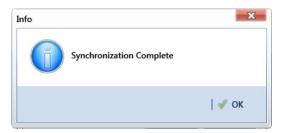


Figure 17-17. Synchronization Complete

- 3 Click 🔀 Log Out in the main menu. Then click 🖋 Yes when the *Logout* message displays.
- 4 When the *Login* window displays, type your Windows password in the **Password** field and then complete one of the following steps to switch database connections (Figure 17-18):
  - **a** To switch to the publication, click the check box **Use Subscription** to clear the check mark.

-or-

- **b** To switch to your subscription, click the check box **Use Subscription** to place a check mark inside the check box.
- **5** Click the login button 🕑 to start PCS Axis.



Figure 17-18. PCS Axis Login

Notes	

# 18

## Managing the Database

Information in this chapter explains how to manage the PCS Axis database. The information is intended for the PCS Axis Administrator or a user with *SysAdmin* permissions. Topics in this chapter include those in the following list:

- Running Database Integrity Check
- Running Reindex Database (page 795)
- Using Data Modification Utility (page 796)

## **Running Database Integrity Check**

In the unlikely event data becomes corrupted in the database, use *Database Integrity Check* to identify and resolve instances of data inconsistencies. The process performs an audit of the database searching for issues that may prevent PCS Axis from loading or performing basic functions. Its purpose is to clean up data issues that may cause problems for users. For example, database issues the auditing process detects and corrects include:

- Orphan records.
- Invalid hierarchy nodes.
- Outdated or incorrect derived fields. See *Working with Derived Fields* (page 226) for information about derived fields.
- Invalid field characters, hierarchy nodes, or folders outside hierarchy levels.
- Duplicate or missing right-of-ways (ROWs) and pipes.
- Blank hierarchy level names and empty or missing hierarchy folders.
- Missing base effective dates (facilities and pipelines).
- Invalid foreign keys in database tables. (A foreign key is a field in a database table that refers to a record in another database table.)

To run Database Integrity Check:

 Click File > Database Integrity Check to open the Data Auditor window (Figure 18-1). Then click ( Run.

The message Running displays during the database audit process.

M Data Auditor	×
	🛛 🙆 Run
Database audit starting Running hierarchy validation. Validating root node. Validating orphans. Validating ophens. Validating top level folders. Validating duplicate leaf nodes. Validating missing leaf nodes. Validating missing leaf nodes. Validating missing folders. Validating missing folders. Running fix for soft delete orphans. Running fix for missing base information records. Found 0 missing base Pipeline Information records. Checking all facilities for missing information. Fixed 0 missing base Facility Information records. Running fix for normalized sub-information data. Creating 0 new records in RectifierNegativeInformation.	
Creating 0 new records in RectifierNegativeInformation. Creating 0 new records in RectifierAnodeInformation. Running invalid foreign key cleanup.	

Figure 18-1. Data Auditor

When the process completes, the results of the database audit display in the *Data Auditor* window (Figure 18-2). You can select and then copy text in the window to the Windows clipboard. The copied text can then be pasted in another software program such as Microsoft Excel or Word.

Data Auditor	×
	📀 Run
Database audit starting	4
Running hierarchy validation.	
Validating root node.	
Validating orphans.	
Validating folders above level count.	
Validating top level folders.	
Validating duplicate leaf nodes.	
Validating missing leaf nodes.	
Validating folder names.	
Validating non-folder names.	
Validating missing folders.	
Validating empty folders.	
Running fix for soft delete orphans.	
Running fix for missing base information records.	
Found 0 missing base Pipeline Information records.	
Checking all facilities for missing information.	
Fixed 0 missing base Facility Information records.	
Running fix for normalized sub-information data.	
Creating 0 new records in RectifierNegativeInformation.	
Creating 0 new records in RectifierAnodeInformation.	
Running invalid foreign key cleanup.	

Figure 18-2. Database Integrity Check Completed

## **Running Reindex Database**

The PCS Axis database uses indexes to accelerate the process of locating records in the database. As you add and delete records, these indexes become fragmented which in turn slow down database performance. The *Reindex Database* process restores database efficiency by updating the indexes.

**IMPORTANT:** Before running *Reindex Database*, it is recommended that you make a backup of the PCS Axis database using Microsoft SQL Server Management Studio (SSMS). For more information about SSMS, see the AI document entitled *PCS Axis Database Backup and Restore*.

#### To run *Reindex Database*:

- Click Tools > Job Service Viewer to open the Job Service Console window (Figure 18-3).
- 2 Click Reindex Database Reindex Database.

e modules outdentry	Reports / Graphs 1	Fools Field Computer	Help 🚫 PC	CS Axis	Welc	ome John Smith	🖲   🔀 Lo
b Service Console 🗙							
Job Type All	•						
lob Service Status							
Status Running							
Status Time 2/27/2014 : License Valid	10:14:48 AM						
Queue					Reindex Database	Current Jobs	Job Histo
Job Type	Direction	State	Last Update		.0		

Figure 18-3. Job Service Console

When a warning message opens, click Yes to continue the reindexing process (Figure 18-4).

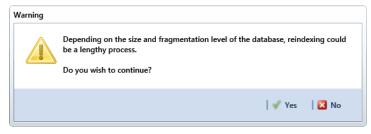


Figure 18-4. Warning Message

Status information displays in the queue while running *Reindex Database* (Figure 18-5). When the process completes, status information then displays in the *Job History* panel.

PCS Axis	ntry Reports / Graphs	Tools Field Computer	Help 🔅 PCS Axis			ome John Smith	
ob Service Console >			PCS AX	•	weice	ome John Smith (	🖤 l 🔽 tog
Job Type All							
Job Service Status							
Status Running							
Status Time 2/27/20	14 10:27:00 AM						
License Valid							
Queue					Reindex Database	Current Jobs	Job History
Job Type	Direction	State	Last Update				
ReindexDataba	e	Running	2/27/2014 10:26:49 AM	8			(
							low Count: 1

Figure 18-5. Reindex Database Running

## Using Data Modification Utility

*Data Modification Utility* is a stand-alone feature that allows you to permanently move pipeline ROW records, including subfacility, inspection, and maintenance records, from one facility to another facility. Use this feature when splitting or combining pipeline segments.

**IMPORTANT:** Only users with SysAdmin privileges will be able to access and use the Data Modification Utility.

Topics in this chapter include those in the following list and are intended for users with *SysAdmin* permissions:

- Moving Facility Records
- Moving Sub Facility Records (page 801)
- Moving Inspections Records (page 803)
- Moving Maintenance Records (page 806)

## Moving Facility Records

Information in this section explains how to move facility records from one ROW to another ROW.

Complete the following steps:

1 Click **Tools** > **Data Modification Utility** to open the *Data Modification Utility* window (Figure 18-6).

PCS Axis			
File Modules Data Entry Reports / Graphs Tools Field Computer H	PCS Axis		Welcome John Smith   🕺   🔀 Log Out
Data Modification Utility ×			
Move			
Selected ROWs	Facility Sub Facility Inspections	Maintenance	🖓 Customize
Find First ROW			Apply S Cancel
Code and Name   Enter Search Text × 30 Find	Facility Types	G-0001 ; Gathering System	Select All 🛷 Clear All
✓ Company Name	(PCS] All Facility Types	ROW Code and Pipe Facility Type	Milepost Relative Milepost
DISTRIBUTION     DISTRIBUTION     DISTRIBUTION	Ad Hoc Theme	G-0001 Rectifier	0 0 🛌
TRANSMISSION	III Select All 🥔 Clear All		
	CPDM		
	V Test Point		
	✓ Rectifier ✓ Foreign Bond		
	Galvanic Anode		
	🗹 Tank		
	VM		
	Valve		
	ACM		
	Atmospheric	U]	
Find Second ROW	ICM		mow Count: 1
Code and Name     Enter Search Text	Coupon Samples	RECTIFIER DEMO 2	📗 Select All   🥩 Clear All
Company Name	V Probe	ROW Code and Pipe Facility Type	Milepost Relative Milepost
DISTRIBUTION	V Inhibitor Injector	RECTIFIER DEMO 2 Rectifier	2 2
NEW REGION     TRANSMISSION	LSM		
	Z Leak Survey		
			-
		4	•
			III Row Count: 1
			]

Figure 18-6. Data Modification Utility - Facility

- 2 Select a ROW in the top *Select ROWs* panel that will be moved to another ROW. This is the source ROW.
- **3** Select a ROW in the lower *Select ROWs* panel where the records will be moved. This is the target ROW. The records from the top panel are moved to the ROW selected in the lower panel.

**NOTE:** You cannot select the same ROW that was selected in the top panel.

- 4 Select the facility type(s) you want to work with using the method described in either **step a** or **step b**:
  - a To select a facility type, click the facility type option button and then click the down arrow and select a facility type in the list, such as [PCS] Rectifier
     Survey (Figure 18-7).

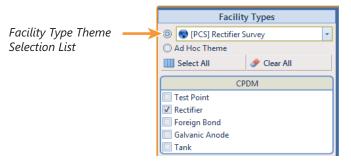


Figure 18-7. Facility Type Theme Option

- **b** To select multiple facility types, click the **Ad Hoc Theme** option button and then click the check box for one or more facility types, such as *Test Point*, *Rectifier*, and *Foreign Bond* (Figure 18-8).
  - Click E Select All to select all the facilities. Click Clear All to clear all facilities.

**Note:** An *Ad Hoc Theme* only applies to the current session and is not saved. A facility type is selected when a check mark appears inside the check box. To clear the check mark, click the check box again.

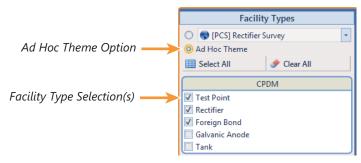


Figure 18-8. Ad Hoc Theme Option

5 Click the Select ROWs and Facility Types bars to close these panels (Figure 18-9).

			a Entry Reports / Gra tility ×	phs Tools Field C	omputer Help	OF PCS Axis	Welcome J	ohn Smith   📵   🔀
Move	1							
		Facil	ity Sub Facili	ity Inspection	s Maintenan	ce		Gustom
								Apply 🔞 Can
		S-00	001 ; Compressor Statio	on 1				Select All   🧈 Clear
			ROW Code and Pipe		Milepost	Relative Milepost	Series	Location Descr
			S-0001	Inhibitor Injector	0.000	0.000		
			S-0001	Coupon	0.001	0.001		
			S-0001	Coupon	0.002	0.002		
			S-0001	Test Point	1.004	1.004		{50CS 1.004} W
			S-0001	Test Point	1.005	1.005		{50CS 1.005} W
			S-0001	Test Point	1.006	1.006		{50CS 1.006} W
			S-0001	Test Point	1.007	1.007		{50CS 1.007} W
٧s			S-0001	Test Point	1.008	1.008		{50CS 1.008} FI
l õ		1	C 0001	T 10 11	1 000	1 000		TOCC 1 DOD F
- Pa	pes							Row Count: 12
Selected ROWs	Facility Types					•••		Hi Kow Count: 12
Sel	i.	S-00	002 ; Compressor Statio	on 2				Select All 🛛 🧈 Clear
	Fac		ROW Code and Pipe	Facility Type	Milepost	Relative Milepost	Series	Location Descr
			S-0002	Coupon	0.000	0.000		
			S-0002	Samples	0.000A	0.000A		
			S-0002	Samples	0.000B	0.000B		
			S-0002	Samples	0.000C	0.000C		
			S-0002	Samples	0.000D	0.000D		
			S-0002	Samples	0.000E	0.000E		
			S-0002	Samples	0.000F	0.000F		
			S-0002	Samples	0.000G	0.000G		
			C 0000	<u> </u>	0.00011	0.00011		•
								Row Count: 8

Figure 18-9. Facility Move Panels

- 6 To customize the layout of the facility move panels, click *P* **Customize**.
  - **a** Add or remove fields as desired.
  - **b** Click **V OK** to save changes and close *Edit Layout* dialog box.
- 7 Move records from the top panel to the lower panel in any of the following ways:
  - **a** Double-click the name of the record.
  - **b** Click the check box next to the name of the record.
  - c Click **Select All** to select all the records.

The records are moved to the lower panel and are highlighted in green (Figure 18-10).

e Mo				phs Tools Field (	Computer Help	😲 PCS Axis	Welcome J	ohn Smith 났 🕑   🔀 L
ata Mo	dificat	tion Ut	ility ×					
Move								
		Facil	ity Sub Facili	ty Inspection	Maintenar	ice		Customiz
	_							Apply S Canc
		_					1 000	
		S-00	01 ; Compressor Static			\		Select All
		_	ROW Code and Pipe		Milepost	Relative Milepost	Series	Location Descri
			S-0001	Test Point	1.009	1.009		{50CS 1.009} FIF
			S-0001	Test Point	1.005	1.005		{50CS 1.005} W/
			S-0001	Coupon	0.001	0.001		
			S-0001	Test Point	1.006	1.006		{50CS 1.006} W/
			S-0001	Test Point	1.007	1.007		{50CS 1.007} W,
			S-0001	Test Point	1.008	1.008		{50CS 1.008} FIF
			S-0001	Test Point	1.010	1.010		{50CS 1.010} FIF
Ws			S-0001	Test Point	1.011	1.011		{50CS 1.011} FU
8		•	C 0001	* 18 1 L	1.010	1.012		FOCC 1 OLD FU
ed	Types							Row Count: 125
lect	Γ							
Se	Facility 7	S-00	02 ; Compressor Statio	n 2		\		Select All 🛛 🧈 Clear A
	Fac		ROW Code and Pipe	Facility Type	Milepost	Relative Milepost	Series	Location Descri
		<b>V</b>	S-0001	Test Point	1.004	1.004		{50CS 1.004} W.
		1	S-0001	Inhibitor Injector	0.000	0.000		
		1	S-0001	Coupon	0.002	0.002		
			S-0002	Coupon	0.000	0.000		
			S-0002	Samples	0.000A	0.000A		
			S-0002	Samples	0.000B	0.000B		
			S-0002	Samples	0.000C	0.000C		
			S-0002	Samples	0.000D	0.000D		
			C 0000		0.0005	0.0005		•
		_ال						Row Count: 88

Figure 18-10. Moved Records

- **8** Move records from the lower panel back to the top panel in any of the following ways:
  - **a** Double-click the name of the record.
  - **b** Click the check box next to the name of the record.
  - c Click E Select All to select all the records.
  - d Click 🥏 Clear All to clear all records.

The records are moved back to the top panel and are highlighted in green.

- **9** To save the changes and permanently move the records, click **H** Apply.
- **10** Click **Ves** in the *Warning* dialog box (Figure 18-11) to complete the move.

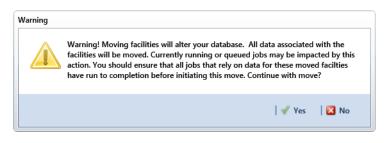


Figure 18-11. Warning Message

## Moving Sub Facility Records

Information in this section explains how to move sub facility records from one ROW facility to another.

Complete the following steps:

1 Click **Tools** > **Data Modification Utility** to open the *Data Modification Utility* window (Figure 18-6).

ta Modification Utility ×		
Selected ROWs	Facility Sub Facility Inspections Maintenance	P Custon
Find First ROW	Select Facility Rectifier * Sel	ect Sub Facility Rectifier Negative
Code and Name    Enter Search Text	nd G-0001 ; Gathering System	Select All 🛷 Clear
A Company Name	ROW Code and Pipe Facility Type Milepost Na	ame Currently Active
<ul> <li>DISTRIBUTION</li> <li>NEW REGION</li> </ul>	G-0001 Rectifier 0	
	je j	
P 10 100W	Row Count: 1	E Row Count:
Find Second ROW	RECTIFIER DEMO 2	🔢 Select All 🛷 Clear
Code and Name   Enter Search Text    N  N  N  N  N  N  N  N  N  N  N  N		ame Currently Active
Company Name DISTRIBUTION	RECTIFIER DEMO 2 Rectifier 2	
<ul> <li>HEW REGION</li> <li>TRANSMISSION</li> </ul>		

Figure 18-12. Data Modification Utility - Sub Facility

**2** Select a ROW in the top *Select ROWs* panel with the subfacility records that will be moved to another facility. This is the source ROW.

**3** Select a ROW in the lower *Select ROWs* panel where the subfacility records will be moved. This is the target ROW. The records from the top panel are moved to the subfacility selected in the lower panel.

		Data Entry Reports	7 Graphs Tools	Field Computer H	elp 🔅 PO	CS A	cis		Welcome John Smith   🔨   🔀
	7								
love									
		Facility Sul	Facility In	spections Mair	ntenance				Custon
	Sele	ct Facility Rectifier			* Select Sub Fa	acility	Rectifier Anode		- Apply 🛞 Car
	_	D-EAST ; East Texas Fi	he						Select All 🖉 Clear
		ROW Code and Pipe		Milepost	Relative		Name	Currently Active	1
	•	PROD-EAST	Rectifier	1.000	1.00 -		1	<b>V</b>	
		PROD-EAST	Rectifier	2.000	2.00		2	V	
		PROD-EAST	Rectifier	3.000	3.00		3	V	
		PROD-EAST	Rectifier	4.000	4.00		4	V	
		PROD-EAST	Rectifier	5.000	5.00		5	V	
		PROD-EAST	Rectifier	6.000	6.00		6	V	
		PROD-EAST	Rectifier	7.000	7.00		7	V	
		PROD-EAST	Rectifier	8.000	8.00		8	V	
٧s		PROD-EAST	Rectifier	9.000	9.00		9	V	
ğ		0000 5107	n	** ***	5.00				
Selected ROWs					Row Count: 38				III Row Count:
ect.					Kow Count: 38	:			E Row Counte
Sel	PRO	D-WEST ; West Texas	Field			-			🔛 Select All 🖉 🛷 Clear
		ROW Code and Pipe		Milepost	Relative		Name	Currently Active	
		PROD-WEST	Rectifier	1.000	1.00 📥				
		PROD-WEST	Rectifier	2.000	2.00				
		PROD-WEST	Rectifier	3.000	3.00				
		PROD-WEST	Rectifier	4.000	4.00				
		PROD-WEST	Rectifier	5.000	5.00				
		PROD-WEST	Rectifier	6.000	6.00				
		PROD-WEST	Rectifier	8.000	8.00				
		PROD-WEST	Rectifier	9.000	9.00				
		PROD-WEST	Rectifier	10.000	10.0				
		0000 WEST	n	10 500					
			_	118	Row Count: 90				TRow Count:

4 Click the Select ROWs bar to close this panel (Figure 18-13).



- **5** To customize the layout of the subfacility move panels, click *P* **Customize**.
  - **a** Add or remove fields as desired.
  - **b** Click **V OK** to save changes and close *Edit Layout* dialog box.
- 6 Select a facility type from the **Facility** drop-down menu.
- 7 Select a subfacility type from the **Sub Facility** drop down menu.
- **8** Move subfacility records from the top right panel to the lower right panel in any of the following ways:
  - **a** Double-click the name of the record.
  - **b** Click the check box next to the name of the record.
  - c Click **Select All** to select all the records.

The records are moved to the lower right panel and are highlighted in green.

- **9** Move subfacility records from the lower right panel back to the top right panel in any of the following ways:
  - **a** Double-click the name of the record.
  - **b** Click the check box next to the name of the record.
  - c Click **Select All** to select all the records.
  - d Click 🧈 Clear All to clear all records.

The records are moved back to the top right panel and are highlighted in green.

- **10** To save the changes and permanently move the records, click **H** Apply.
- **11** Click **Ves** in the *Warning* dialogs box to complete the move.

## **Moving Inspections Records**

Information in this section explains how to move inspections records from one ROW to another.

Complete the following steps:

1 Click **Tools** > **Data Modification Utility** to open the *Data Modification Utility* window (Figure 18-6).

Move					
Find First ROW	Selected ROWs		Facility Sub Facility Inspection	Maintenance	Customi متر ا
Code and Name	Enter Search Text	× ØØ Find	Select Facility Coupon	•	📔 Apply 🚳 Can
Company Name			G-0001 ; Gathering System ROW Code and Pipe Facility Type M	filepost ROW Code and	Pipe Milepost Facility ID
	N				
Find Second ROW	Enter Search Text	× Ø9 Find	Rectifier DeMO 2	Count: 0	Row Count: 1
Company Name			ROW Code and Pipe Facility Type M	lilepost ROW Code and	Pipe Milepost Facility ID
<pre>&gt; DISTRIBUT &gt; NEW REGIO &gt; TRANSMISS</pre>	ION N			۵	

Figure 18-14. Data Modification Utility - Inspections

- **2** Select a ROW in the top *Select ROWs* panel with the inspection records that will be moved. This is the source ROW.
- **3** Select a ROW in the lower *Select ROWs* panel where the records will be moved. This is the target ROW. The records from the top panel are moved to the ROW selected in the lower panel.
- 4 Click the *Select ROWs* bar to close this panel (Figure 18-15).

		s Data Entry Reports ation Utility ×		Their compared Their	PCS .	AXIS			Welcome John	Smith   🔨   🔀 Le
Move	L									
		Facility Sub	Facility Ins	pections Mainte	enance					🖌 🔑 Customiz
	Sele	ect Facility Rectifier			· I				I E	Apply 🕼 Canc
		DD-EAST : East Texas Fie	ble						Se Se	lect All   🧈 Clear A
		ROW Code and Pipe	· · · · · ·	Milepost	Relative Mile		ROW Code and Pipe	Milepost	Facility ID	Inspection [
		PROD-EAST	Rectifier	1.000	1.000 🔺		PROD-EAST	1,000	1602	1/1/2002 12:
		PROD-EAST	Rectifier	2.000	2.000		PROD-EAST	1.000	1602	9/17/2005 1;
		PROD-EAST	Rectifier	3.000	3.000				1602	4/1/2003 12:
		PROD-EAST	Rectifier	4.000	4.000		PROD-EAST	1.000		
		PROD-EAST	Rectifier	5.000	5.000		PROD-EAST	1.000	1602	1/1/1996 12:
		PROD-EAST	Rectifier	6.000	6.000		PROD-EAST	1.000	1602	6/1/2006 12:
		PROD-EAST	Rectifier	7.000	7.000		PROD-EAST	1.000	1602	8/15/2005 1.
		PROD-EAST PROD-EAST	Rectifier Rectifier	8.000	8.000		PROD-EAST	1.000	1602	2/25/2005 1.
ROWS		PROD-EAST	Rectifier	9.000	9,000		DDOD FACT	1.000	1600	7/1/2002 12
¥:	اك				Þ	اك				Þ
ctec	Row Count: 38					E Row Count: 1				
Selected	PROD-WEST ; West Texas Field								lect All   🧈 Clear A	
		ROW Code and Pipe		Milepost	Relative Mile		ROW Code and Pipe	Milepost	Facility ID	Inspection [
	•	PROD-WEST	Rectifier	1.000	1.000 🔺		PROD-WEST	1.000	0606	9/29/2005 1:
		PROD-WEST	Rectifier	2.000	2.000		PROD-WEST	1.000	0606	7/22/2005 1:
		PROD-WEST	Rectifier	3.000	3.000					.,
		PROD-WEST	Rectifier	4.000	4.000		PROD-WEST	1.000	0606	4/1/2003 12:
		PROD-WEST	Rectifier	5.000	5.000		PROD-WEST	1.000	0606	1/1/2004 12:
		PROD-WEST	Rectifier	6.000	6.000		PROD-WEST	1.000	0606	3/20/2006 1.
		PROD-WEST	Rectifier	8.000	8.000		PROD-WEST	1.000	0606	2/15/2005 12
		PROD-WEST	Rectifier	9.000	9.000					
		PROD-WEST	Rectifier	10.000	10.000					1
	1									Þ

Figure 18-15. Inspections Move

- **5** To customize the layout of the inspections move panels, click *P* **Customize**.
  - **a** Add or remove fields as desired.
  - **b** Click **V OK** to save changes and close *Edit Layout* dialog box.
- 6 Select a facility type from the **Facility** drop-down menu.
- 7 Move inspection records from the top right panel to the lower right panel in any of the following ways:
  - **a** Double-click the name of the record.
  - **b** Click the check box next to the name of the record.
  - c Click **Select All** to select all the records.

The records are moved to the lower right panel and are highlighted in green.

- **8** Move inspection records from the lower right panel back to the top right panel in any of the following ways:
  - **a** Double-click the name of the record.
  - **b** Click the check box next to the name of the record.

- c Click **Select All** to select all the records.
- **d** Click 🥏 **Clear All** to clear all records.

The records are moved back to the top right panel and are highlighted in green.

- 9 To save the changes and permanently move the records, click 💾 Apply.
- **10** Click **Ves** in the *Warning* dialogs box to complete the move.

## Moving Maintenance Records

Information in this section explains how to move maintenance records from one ROW to another.

Complete the following steps:

1 Click **Tools** > **Data Modification Utility** to open the *Data Modification Utility* window (Figure 18-6).

Code and Name  Code and Name C	Apply Gustor
Code and Name       Inter Search Text       ØØ Find         Select Facility Coupon       -         Code and Name       Inter Search Text         Milepost       ROW Code and Pipe         Milepost       ROW Code and Pipe         Milepost       Inter Search Text         Inter Search Text       ØØ Find         Row Code and Pipe       Milepost         Row Code and Pipe       Milepost         Row Code and Pipe       Rep         Inter Search Text       ØØ Find         Rectifier Text (Statisting Coupon)       Inter Search Text         Row Code and Pipe       Rectifier Text (Statisting Coupon)         Rectifier Text (Statisting Coupon)       Inter Search Text         Rectifier Text (Statisting Coupon)       Inter Search Text (Statisting Coupon)         Rectifier Text (Statisting Coupon)       Inter Search Text (Statisting Coupon)	Select All 🖉 Clea Repair Found Dat
G. 0001; Gathering System     ROW Code and Fige     ROW Code and Fige     Milepost     ROW Code and Fige     Milepost     ROW Code and Fige     Milepost     Rep       Image: Standard System     Imag	Repair Found Dat
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Find Second ROW Code and Name	TT Row Count
Code and Name    Enter Search Text x 00 Find  RECTIFIER DEMO 2  ROW Code and Pipe Facility Type  Milepost  ROW Code and Pipe  ROW  ROW  ROW  ROW  ROW  ROW  ROW  RO	- now count
ROW Code and Pipe Facility Type Milepost ROW Code and Pipe Milepost Rep	Select All   🧈 Clea
	Repair Found Dat
<pre>&gt; DISTRIBUTION &gt; HERITARISTION &gt; TRANSMISSION</pre>	

Figure 18-16. Data Modification Utility - Maintenance

**2** Select a ROW in the top *Select ROWs* panel with the maintenance records that will be moved. This the source ROW.

**3** Select a ROW in the lower *Select ROWs* panel where the records will be moved. This is the target ROW. The records from the top panel are moved to the ROW selected in the lower panel.

G-0	ct Facility Rectifier 001 ; Gathering System ROW Code and Pipe Fa			-			💾 Appl	dy 1 (SR) Ca
		To all the Town						
	KOW Code and Pipe Fa			Relative Mile	ROW Code and Pipe		Repair Found Date	
	G-0001 Re	acility Type Rectifier	Milepost 0	Relative Mile	KOW Code and Pipe	Milepost	Kepair Found Date	Kepair Initi
SWC								
elected ROWs				Row Count: 1	٩			Row Count
Selected ROWs	401 ; College Station to Au	ustin	Milanast	Row Count: 1			Select All	Row Count
Selected ROWs	ROW Code and Pipe Fa	ustin	Milepost 0.001	Relative Mile	ROW Code and Pipe		Select All	Row Count
	ROW Code and Pipe Fa T-1401 Re	acility Type		Relative Mile			Select All	Row Count
	ROW Code and Pipe         Fa           T-1401         Re           T-1401         Re	austin Facility Type Rectifier	0.001	Relative Mile			Select All	Row Count
Selected	ROW Code and Pipe         Fa           T-1401         Re           T-1401         Re           T-1401         Re	austin Facility Type Rectifier Rectifier	0.001 8.800				Select All	Row Count:
	ROW Code and Pipe         Fa           T-1401         Re           T-1401         Re           T-1401         Re           T-1401         Re           T-1401         Re           T-1401         Re           T-1401         Re	austin Facility Type Rectifier Rectifier Rectifier	0.001 8.800 21.919	Relative Mile 0.001 8.800 21.919			Select All	Row Count   ) I Clea Repair Initia

4 Click the *Select ROWs* bar to close this panel (Figure 18-17).

Figure 18-17. Inspections Move

- **5** To customize the layout of the inspections move panels, click *P* **Customize**.
  - **a** Add or remove fields as desired.
  - **b** Click **V OK** to save changes and close *Edit Layout* dialog box.
- 6 Select a facility type from the **Facility** drop-down menu.
- **7** Move inspection records from the top right panel to the lower right panel in any of the following ways:
  - **a** Double-click the name of the record.
  - **b** Click the check box next to the name of the record.
  - c Click E Select All to select all the records.

The records are moved to the lower right panel and are highlighted in green.

- **8** Move inspection records from the lower right panel back to the top right panel in any of the following ways:
  - **a** Double-click the name of the record.
  - **b** Click the check box next to the name of the record.
  - c Click **Select All** to select all the records.
  - d Click 🥏 Clear All to clear all records.

The records are moved back to the top right panel and are highlighted in green.

- 9 To save the changes and permanently move the records, click 💾 Apply.
- **10** Click **Ves** in the *Warning* dialogs box to complete the move.

Notes	

## System Field Descriptions

Information in this chapter includes a description of PCS Axis fields. Fields that include Activate in the field name share the same description as their counterpart, such as Activate AC Power and AC Power. The Activate AC Power field must be added in the Information grid to enter data in the AC Power field in the Inspections grid.

**NOTE:** The menu path included in some field descriptions may include the placeholder text *<module>*, such as *Data Entry > Edit <module > Data*. The placeholder text indicates the field description applies to more than one module, such as CPDM, VM, ACM, ICM, or LSM.

Name	Description
AC Input	Alternating Current Input. Voltage coming into the rectifier from a power source. See CPDM module, <i>Data Entry &gt; Edit CPDM Data &gt; Rectifier Information</i> grid <i>&gt; Customize &gt; Layouts</i> .
AC P/S (Volts)	Alternating Current Pipe-to-Soil. Potential measurement in volts. AC measurements are recorded using a voltmeter when conducting an AC CIS survey to determine AC interference from sources such as overhead power transmission lines near the pipeline. Also see AC CIS definition in <i>Appendix B</i> (page 845). See ISM, <i>Data Entry &gt; Edit ISM Data &gt; AC CIS</i> .

Table A-1.	System	Field	Descriptions
	<i>byb</i> (c)	11010	Descriptions

Name	Description
AC Power	Alternating Current Power. Power consumed by a rectifier from a power source (watts). This value is system-supplied and calculated as follows:
	AC Power = 3600 x Kh Factor x <u>Revolutions</u> Seconds
	If the value for Kh Factor, Revolutions, or Seconds is unknown, the value for AC Power can be entered. The value can be up to six digits of resolution. Meter Kh carries to Kh Factor field when a reading is created. Add and enable Activate AC Power in the Rectifier Information grid to allow data entry in the Inspections grid. See CPDM module, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Rectifier Information</i> and <i>Inspections</i> grid > <i>Customize</i> > <i>Layouts</i> .
AC Service	Alternating Current Service. History information field that identifies the complete source of incoming AC power; such as data for AC voltage, AC current, number of phases and so on. See CPDM module <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Rectifier Inspections</i> grid > <i>Customize</i> > <i>Layouts</i> .
Account	Power company account number. Can also be the customer's account number for gas service. See CPDM module, <i>Data Entry &gt; Edit CPDM Data &gt; Rectifier</i> <i>Inspections</i> grid <i>&gt; Customize &gt; Layouts</i> .
Activate Cardinal Points	Add this field in the Tank Information grid, then enable the field's check box to allow data entry in the Tank Inspection grid for the following fields: North P/S, South P/S, East P/S, and West P/S. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Tank</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .
Activate Center P/S	Activate Center Pipe-to-Soil Add this field in the Tank Information grid, then enable the field's check box to allow data entry in the field Center P/S in the Tank Inspection grid. See CPDM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt; Tank &gt; Information</i> and <i>Inspection</i> grids <i>&gt;</i> <i>Customize &gt; Layouts</i> .

Name	Description
Activate Intercardinal Points	Add this field in the Tank Information grid, then enable the field's check box to allow data entry in the Tank Inspection grid for the following fields: NE P/S, SE P/S, NW P/S, and SW P/S. See CPDM, <i>Data Entry &gt; Edit</i> <i>CPDM Data &gt; Tank &gt; Information</i> and <i>Inspection</i> grids <i>&gt; Customize &gt; Layouts</i> .
Activate Mid P/S	Activate Mid Pipe-to-Soil. Add this field in the Tank Information grid, then enable the field's check box to allow data entry in the field Mid P/S in the Tank Inspection grid. See CPDM, <i>Data Entry</i> > Edit CPDM Data > Tank > Information and Inspection grids > Customize > Layouts.
Activate Secondary Intercardinal Points	Add this field in the Tank Information grid, then enable the field's check box to allow data entry in the Tank Inspection grid for the following fields: ENE P/S, ESE P/S, NNE P/S, NNW P/S, SSE P/S, WNW P/S, and WSW P/S. See CPDM, Data Entry > Edit CPDM Data > Tank > Information and Inspection grids > Customize > Layouts.
Address	System calculated field based on information entered in the following fields: Address Post-Direction; Address Pre-Direction; Address Street; Address Street Number; and Address Suffix. This field is available for use in all modules and can be added in the Information grid. See Data Entry > Edit < module > Data > Information grid > Customize > Layouts.
Address Pre-Direction	Tag at the beginning of a street name used to indicate direction, such as 125 E Grand Bluff St. NW, where E is the pre-direction. This field is available for use in all modules and can be added in the Information grid. See Data Entry > Edit < module > Data > Information grid > Customize > Layouts.
Alignment Sheet Number	Record number assigned to an alignment sheet for a pipeline right-of-way. Add this field in either the Rectifier Information or Inspection grid. See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt; Rectifier &gt; Information</i> or <i>Inspection</i> grids <i>&gt; Customize &gt; Layout</i> .

Name	Description
Allegro Survey Information	System-generated field showing properties in a close interval survey file transferred from the Allegro. Properties include configuration settings, ROW code, survey date, surveyor, type of survey, and so on.
Anomaly Direction	If survey readings were taken at regular intervals during an ACVG survey, use this field to indicate if the anomaly is in front of or behind the surveyor. This field does not apply to ACVG surveys that only record an ACVG point at the anomaly. Typical entries for this field are <i>Forward</i> or <i>Reverse</i> .
	See ISM, Data Entry > Edit Indirect Survey Data > ACVG grid.
APB (Ppm)	Acid Reducing Bacteria parts-per-million. Measurement of APB in parts-per-million (Ppm). Add Activate APB (Ppm) in the Information grid to allow data entry in the Inspections grid. See ICM, <i>Data Entry</i> > Edit ICM Data > Samples > Information and Inspection grids > Customize > Layouts.
Apparent Leak Location	Leak location. See LSM, Data Entry > Edit LSM Data > Maintenance grid > Customize > Layouts.
Attached Documents	Use this field to attach or link a document to a record in the grid. This field is available in all modules. See <i>Attaching a Document to a Grid Record</i> (page 340).
Average P/S	Average Pipe-to-Soil. Reading measured in volts. Add the field Activate Average P/S in the Test Point Information grid to enable data entry in the Average P/S field in the Test Point Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Test Point Information and Inspection grid > Customize > Layouts.

Name	Description
Bond Current Adjusted	Click the check box to indicate a change was made to the bond current. This field works in conjunction with the fields Bond Current Found and Bond Current Left when the Activate field for both of these fields has been added in the Information grid.
	When adjusting the bond current (1) click the <i>Bond</i> <i>Current Adjusted</i> check box; (2) enter the pre-adjusted value (in amps) in the field <i>Bond Current Found</i> ; and then (3) enter the adjusted value (in amps) in the field <i>Bond Current Left</i> . See CPDM, <i>Data Entry</i> > <i>Edit</i> <i>CPDM Data</i> > <i>Foreign Bond Information</i> and <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Bond Current Found	Bond current measured during an inspection (in Amps). This field works in conjunction with the fields Bond Current Adjusted and Bond Current Left when the Activate field for both of these fields has been added in the Foreign Bond Information grid. See CPDM, <i>Data</i> <i>Entry</i> > <i>Edit CPDM Data</i> > <i>Foreign Bond Information</i> and <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Bond Current Left	Bond current measured after an inspection (in Amps). This field works in conjunction with the fields Bond Current Adjusted and Bond Current Found when the Activate field for both of these fields has been added in the Foreign Bond Information grid. See CPDM, <i>Data</i> <i>Entry</i> > <i>Edit CPDM Data</i> > <i>Foreign Bond Information</i> and <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Bond Shunt Factor	Multiplying factor measured in Amps. Used in converting the voltage drop across the shunt to current. Voltage drop and shunt resistance are used to calculate the current. Add the Bond Shunt Factor field in either the Foreign Bond Information or Inspection grid. See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt; Foreign Bond</i> <i>Information</i> and <i>Inspection</i> grid <i>&gt; Customize &gt;</i> <i>Layouts</i> .

Table A-1. System Field Descriptions (continued)

Name	Description
Bond Shunt Rating	Shunt size measured in millivolts and Amps (mV/A). Add the field in either the Foreign Bond Information or Inspection grid. See CPDM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt; Foreign Bond Information</i> and <i>Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .
Bond Shunt Resistance	Shunt resistance measured in Ohms. Add the field in either the Foreign Bond Information or Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Foreign Bond Information and Inspection grid > Customize > Layouts.
Bond Type	Type of bond, such as resistance or direct. Add the field in either the Bond Information or Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Foreign Bond Information and Inspection grid > Customize > Layouts.
Casing IRF	Casing IR free (IRF) reading. Voltage measurement indicating the potential of the casing relative to the soil with interrupted rectifier current. Add the field Activate Casing IRF in the Test Point Information grid to enable data entry in the Casing IRF field in the Test Point Inspection grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM</i> <i>Data</i> > <i>Test Point Information</i> and <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Casing IRF Minimum and Maximum	Minimum and maximum value allowed for data entry in the Casing IRF field. Add the fields Casing IRF Minimum and Casing IRF Maximum in either the Test Point Information or Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Test Point Information or Inspection grid > Customize > Layouts.
Casing P/S	Casing Pipe-to-Soil. Voltage measurement indicating the potential of the casing relative to the soil. Add the field Activate Casing P/S in the Information grid to enable data entry in the Casing P/S field in the Inspection grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Test Point Information</i> and <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .

Name	Description
Casing P/S Minimum and Maximum	Minimum and maximum value allowed for data entry in the Casing P/S field. Add the fields Casing P/S Minimum and Casing P/S Maximum in either the Test Point Information or Inspection grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Test Point Information</i> or <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Casing Status	Status of the casing, such as short, not short, electrolytic, or metallic. Add the field Activate Casing Status in the Information grid to enable data entry in the Casing Status field in the Inspection grid. See CPDM, <i>Data</i> <i>Entry</i> > <i>Edit CPDM Data</i> > <i>Test Point Information</i> and <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Center P/S	Center Pipe-to-Soil. Structure reading in volts when a half-cell is under the center of the tank. Add the field Activate Casing P/S in the Information grid to enable data entry in the Casing P/S field in the Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Tank Information and Inspection grid > Customize > Layouts.
Center P/S Minimum and Maximum	Minimum and maximum value (voltage reading) allowed for data entry in the Center P/S field. Add the fields Center P/S Minimum and Center P/S Maximum in either the Tank Information or Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Tank Information or Inspection grid > Customize > Layouts.
City	City where a facility is located. This field is available for use in all modules; add the field in either the Information or Inspection grid. See <i>Data Entry</i> > <i>Edit</i> < <i>module</i> > <i>Data</i> > <i>Information</i> or <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Close Direction	Direction the valve wheel turns to close the valve. Enter data such as CW for clockwise or CCW for counter clockwise. See VM, <i>Data Entry</i> > <i>Edit VM Data</i> > <i>Information</i> or <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .

Name	Description
Coating	Type of coating applied to the pipeline, such as tape or epoxy. Add this field in either the Information or Inspection grid. See ACM, <i>Data Entry</i> > <i>Edit ACM Data</i> > <i>Information</i> or <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Coating Condition	Description of coating condition. See ACM, Data Entry > Edit ACM Data > Inspection grid > Customize > Layouts.
Coke Breeze Type	Type of coke breeze, such as metallurgical and petroleum-based. See CPDM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt; Rectifier Information, Inspection,</i> or <i>Maintenance</i> grid > <i>Customize &gt; Layouts</i> .
Coke Breeze Type	Type of coke breeze such as metallurgical and petroleum-based. Add this field in either the Rectifier Information or Inspection grid.
	See CPDM, Data Entry > Edit CPDM Data > Rectifier > Information or Inspection grids > Customize > Layout.
Completed Maintenance	Total number of maintenance records for a facility that have the field Completed Date populated. This is a read- only, facility level calculated field. Add this field in the Rectifier Information, Inspection, or Maintenance grid.
	See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt; Rectifier &gt;</i> Information, <i>Inspection,</i> or <i>Maintenance</i> grids > <i>Customize &gt; Layouts</i> .
Conductivity	Numeric field supporting decimal numbers with up to 7 digits resolution, including two numbers after the decimal. Use this field to record conductivity measurements as measured by the inspection tool during a <i>Soil Resistivity</i> survey. Measurements are in microsiemens (µS), a metric unit of measurement for conductivity.
	See ISM module, Data Entry > Edit ISM Data > Soil Resistivity.

Name	Description
Connection Type	Type of connection used to secure a valve to the pipeline.
	See VM, Data Entry > Edit VM Data > Information or Inspection grid > Customize > Layouts.
Contact	Name of a contact person at the company responsible for the foreign bond.
	See CPDM, Data Entry > Edit CPDM Data > Foreign Bond Information grid > Customize > Layouts.
Creation Date	Date a facility record was created in a grid. Add this field in either the Rectifier Information or Inspection grid.
	See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt; Rectifier &gt;</i> Information or <i>Inspection</i> grids > <i>Customize &gt;</i> <i>Layouts</i> .
Critical Bond	Check box for indicating if a bond is critical based on location and connection. Critical bond is used in scheduling. Click to place a check mark inside the check box if the bond is considered a critical bond.
	See CPDM, Data Entry > Edit CPDM Data > Foreign Bond Information, Inspection, or Maintenance grid > Customize > Layouts.
Days Since First Bad Reading	Derived field showing the number of days since the first bad reading (reading does not meet criteria). Field available in all modules in the <i>Information</i> or <i>Inspection</i> data entry grid. See <i>Working with Derived</i> <i>Fields</i> (page 226).
Days Since Last Good Reading	Derived field showing the number of days since the last good reading (reading meets criteria). Field available in all modules in the <i>Information</i> or <i>Inspection</i> data entry grid. See <i>Working with Derived Fields</i> (page 226).

Name	Description
Days Until Delinquent	Read-only, system calculated field. Number of days until a facility inspection becomes delinquent. Field is available in all modules.
	See Data Entry > Edit <module> Data &gt; Information or Inspection grid &gt; Customize &gt; Layouts.</module>
Decibel Reading (dB)	Decibel reading measured in millibels (mB, decibel microvolts) by the inspection tool using the A-Frame method during an ACVG survey.
	See ISM, Data Entry > Edit ISM Data > ACVG.
Default Location Format	Read-only field showing the format used in numbering facilities on a pipeline segment. Default Location Format is set up before adding or linking facilities to a pipeline segment. Valid entries are: <i>Metric Milepost, Milepost (4 decimals), Location ID, Milepost (3 decimals), Miles/</i> <i>Station Number, Reading Number, and Station</i> <i>Number.</i>
	Default Location Format is available in all modules. See Data Entry > Edit <module> Data &gt; Information or Inspection grid &gt; Customize &gt; Layout.</module>
Delinquent Date From Schedule	Read-only field showing the date a facility becomes delinquent based on scheduling properties set up in Edit Schedule Settings ( <i>Data Entry</i> > <i>Edit Schedule</i> <i>Settings</i> ). This field is available in all modules. See <i>Data</i> <i>Entry</i> > <i>Edit</i> < <i>module</i> > <i>Data</i> > <i>Information</i> or <i>Inspection</i> grid > <i>Customize</i> > <i>Layout</i> .
Depth	Numeric field supporting decimal numbers with up to 6 digits resolution, including two numbers after the decimal. Use this field to enter the pipeline depth reading in inches as measured by the PCM inspection tool during an ACCA survey.
	See ISM, Data Entry > Edit ISM Data > ACCA.
Diameter	Distance from wall to wall across a tank. See CPDM, Data Entry > Edit CPDM Data > Tank Information, Inspection or Maintenance grid > Customize > Layouts.

Name	Description
Diode Rating	Amperage rating of the diode in the rectifier. See CPDM, Data Entry > Edit CPDM Data > Information or Inspection grid > Customize > Layout.
Due Date From Schedule	Date a facility is scheduled for survey based on settings in Edit Schedule Settings ( <i>Data Entry &gt;Edit Schedule</i> <i>Settings</i> ). This field is available for use in all modules; add the field in either the Information or Inspection grid. See <i>Data Entry &gt; Edit &lt; module &gt; Data &gt; Information</i> or <i>Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .
Due Date From Schedule	Read-only field showing the date a facility is due for inspection based on scheduling properties set up in Edit Schedule Settings ( <i>Data Entry</i> > <i>Edit Schedule</i> <i>Settings</i> ). This field is available in all modules. See <i>Data</i> <i>Entry</i> > <i>Edit</i> < <i>module</i> > <i>Data</i> > <i>Information</i> or <i>Inspection</i> grid > <i>Customize</i> > <i>Layout</i> .
East P/S	East Pipe-to-Soil. Structure reading in volts when a half- cell is placed near the east side of a tank. Add and enable Activate Cardinal Points in the Information grid to allow data entry in the Inspections grid. See CPDM, <i>Data</i> <i>Entry</i> > <i>Edit CPDM Data</i> > <i>Tank</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .
East P/S Maximum/ Minimum	Maximum and minimum voltage value allowed for data entry in the field East P/S in the Tank Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Tank > Information or Inspection grid > Customize > Layouts.

Table A-1. System Field Descriptions (continued)

Name	Description
Effective Date	Required system field automatically present in all grids. Effective Date is the date a history record becomes effective. New history records are created with an Effective Date when important permanent information changes. For example, changes to important permanent information include changing the protection criteria value for a test point; changing the operational status from active to inactive or vice versa; and when a pipeline becomes inactive or is taken out of service. For more information, see <i>Creating History Records Using an Effective Date</i> (page 245).
Efficiency	System-provided value that is calculated using the formula shown below. A value can be manually entered, but is not recommended. See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt; Rectifier &gt; Information</i> or <i>Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .
	<u>Rectifier Output Volts Left x Rectifier Output Current Left x 100</u> AC Power (Watts)
Efficiency Filter	Check box for indicating whether or not a rectifier is using an efficiency filter. Click to place a check mark inside the check box when an efficiency filter is present. See CPDM, Data Entry > Edit CPDM Data > Rectifier > Information or Inspection grid > Customize > Layouts.
Elevation	Elevation in feet for a facility, survey point, or anomaly on a pipeline as reported by a GPS device. This field is available for use in all modules.
	See Data Entry > Edit <module> Data &gt; Information or Inspection grid &gt; Customize &gt; Layouts.</module>
End Date	Last day of a start and end date range, such as a start date of 05/04/2012 and an end date of 08/06/2012. A date range is typically used when generating a schedule or when defining a survey folder. This field is available in all modules.
	See Data Entry > Edit <module> Data &gt; Information or Inspection grid &gt; Customize &gt; Layout.</module>

Table A-1. System Field Descriptions (continued)

Name	Description
Existing Facilities	An existing facility is a milepost in an imported stationary survey that matches an existing milepost in PCS Axis for the currently selected ROW (pipeline segment). Existing facilities are used in telluric compensation. Also refer to <i>Unregistered Milepost</i> . See CPDM, <i>Data Entry</i> > <i>Stationary Survey Maintenance</i> > <i>Snap To Facility</i> .
Facility Active	Check box to indicate whether or not a facility is active or inactive according to survey status. Add this field in either the Information or Inspection grid.
	See CPDM, Data Entry > Edit CPDM Data > Information or Inspection grid > Customize > Layouts.
Facility and ROW Currently Active	Read-only system field showing the status of linked facilities on a ROW. Check box indicates whether or not a facility and ROW are active or inactive based on survey status. Add this field in either the Information or Inspection grid.
	See CPDM, Data Entry > Edit CPDM Data > Information or Inspection grid > Customize > Layouts.
Facility Attached Document	Field for attaching a file (document or image) or Internet link to a facility or ROW. File attachment or link can be previewed or edited in PCS Axis with the appropriate viewer or file editor if installed locally on the computer.
	Use this field to link or embed a file attachment and detach an attached file. This field is available in all modules and can be added in the Information, Inspection, and Maintenance grids. See any module, Data Entry > Edit <module> Data &gt; Information, Inspection, or Maintenance grid &gt; Customize &gt; Layout.</module>

Name	Description
Facility Delinquent Date	Date a facility is considered to be past due for inspection. This is a PCS Axis calculated field based on schedule settings set up in Edit Schedule Settings ( <i>Data</i> <i>Entry</i> > <i>Edit Schedule Settings</i> ). Available for use in all modules; add the field in either the Information or Inspection grid. See <i>Data Entry</i> > <i>Edit <module< i=""> &gt; <i>Data</i> &gt; <i>Information</i> or <i>Inspection</i> grid &gt; <i>Customize</i> &gt; <i>Layouts</i>.</module<></i>
Facility ID	Identification code that identifies a facility. This field is available for use in all modules; add the field in either the Information or Inspection grid. See <i>Data Entry</i> > <i>Edit &lt; module</i> > <i>Data &gt; Information</i> or <i>Inspection</i> grid > <i>Customize &gt; Layouts</i> .
Foreign IRF	Foreign IR free reading. Voltage measurement indicating the potential of a foreign line at a foreign line crossing relative to the soil with interrupted rectifier current.
	Add and enable Activate Foreign IRF in the Test Point Information grid to allow data entry in the Inspections grid. See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt; Test</i> <i>Point &gt; Information</i> and <i>Inspection</i> grids <i>&gt; Customize</i> <i>&gt; Layouts</i> .
Foreign P/S	Foreign Pipe-to-Soil. Potential reading of foreign line at a foreign line crossing relative to the soil. Use this field to enter pipe-to-soil "on" measurements taken at a site with all DC sources operational.
	Add and enable Activate Foreign P/S in the Test Point Information grid to allow data entry in the Inspections grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Test</i> <i>Point</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .

Name	Description
Galvanic Anode Initial Current	Initial current output at install. Additional readings should be recorded in the field Galvanic Current in the Galvanic Anode Inspection grid.
	To record data in the Galvanic Current field in the Inspection grid: (1) add Activate Galvanic Current in the Information grid, then enable the field's check box, (2) add the field Galvanic Current in the Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Galvanic Anode > Information and Inspection grids > Customize > Layouts.
Galvanic Anode Shunt Factor	Amperage value of the galvanic anode shunt factor. Shunt factor includes the value in this field and the millivolt/amperage (mV/A) value entered in the Galvanic Anode Shunt Rating field.
	Add the fields Galvanic Anode Shunt Factor and Galvanic Anode Shunt Rating in either the Information or Inspection grid. See CPDM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt; Galvanic Anode &gt; Information</i> or <i>Inspection</i> grids <i>&gt; Customize &gt; Layouts</i> .
Galvanic Anode Size	Weight in pounds (lbs) of sacrificial anode. Add this field in either the Information or Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Galvanic Anode > Information or Inspection grids > Customize > Layouts.
Galvanic Anode To Soil	Driving potential of the anode relative to the soil. Value entered in volts. Add this field in either the Information or Inspection grid. See CPDM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt; Galvanic Anode &gt; Information</i> or <i>Inspection</i> grids > <i>Customize &gt; Layouts</i> .
Galvanic Anode Type	Type of anode such as magnesium, aluminum, or zinc. Add this field in the Information or Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Galvanic Anode > Information or Inspection grids > Customize > Layouts.

Name	Description
Galvanic Current Maximum/Minimum	Maximum and minimum current output. See CPDM, Data Entry > Edit CPDM Data > Galvanic Anode > Information or Inspection grids > Customize > Layouts.
Galvanic Number of Anodes	<i>Rectifier facilities</i> : Number of impressed current anodes at a rectifier/ground bed installation. If there are multiple ground beds at a rectifier, this will be the total number of anodes associated with that rectifier.
	<i>Galvanic Anodes</i> : Number of sacrificial anodes at a galvanic anode installation.
	See CPDM, Data Entry > Edit CPDM Data > Galvanic Anode > Information or Inspection grids > Customize > Layouts.
Gas Indicator Leak Test	Remark field in the LSM module for describing the condition of the valve coating at inspection.
	To record data in the field Gas Indicator Leak Test in the Inspection grid: (1) add the field Activate Gas Indicator Leak Test in the Information grid, then enable the field's check box, (2) add the field Gas Indicator Leak Test in the Inspection grid. See LSM, <i>Data Entry &gt; Edit LSM Data</i> <i>&gt; Information</i> and <i>Inspection</i> grids <i>&gt; Customize &gt;</i> <i>Layouts</i> .
Holiday	Use this field to indicate a survey location with a pipeline coating anomaly (hole) as detected by the inspection tool during an ACVG survey. A check mark inside the check box indicates a survey location with a holiday. To remove the check mark, click the check box again.
	See ISM module, <i>Data Entry &gt; Edit ISM Data &gt; ACVG</i> .

Name	Description
Indication Classification	Use this field to classify or prioritize the severity of an indication. For example, classifications such as minor, moderate, severe, immediate, scheduled, or monitored might be used to prioritize the severity of indications. Typical indications include coating faults, holidays, corrosion activity, electrical shorts, interference, geologic current shielding, and other types of anomalies that have been discovered during an above ground, indirect survey.
	If your company uses a coding system for describing the severity of indications, you can type the code in the field; select the code and its description from a drop-down list if a picklist has previously been setup in <i>Field and UDF</i> <i>Customizations</i> (page 67); or import the code in PCS Axis using Bridge (page 491).
Indication Score	Alphanumeric field that accepts up to two characters, numbers, or a combination of both. Use this field to rank, prioritize, quantify the actual size, or grade the severity of an indication classification.
Inspection Remarks	Survey comment associated with a facility, anomaly, or landmark. Field is available for use in all modules. See any module, <i>Data Entry &gt; Edit &lt; module &gt; Data &gt;</i> <i>Inspection &gt; Customize &gt; Layouts</i> .
Insulator IRF	Insulator IR Free. Voltage measurement indicating the potential of an insulated flange relative to the soil with interrupted rectifier current.
	Add and enable Activate Insulator IRF in the Test Point Information grid to allow data entry in the Inspections grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Test</i> <i>Point</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .

Table A-1. System Field Descriptions (continued)

Name	Description
Insulator P/S	Insulator Pipe-to-Soil. Potential reading for the other side of an insulated flange, relative to the soil. Also referred to as an "insulator-to-soil" potential reading.
	Add and enable Activate Insulator P/S in the Test Point Information grid to allow data entry in the Inspections grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Test</i> <i>Point</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .
Insulator Shunt Factor	Amperage value of the insulator shunt factor. Shunt factor on sists of the value in this field and the value (mV/A) in the field Insulator Shunt Rating.
	See CPDM, Data Entry > Edit CPDM Data > Test Point > Information or Inspection grid > Customize > Layouts.
IR (percentage)	Numeric field supporting a 5 digit decimal number, including two numbers after the decimal. Use this field to enter a value that represents the estimated size or severity of a holiday as a percentage. The value you enter is the difference between the over-the-line (OTL) to remote earth (RE) readings divided by the signal strength (SS) of the voltage gradient at the anomaly.
	IR (percentage) = (OTL – RE or RE – OTL) $\div$ SS at anomaly
	See ISM, Data Entry > Edit ISM Data > DCVG.
Is Gps Time	Read-only field indicating whether or not the P/S and IRF (ON/OFF) inspection date and time is GPS time. See CPDM, Data Entry > Edit CPDM Data > Test Point Detail Inspection mini-grid.
KWH Meter	Kilowatt hours (KWH) recorded from a power meter for rectifier power usage. Add and enable Activate KWH Meter in the Rectifier Information grid to allow data entry in the Inspections grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Rectifier</i> > <i>Information</i> and <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .

Name	Description
Latitude	Numeric field that accepts up to twelve digits. Use this field to enter data that identifies the GPS latitude coordinate (north/south) for a test point, rectifier, bond, anomaly, or other location type on a pipeline. Field is available in all modules.
Level 1 Name through Level 5 Name	User setting for the names of the system hierarchy levels. PCS Axis supports up to five hierarchy levels. See <i>Tools</i> > <i>Customize</i> > <i>Hierarchy</i> .
Locate Current (mA)	Use this field to enter a current reading in milliamps (mA) as measured by the PCM inspection tool for survey points located directly over the pipeline during an ACCA survey.
	See ISM, Data Entry > Edit ISM Data > ACCA.
Location Code	Alphanumeric code assigned to a pipeline segment. The field accepts up to five alphanumeric characters.
	Location Code is available for use in all modules and can be added in either the Information or Inspection grid. See <i>Data Entry &gt; Edit <module> Data &gt; Information</module></i> or <i>Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .
Log Number	Numeric field that supports up to 6 digits. This field is typically used for sequential log numbers generated by a PCM (pipeline current mapper) data logger for survey readings taken during an ACCA survey.
	See ISM, Data Entry > Edit ISM Data > ACCA.
Longitude	Numeric field that accepts up to twelve digits. Use this field to enter data that identifies the GPS longitude coordinate (east/west) for a test point, rectifier, bond, anomaly, or other location type on a pipeline. Field is available in all modules.

Table A-1. System Field Descriptions (continued)

Name	Description
Loss per Distance (dB/Ft)	Numeric field supporting positive or negative decimal numbers with up to 5 digits resolution, including 2 numbers after the decimal. Use this field to enter the "dB loss per foot" value as calculated by the PCM inspection tool during an ACCA survey. The calculated value indicates the "current loss per distance ratio". See ISM, Data Entry > Edit ISM Data > ACCA.
Manufacturer	Manufacturer of the rectifier being installed. See CPDM module, <i>Data Entry &gt; Edit CPDM Data &gt; Rectifier</i> Inspections grid > Customize > Layouts.
Milepost	Number representing a testing or facility location on a pipeline such as 23+123. May also be referred to as station number, milepost marker, or station marker.
	See Tools > Customize > General > User Location Name.
Native P/S	Native Pipe-to-Soil. Voltage reading taken prior to any current placed on the pipeline. Also referred to as depolarized or static potential.
Negative Shunt Factor	Amperage value of the negative shunt factor. This field is available in the Rectifier Negative Inspections mini-grid. See CPDM, Data Entry > Edit CPDM Data > Rectifier Inspections grid > Rectifier Negative Inspections mini-grid.
Number of Crossings	PCS Axis calculated field showing the total number of crossings, such as road crossings, railroad crossings, foreign pipeline crossings, and fence lines. See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt;</i> Test Point <i>&gt; Information</i> or <i>Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .
Number of Leaks	Numeric field for entering the number of leaks. Add the field Activate Number of Leaks in the Information grid to allow data entry in the Inspection grid. See LSM, <i>Data Entry &gt; Edit LSM Data &gt; Information</i> and <i>Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .

Name	Description
Number of Negatives	PCS Axis calculated field in either the Rectifier Information or Inspection grid. This field shows the number of negatives in the Rectifier Negative Information mini-grid. See CPDM, <i>Data Entry &gt; Edit</i> <i>CPDM Data &gt;</i> Rectifier <i>&gt; Information</i> or <i>Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .
Number of Readings in Survey	A derived field showing the total number of survey readings in a continuous survey. See continuous survey types CIS, AC CIS, DCVG and so on in Indirect Survey Manager (ISM). Also see <i>Working with Derived Fields</i> (page 226).
Number of Turns	Number of turns to open a valve. Add the field Activate Number of Turns in the Information grid to allow data entry in the Inspection grid. See VM, <i>Data Entry &gt; Edit</i> VM Data > Information and Inspection grid > Customize > Layouts.
Off Delta	A value showing the difference between the uncompensated and compensated OFF values.
On Delta	A value showing the difference between the uncompensated and compensated ON values.
Original Station Number	The initial or original station number before re-aligning station numbers using the Rubber Banding feature in <i>Survey Maintenance</i> . See ISM, <i>Data Entry &gt; Edit ISM Data &gt; Survey</i>
	Maintenance.
OTL to Remote Earth (mV)	Over-the-Line to Remote Earth. Use this field to enter a value in millivolts (mV) that represents the sum of all side drain measurements taken during a DCVG survey for a survey point on the pipeline.
	See ISM, Data Entry > Edit ISM Data > DCVG.

 Table A-1. System Field Descriptions (continued)

Name	Description
P/S Offset	Pipe-to-Soil Offset.l Offset added to a pipe-to-soil (P/S) reading collected on the Allegro field computer. Use this field when using a permanent reference cell other than copper-copper sulfate. PCS Axis uses the value to convert the reading to the equivalent copper-copper sulfate reading. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > Test Point > <i>Information</i> or <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Parallel Line	Two (2) pipelines within the same ROW (right-of way) and parallel to each other. Use the fields <i>Pipeline Code</i> and <i>Pipeline Name</i> in <i>Select ROWs</i> to identify a parallel pipeline. Also see <i>Pipe</i> , <i>Pipeline Code</i> , and <i>Pipeline</i> <i>Name</i> .
PBN Dial Reading	Measurement reading taken at inspection. Add the field Activate PBN Dial Reading in the Information grid to allow data entry in the Inspection grid. See ICM, <i>Data</i> <i>Entry</i> > <i>Edit ICM Data</i> > <i>Probe</i> > <i>Information</i> and <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
PCM Current (dB)	Numeric field that supports decimal numbers with up to 6 digits resolution, including two numbers after the decimal point. Use this field to enter the PCM current reading as measured in mA and dB by the PCM inspection tool during an ACCA survey. See ISM, <i>Data Entry</i> > <i>Edit ISM Data</i> > <i>ACCA</i> .
PCS Field Name	Selection list that allows you to choose the type of potential reading associated with a test lead record in the <i>Test Point Detail Information</i> and <i>Inspection</i> mini- grid. The test lead inspection record controls which ON/ OFF values copy to the Inspection grid P/S and IRF fields for compliance reporting. See CPDM, <i>Data Entry &gt; Edit</i> <i>CPDM Data &gt; Test Point Detail Information</i> and <i>Inspection</i> mini-grids.

Table A-1. System Field Descriptions (continued)

Name	Description
Pearson	Continuous (indirect) survey that uses an electrical method for locating holidays in the pipeline coating by applying an AC signal on the pipeline and the reception of the signal by two surveyors wearing metal cleats and connected to a Pearson receiver.
	See ISM, Data Entry > Edit ISM Data > Pearson.
Periodic Survey	A survey conducted more often than every 12 months, such as monthly or bi-monthly rectifier surveys. See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt;</i> Rectifier <i>&gt;</i> <i>Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .
Periodic Survey Year	Year a periodic survey is performed. See CPDM, <i>Data</i> <i>Entry &gt; Edit CPDM Data &gt;</i> Rectifier <i>&gt; Inspection</i> grid <i>&gt; Customize &gt; Layouts</i> .
Permanent Comments	Comments permanently associated with a facility. This type of comment does not typically change during each survey year. This field is available for use in all modules and can be added in the Information grid. See <i>Data Entry</i> > <i>Edit</i> < <i>module</i> > <i>Data</i> > <i>Information</i> grid > <i>Customize</i> > <i>Layouts</i> .
	Comments that apply to a particular survey should be entered in the Survey Remarks field.
Phone Number	Phone number of the person to contact at another company about a foreign bond. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > Foreign Bond > <i>Information</i> or <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Pipe	Two digit alphanumeric code used to identify a parallel pipeline in a common ROW with an existing pipeline. Also see <i>Pipeline Code, Pipeline Name,</i> and <i>Parallel Line</i> .
Pipeline Code	Two digit alphanumeric code used to identify a parallel pipeline in a common ROW with an existing pipeline. Also see <i>Pipe, Pipeline Name</i> , and <i>Parallel Line</i> .

Table A-1. System Field Descriptions (continued)

Name	Description
Pipeline Name	Name of a parallel pipeline in a common ROW with an existing pipeline. Also see <i>Pipe</i> , <i>Pipeline Code</i> , and <i>Parallel Line</i> .
Plot This Point	Use this field to include or exclude continuous survey readings in reports and graphs. To include a survey reading, click the check box to place a check mark in the check box. To exclude a survey reading, clear the check mark by clicking the check box. This field is enabled by default with all survey readings included in reports and graphs.
	See ISM, <i>Data Entry &gt; Edit ISM Data &gt;</i> any survey type.
Polarity	Direction of current flow at a foreign bond. Add the field Activate Polarity in the Information grid to allow data entry in the Inspection grid.
	See CPDM, Data Entry > Edit CPDM Data > Foreign Bond > Information and Inspection grid > Customize > Layouts.
Power Company Phone Number	Phone number of the power company for a rectifier installation site. See CPDM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt;</i> Rectifier > <i>Information</i> or <i>Inspection</i> grid > <i>Customize &gt; Layouts</i> .
Pre-Install P/S	Pipe-to-soil reading taken before installation of galvanic anodes. See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt;</i> Galvanic Anode > <i>Information</i> or <i>Inspection</i> grid > <i>Customize &gt; Layouts</i> .
Property Rights	Code that identifies any property rights that might impact inspection or access to a pipeline. The field supports up to 10 alphanumeric characters including spaces, such as B #1234567. See LSM, <i>Data Entry &gt; Edit</i> <i>LSM Data &gt; Maintenance</i> grid > <i>Customize &gt;</i> <i>Layouts</i> .

Table A-1. System Field Descriptions (continued)

Name	Description		
Rectifier Anode Size	Dimensions of impressed current anodes such as 3 x 60. Add the field in either the Rectifier Information or Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Rectifier > Information or Inspection grids > Customize > Layouts.		
Rectifier Anode Type	Type of anode such as graphite or high silicon material. Add the field in either the Rectifier Information or Inspection grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM</i> <i>Data</i> > <i>Rectifier</i> > <i>Information</i> or <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .		
Rectifier Current Adjusted	Check box for indicating a change was made to the rectifier current at inspection. When a change is made (1) click to add a check mark in the Rectifier Current Adjusted check box, (2) enter the adjusted reading in the fields Rectifier Output Volts Left and Rectifier Output Current Left. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Rectifier</i> > <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .		
Rectifier Current Density	A calculated report field indicating the amount of current required per square foot to change a structure's potential to –0.85 volts.		
Rectifier Current Distributions	Number of pipelines receiving current from a rectifier. This field is generated by PCS Axis as current distributions are added. See CPDM module, <i>Reports/</i> <i>Graphs &gt; Survey Report</i> .		
Rectifier Output Current Found	Initial rectifier reading at inspection measured in Amps. Add the field Activate Rectifier Output Current Found in the Information grid to allow data entry in the Inspection grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Rectifier</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .		
	PCS Axis multiplies the initial rectifier reading by the rectifier shunt factor when the fields <i>Rated Rectifier Output Volts</i> and <i>Rated Rectifier Output Current</i> are populated in the Rectifiers Information grid.		

Table A-1. System Field Descriptions (continued)

Name	Description	
Rectifier Output Current Found Maximum/ Minimum	Maximum and minimum value (measured in Amps) allowed for data entry in the field Rectifier Output Current Found. Add the fields in either the Rectifier Information or Inspection grid. See CPDM, Data Entry > Edit CPDM Data > Rectifier > Information or Inspection grids > Customize > Layouts.	
Rectifier Output Current Left	Rectifier reading after making adjustments to the rectifier output current at inspection (measured in Amps). Also see description for Rectifier Output Current Found. See CPDM, <i>Data Entry</i> > Edit CPDM Data > Rectifier > Inspection grids > Customize > Layouts.	
Rectifier Output Shunt Factor	Amperage value of the anode shunt factor. Refers to the shunt used to measure the output current of each anode in a positive junction box. Shunt factor includes the value in this field and the value entered in the field Rectifier Output Shunt Rating. See CPDM, <i>Data Entry &gt; Edit CPDM Data &gt; Rectifier &gt; Information or Inspection</i> grids <i>&gt; Customize &gt; Layouts</i> .	
Rectifier Output Volts Found	Initial rectifier reading at inspection measured in volts. Add and enable the field Activate Rectifier Output Volts Found in the Rectifier Information grid to allow data entry in the Inspections grid. Also refer to the description Rectifier Current Adjusted. See CPDM, Data Entry > Edit CPDM Data > Rectifier > Information and Inspection grids > Customize > Layout.	
Rectifier Output Volts Found Maximum/ Minimum	Maximum and minimum voltage value allowed for data entry in the field Rectifier Output Volts Found. See CPDM, Data Entry > Edit CPDM Data > Rectifier > Information or Inspection grids > Customize > Layouts.	
Rectifier Output Volts Left	See description for Rectifier Current Adjusted.	

Name	Description	
Repair Priority	Code number for identifying how soon repair work should begin. The field accepts up to five alphanumeric characters including spaces, such as A #123. This field is available for use in all modules. See <i>Data Entry</i> > <i>Edit</i> <module> <i>Data</i> &gt; <i>Maintenance</i> grid &gt; <i>Customize</i> &gt; <i>Layouts</i>.</module>	
Revolutions	Number of times a power meter wheel has rotated in a specific time period. This field is used to calculate the value in the Efficiency field. Add and enable the field Activate Revolutions in the Rectifier Information grid to allow data entry in the Inspections grid. See CPDM, Data Entry > Edit CPDM Data > Rectifier > Information and Inspection grids > Customize > Layout.	
RFID	Radio-frequency identification number populated either by transferring an Allegro Periodic Survey (PS) to PCS Axis or manual entry in a grid. This field is available for use in all modules. See <i>Data Entry</i> > <i>Edit</i> < <i>module</i> > <i>Data</i> > <i>Information, Inspection, or Maintenance</i> grid > <i>Customize</i> > <i>Layouts</i> .	
ROW Currently Active	Check box for indicating when a pipeline is active or inactive according to survey status. Field is available for use in all modules. See <i>Data Entry</i> > <i>Edit</i> < <i>module</i> > <i>Data</i> > <i>Information</i> grid.	
Seconds	Amount of time in seconds that has elapsed for the number of Revolutions. This field is used to calculate the value in the Efficiency field. Add and enable the field Activate Seconds in the Rectifier Information grid to allow data entry in the Inspections grid. See CPDM, Data Entry > Edit CPDM Data > Rectifier > Information and Inspection grids > Customize > Layout.	
Series	Use <i>Series</i> to adjust or shift milepost numbers for a pipeline when adding a pipeline extension, re-routing a pipeline, or designating two pipelines as parallel lines. The calculated milepost number resulting from a <i>Series</i> is referred to as Relative Milepost. See CPDM module <i>Data Entry</i> > <i>Pipeline Series</i> .	

Table A-1. System Field Descriptions (continued)

Name	Description
Signal Strength	Signal strength of the voltage gradient (IR drop) at survey points along the pipeline as measured in millivolts (mV) by a voltmeter during a DCVG survey.
	See ISM, Data Entry > Edit ISM Data > DCVG.
Soil Resistivity (Ohm/cm)	Use this field to record soil resistivity measurements along the pipeline. Measurements are in Ohm-centimeters (Ohm/cm).
	See ISM, Data Entry > Edit ISM Data > Soil Resistivity.
South P/S	Structure reading in volts when a half-cell is placed near the east side of a tank. Add and enable Activate Cardinal Points in the Tank Information grid to allow data entry in the Inspections grid.
	See CPDM, Data Entry > Edit CPDM Data > Tank > Information and Inspection grids > Customize > Layouts.
South P/S Maximum/ Minimum	Maximum and minimum voltage value allowed for data entry when entering a structure reading in the South P/S field.
SRB	Amount of sulfate-reducing bacteria (SRB) measured as parts per million (Ppm). Add and enable Activate SRB in the Samples Information grid to allow data entry in the Inspections grid. See ICM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt; Samples &gt; Information</i> and <i>Inspection</i> grids > <i>Customize &gt; Layouts</i> .
Start Date	First day of a start and end date range, such as a start date of 05/04/2012 and an end date of 08/06/2012. A date range is typically used when generating a schedule or when defining a survey folder. This field is available in all modules. See <i>Data Entry</i> > <i>Edit</i> < <i>module</i> > <i>Data</i> > <i>Information</i> or <i>Inspection</i> grid.
Station Marker	See description for Milepost.

Name	Description	
Station Number	Use this field to enter testing or facility location numbers on a pipeline (such as 23+124). Station numbers are also referred to as milepost, milepost marker, or station marker.	
Station Number Maximum	A derived field showing the highest station number from survey readings in a continuous survey. See continuous survey types CIS, AC CIS, DCVG and so on in Indirect Survey Manager (ISM). Also see <i>Working with Derived</i> <i>Fields</i> (page 226).	
Station Number Minimum	A derived field showing the lowest station number from survey readings in a continuous survey.	
Structure IRF and Structure IRF-CIS	Potential of the pipe, relative to the soil, with interrupted rectifier current (measured in volts). Use this field to enter pipe-to-soil "off" measurements taken at a site with all DC sources interrupted.	
	See ISM, Data Entry > Edit ISM Data > CIS.	
	In CPDM, add and enable <i>Activate Structure IRF</i> in the <i>Test Point Information</i> grid to allow data entry in the <i>Inspections</i> grid.	
Structure P/S and Structure P/S-CIS	Potential of the pipe relative to the soil measured in volts. Use this field to enter pipe-to-soil "on" measurements taken at a site with all DC sources operational.	
	See ISM, Data Entry > Edit ISM Data > CIS.	
	In CPDM, add and enable the field <i>Activate Structure P/S</i> in the <i>Test Point Information</i> grid to allow data entry in the <i>Inspections</i> grid.	
Surface Area	Total length and width of the pipeline expressed in feet. This field is used to determine <i>Efficiency</i> in the <i>Current</i> <i>Density</i> report. See any module > Data Entry > Edit ROW Detail.	

Table A-1. System Field Descriptions (continued)

Name	Description	
Surface Condition	Surface condition of the pipeline. The field accepts up to five alphanumeric characters. See LSM, <i>Data Entry &gt; Edit LSM Data &gt; Maintenance</i> grid > <i>Customize &gt; Layouts</i> .	
Surface Covering	Type of coating or covering on the pipeline. See LSM, Data Entry > Edit LSM Data > Maintenance grid > Customize > Layouts.	
Survey Date	Date an inspection or survey reading was taken.	
Survey Interval	Potential measurements taken at regular intervals for assessing the level of cathodic protection (CP). The system default is 2.5 feet for DC and AC close interval surveys (CIS and AC CIS) in ISM.	
Survey Name	Identifies the survey folder a survey reading is assigned to. Field is available for use in all modules. See <i>Data</i> <i>Entry</i> > <i>Edit</i> < <i>module</i> > <i>Data</i> > <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> . For periodic survey readings in CPDM, use the fields Periodic Survey and Periodic Survey Year instead.	
Survey Remarks	Remark or comment associated with a test point, rectifier, bond, anomaly, or landmark for a particular survey.	
Surveyor	Name of person conducting a survey.	
Tap Settings	Coarse or fine tap settings for rectifier output adjustment, such as C2F3. Add and enable Activate Tap Settings in the Rectifier Information grid to allow data entry in the Inspections grid. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Rectifier</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .	
Total Footage	Total number of feet for pipeline segment.	

Table A-1.	System Field	Descriptions	(continued)
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Name	Description
Uncompensated Off	Pipe-to-soil "OFF" (P/S) value received from the Allegro Field Computer. This is the raw reading without telluric compensation. See CPDM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt; Test Point Detail Inspection</i> mini-grid.
Uncompensated On	Pipe-to-soil "On" (P/S) value received from the Allegro Field Computer. This is the raw reading without telluric compensation. See CPDM, <i>Data Entry &gt; Edit CPDM</i> <i>Data &gt; Test Point Detail Inspection</i> mini-grid.
Unregistered Milepost	An unregistered milepost is a milepost in an imported stationary survey that does not match an existing milepost in PCS Axis for the currently selected ROW (pipeline segment). Unregistered mileposts relate only to the associated stationary survey and are not considered as facilities in PCS Axis. Unregistered mileposts are however used in telluric compensation. Also refer to <i>Existing Facilities</i> . See CPDM, <i>Data Entry</i> > <i>Stationary</i> <i>Survey Maintenance</i> > <i>Snap To Facility</i> .
User IR Correction	When a value is entered in User IR Correction, PCS Axis uses the value to calculate Target P/S instead of using the absolute difference between Structure P/S and Structure IRF. See CPDM, <i>Data Entry</i> > <i>Edit CPDM Data</i> > <i>Test Point</i> > <i>Inspection</i> grid > <i>Customize</i> > <i>Layouts</i> .
Valve Coating	Condition of valve coating at inspection. Add and enable Activate Valve Coating in the Information grid to allow data entry in the Inspections grid. See VM, <i>Data Entry</i> > <i>Edit VM Data</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .
Valve Condition	General condition of valve at inspection. Add and enable Activate Valve Condition in the Information grid to allow data entry in the Inspections grid. See VM, <i>Data Entry</i> > <i>Edit VM Data</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .

Name	Description
Valve Operated	Check box for indicating if the valve was manually operated. Add and enable Activate Valve Operated in the Information grid to allow use of the field in the Inspections grid. See VM, <i>Data Entry &gt; Edit VM Data &gt;</i> <i>Information</i> and <i>Inspection</i> grids <i>&gt; Customize &gt;</i> <i>Layouts</i> .
Valve Pass/Fail	Status of the valve after inspection. Add and enable Activate Valve Pass/Fail in the Information grid to allow data entry in the Inspections grid. See VM, <i>Data Entry</i> > <i>Edit VM Data</i> > <i>Information</i> and <i>Inspection</i> grids > <i>Customize</i> > <i>Layouts</i> .
Valve Secured	Check box for indicating if the value was left secured. Add and enable Activate Valve Secured in the Information grid to allow use of the field in the Inspections grid. See VM, <i>Data Entry &gt; Edit VM Data &gt;</i> <i>Information</i> and <i>Inspection</i> grids <i>&gt; Customize &gt;</i> <i>Layouts</i> .
Valve Type	Type of valve such as block or plug. See VM, <i>Data Entry</i> > <i>Edit VM Data &gt; Information</i> or <i>Inspection</i> grid > <i>Customize &gt; Layouts</i> .
Vendor	Name of the company providing a service.

Notes			

## Glossary

The following information provides a description of terms commonly used in the PCS Axis software.

Name	Description
AC	Alternating Current (AC). Type of current that reverses direction. Current flows in a positive direction for 1/120 second, then in a negative direction for 1/120 second, and so on. A/C current completes 60 cycles per second.
AC CIS	Alternating Current Close Interval Survey. An above ground, indirect inspection method conducted using an AC voltmeter to measure the influence of AC voltages at regular intervals along the pipeline. The survey identifies areas of inadequate cathodic protection and possible shock hazards to personnel due to excessive AC potentials typically induced by an AC power system near the pipeline, such as overhead power transmission lines. Typical voltage measurements are in a range of 0-15V with 15V indicating a shock hazard.
ACCA	AC Current Attenuation (ACCA). An above ground, indirect inspection method used to determine the condition of the pipeline coating. This survey method detects coating holidays and other anomalies by measuring changes in the magnetic field in the soil above and around the pipeline. Changes in the magnetic field are caused by coating defects.

### Table B-2. Glossary

Name	Description
ACVG	Alternating Current Voltage Gradient (ACVG). An above ground, indirect inspection method that measures AC voltage gradients (changes in leakage current) in the soil above and around the pipeline in an effort to locate and estimate the size of coating holidays and identify corrosion activity.
Addition Item	An addition item is a user-created item, such as a layout theme addition for a data entry grid.
Amp	Ampere (Amp). Basic unit of electric current.
Anode	The point in an electrochemical cell where the energy level is higher than its cathodic counter part, causing current to leave and take metal with it. This is the point where corrosion occurs.
Application Scheme	An application scheme is a group of named property settings that change the overall appearance of the PCS Axis interface. Currently PCS Axis only provides a default application scheme which cannot be customized.
Baud	Unit of speed in data transmission equal to one bit per second.
Bond	A wire that connects a cathodically protected pipeline to a foreign pipeline to allow current to travel from one pipeline to the another in a controlled manner, without causing corrosion. Without the bond, current can travel from one pipeline to another (in an interference situation) creating anodic areas and causing pipeline corrosion.
Bullhorn Token	Bullhorn Token is the unique Key generated by the BAT website when setting up an Extract to be used in a Bullhorn Bridge definition. See <i>Adding a Bullhorn</i> <i>Bridge Definition</i> (page 543) for more information.
Cathodic Protection	Cathodic Protection (CP). Process of making an entire metallic structure the cathode and a separate expendable material the anodes in a carefully designed electrochemical cell.

### Table B-2. Glossary (continued)

Name	Description
CIS or CIPS	Close Interval Survey (CIS) or Close Interval Potential Survey (CIPS). An above ground, indirect inspection method that measures pipe-to-soil (P/S) potential readings taken at closely spaced intervals along the pipeline. This type of survey is used to evaluate the effectiveness of a cathodic protection system; it locates areas between test points that are below (less negative than) a certain voltage level (usually –.85V) considered necessary for effective cathodic protection.
Continuous Survey	Above ground survey method used to identify pipeline coating damage (such as coating anomalies and holidays) and determine effectiveness of a CP system. Also referred to as an indirect survey. Survey methods include CIS (on, on/off, and static); AC CIS; DCVG; ACCA (electromagnetic); ACVG; Soil Resistivity; and Pearson.
Criterion	Standard for assessment of the effectiveness of a CP system.
Current	Quantity of flow of electricity, similar to gallons per minute in a water pipe. Current (I) is measured in amperes (Amps).
DC	Direct Current (DC). Type of current that flows steadily in one direction.
DCVG	Direct Current Voltage Gradient (DCVG). An above ground indirect inspection method that measures DC voltage gradients in the soil above and around the pipeline to locate and estimate the size of coating holidays and identify corrosion activity.
Depolarized Close Interval Potential Survey	A close interval survey (CIS) performed after influencing cathodic protection (CP) current sources have been turned off for a sufficient duration of time for depolarization to have occurred. This is often called a native-state CIS if it is performed prior to the initial application of CP.

### Table B-2. Glossary (continued)

Name	Description
Derived Field	A derived field is a field with a value that is derived from values in dependent fields. See <i>Working with Derived Fields</i> (page 226) for more information.
Digital Meter	A digital device that measures electrical voltage and current. Device displays measurements on a screen.
Facility Key	A user defined field (UDF) set up in PCS Axis that is associated with an external system ID when setting up a Bridge definition to be used with an external system. See <i>Using a Facility Key in Bridge</i> (page 492) for more information.
GGA	GPS NEMA message format that provides information about output time, position, and fix data for a GPS receiver.
GPS	Global Positioning System (GPS). A navigational system involving satellites and computers (such as the Allegro Field PC and Bullhorn devices) that determines the latitude and longitude of a receiver on earth by computing the time difference for signals from different satellites to reach the receiver.
Holiday	A discontinuity in a protective coating that exposes the unprotected surface to the environment.
Interrupted Survey	See On/Off Survey.
IRF	IR free (IRF) reading.
ΜΑΟΡ	Maximum Allowable Operating Pressure (MAOP). Based on the design of the pipe, this is the highest operating pressure a pipe can theoretically operate under.
Merge Replication	A process where updated records on the subscriber are copied to the publisher and vice versa during synchronization.
МОР	Maximum Operating Pressure (MOP). Highest pressure a pipe has actually operated under.

Table B-2.	Glossary	(continued)
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Name	Description
Ohm	A unit of electrical resistance equal to that of a conductor in which a current of one ampere is produced by a potential of one volt across its terminals.
On/Off Survey	Also referred to as <i>Interrupted Survey</i> . A close interval survey conducted with regular, timed interruptions between the current source and the cathodic protection system. On readings are compared later with the Off readings to gauge the effectiveness of the cathodic protection system.
P/S	Pipe-to-Soil (P/S). Voltage potential generated between a buried pipe and its surrounding soil, the result of electrolytic action and a cause of electrolytic corrosion of the pipe.
PCS Axis Installed Item	An item installed during the PCS Axis software installation, such as themes and routes. Installed items are identified with [PCS] in brackets and a globe icon, such as the grid layout theme labeled <b>S</b> [PCS] Test Point Inspections.
Pearson Survey	An above ground survey technique used to locate coating holidays in buried pipelines. The survey compares potential gradients along the pipeline as measured between two movable electrical ground contacts. The potential gradients result from an applied AC signal leaking to earth at coating holidays. This survey is also called a DCVG survey.
Picklist	A list of acceptable choices for a field in a data entry grid that a user selects from when entering data (formerly called "validation table").
Pipeline	A collection of segments that generally carry the same product and are interconnected (either end to end or as a lateral). Segments generally start and end at isolation points (for example, stations or valves), whereas a pipeline generally starts and ends at change of custody points.

### Table B-2. Glossary (continued)

Name	Description
Publication (Publisher)	Primary database on a network server used in merge replication and synchronization with subscription databases.
Publication Retention Period	Expiration period for subscriptions. A subscription becomes expired (obsolete) when the subscriber does not synchronize the subscription with the <i>publication</i> database within the publication retention period. An expired subscription must be re-initialized. See <i>Reinitializing a Subscription</i> (page 786).
Range Checking	An acceptable range of values allowed for data entry in an inspection field. When a value is entered that falls outside the acceptable range of values, PCS Axis displays a warning message and allows the user to correct the invalid entry.
Remote Earth	A location on the earth far enough from the affected structure that the soil potential gradients associated with currents entering the earth from the affected structure are insignificant.
Replication	See Merge Replication.
Resistance	Resistance (R) limits current flow in a given circuit; similar to friction in water pipe.
ROW	Right-of-Way (ROW). Section of land designated for use by a pipeline. The NPMS (National Pipeline Mapping System) refers to ROWs as pipeline corridors.
Segment	User-defined length of pipe over which risk calculations are performed. Sections are specified as a uniform length of pipe (such as 1000 feet, 1 mile, or 1 kilometer) or for certain event changes such as pipe design, class change, or environmentally sensitive areas.
Shunt	A resistor inserted (usually permanently) in a circuit to assist measurement of current. Resistance is very small and does not affect intended operation of the circuit.

### Table B-2. Glossary (continued)

Name	Description
SMTP	Simple Mail Transfer Protocol. A data transmission format used to send email.
Soil Resistivity	Above ground indirect inspection method.
SSL	Secure socket layer (SSL). SSL is a communication protocol used by an email server to transmit information over the Internet in an encrypted form for security purposes. To determine if your email client software supports SSL, contact your company's IT System Administrator.
SSMS	SQL Server Management Studio. A Microsoft software application for working with components of SQL Server and publication and subscription databases when using PCS Axis Synchronization.
Stationary Data Logger (SDL)	Survey equipment used to detect telluric current on a pipeline under survey. Two or more SDLs install at a fixed location on the pipeline under survey for a period of time. During this time period, SDLs measure and record ON/OFF values for an interrupted survey with GPS synchronization.
Stationary Survey	Type of cathodic protection (CP) survey that uses two or more GPS synchronized stationary data loggers (SDLs). The SDLs measure and record ON/OFF values for an interrupted survey with GPS synchronization. Stationary survey data is used in telluric current correction of periodic and close interval test point surveys.
Subscription (Subscriber)	Database instance on a remote computer used in merge replication when synchronizing data between the publisher and subscriber databases.
Subscription Expiration Period	See Publication Retention Period.

### Table B-2. Glossary (continued)

Name	Description
Survey Direction	The direction a close interval survey (CIS) is conducted along a pipeline, usually expressed as upstream (upstation) or downstream (downstation). CIS may be performed in either the upstation or downstation direction. The data shall clearly indicate which direction the survey was conducted.
Survey Interval	Distance between measurements along the pipeline in a close interval survey (CIS).
Synchronization	The process of replicating data between the publisher and subscriber databases. Only data that has changed since the last synchronization is replicated.
Telluric Current	Telluric current is low voltage electrical current that occurs naturally in the Earth's crust. It is a result of fluctuations in the Earth's magnetic field due to ionospheric disturbances typically caused by sun spot activity. Movement of the Earth's magnetic field can induce telluric current to flow on pipelines. Telluric effects are more evident in the northern and southern latitudes on pipelines that run in a north and south direction. Telluric current activity varies with the time of day, latitude, and solar activity; it can cause significant fluctuation in the structure-to-electrolyte potential.
User Defined Field	A user defined field (UDF) is a user-created field. UDFs are created when PCS Axis does not provide a field for data entry.
Vac	Volts Alternating Current (Vac).
Vdc	Volts Direct Current (Vdc).
Volt	Unit of measure for voltage (V). Electrical force or pressure. Voltage causes current to flow similar to pressure in a water pipe.
Volt Meter	Analog or digital device that measures electrical voltage or electrical force. Volt meter measurements help identify the potential (like water pressure) at one point relative to another point.

### Table B-2. Glossary (continued)

Name	Description
VTG	GPS NEMA message format that provides information about heading and speed (course over ground).
ZDA	GPS NEMA message format that provides UTC and local date/time data. Provides current universal coordinated time and day, month, and year. ZDA is used when performing GPS-synchronized on/off readings.

### Table B-2. Glossary (continued)

### Notes

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# C

# System Security

PCS Axis security is based on a user role method. A user role is a collection of permissions that tell the system which features a user has access to and whether or not the user is allowed to add, edit, or delete data. The system supports the following PCS Axis installed user roles:

- SysAdmin
- User
- Read Only

The SysAdmin user role has full control of all PCS Axis features and functions. The SysAdmin assigns the SysAdmin, User, or Read Only user role to all other users of the PCS Axis system. User role assignments are set up in User Management (*Tools > User Management*).

The following table identifies system permissions included with the User and Read Only user roles. Information is organized based on PCS Axis menu and menu functions, then by permission level and user role.

Menu	Function	Permission	User	Read Only
File	File Menu	Access	Yes	Yes
File	Select ROWs	Access	Yes	Yes
File	Select ROWs	Edit (move, rename), Add, Delete	Yes	No
File	Select ROWs	Find, Change, Make Selections, Clear	Yes	Yes

#### Table C-3. Permissions for PCS Axis Installed User Roles

Menu	Function	Permission	User	Read Only
File	Database Integrity Check	Access	No	No
Modules	Modules Menu	Access	Yes	Yes
Modules	CPDM, VM, ACM, ICM, LSM, ISM, CMM	Access	Yes	Yes
Data Entry	Data Entry Menu	Access	Yes	Yes
Data Entry	Edit Module Data	Access	Yes	Yes
Data Entry	Edit Module Data	Edit, Add, Delete	Yes	No
Data Entry	Edit Module Data > Build Survey	Access	Yes	No
Data Entry	Edit Module Data > Mini-grid	Access	Yes	Yes
Data Entry	Edit Module Data > Options	Access	Yes	Yes
Data Entry	Edit Module Data > Public Layout Themes	Access	Yes	Yes
Data Entry	Edit Module Data > Public Layout Themes	Edit, Add, Delete	No	No
Data Entry	Edit Module Data > Private Layout Themes	Access, Edit, Add, Delete	Yes	Yes
Data Entry	Edit Module Data > Public Sort Themes	Access	Yes	Yes
Data Entry	Edit Module Data > Public Sort Themes	Edit, Add, Delete	No	No
Data Entry	Edit Module Data > Private Sort Themes	Access, Edit, Add, Delete	Yes	Yes
Data Entry	Edit Module Data > Public Filter Themes	Access	Yes	Yes

Table C-3. Permissions for PCS Axis Installed User Roles (continued)

Menu	Function	Permission	User	Read Only
Data Entry	Edit Module Data > Public Filter Themes	Edit, Add, Delete	No	No
Data Entry	Edit Module Data > Private Filter Themes	Access, Edit, Add, Delete	Yes	Yes
Data Entry	Edit Module Data > Ad Hoc Filters	Edit, Add, Delete	Yes	Yes
Data Entry	Define Routes Menu	Access	Yes	Yes
Data Entry	Define Routes	Edit, Add, Delete, Undelete	Yes	No
Data Entry	Define Schedules Menu	Access	Yes	Yes
Data Entry	Define Schedules	Edit	No	No
Data Entry	Edit Schedule Settings Menu	Access	Yes	Yes
Data Entry	Edit Schedule Settings	Edit	No	No
Data Entry	Edit ROW Detail Menu	Access	Yes	Yes
Data Entry	Edit ROW Detail	Edit, Add, Delete, Undelete	Yes	No
Data Entry	Pipeline Series	Access	Yes	Yes
Data Entry	Pipeline Series	Edit/Add/Delete/ Undelete	No	No
Data Entry	Survey Folder Maintenance	Access	Yes	Yes
Data Entry	Survey Folder Maintenance	Edit, Add, Delete, Undelete	No	No
Reports/Graphs	Reports/Graphs Menu, Reports, Graphs, Custom Reports	Access	Yes	Yes

Table C-3. Permissions for PCS Axis Installed User Roles (continued)

Menu	Function	Permission	User	Read Only
Tools	Tools Menu	Access	Yes	Yes
Tools	Synchronization	Access	Yes	Yes
Tools	Synchronization > Create Publication	Access	No	No
Tools	Synchronization > Subscription Configuration (Publisher)	Access	No	No
Tools	Synchronization > Synchronization Configuration (Publisher)	Access	No	No
Tools	Synchronization > Configure Subscription (Subscriber)	Access	Yes	Yes
Tools	Synchronization > Synchronize Now (Subscriber)	Access	Yes	Yes
Tools	Synchronization > Subscription Configuration (Subscriber)	Access	Yes	Yes
Tools	<ul><li>Bridge Menu</li><li>Bridge</li></ul>	Access, Edit	Yes	No
Tools	Field and UDF Customization Menu	Access	Yes	No
Tools	Field and UDF Customization	Edit, Add, Delete	No	No
Tools	Data Modification Utility	Access	No	No
Tools	Email Notification	Access	No	No
Tools	Themes Management Menu	Access	Yes	Yes
Tools	Themes Management	Edit	No	No
Tools	Activation Key	Access	Yes	Yes

Table C-3.	Permissions	for PCS Axis	Installed User	Roles (continued)
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Menu	Function	Permission	User	Read Only
Tools	Facility Type Themes Management Menu	Access	Yes	Yes
Tools	Facility Type Themes Management	Edit	No	No
Tools	User Management Menu	Access	No	No
Tools	User Management	Edit	No	No
Tools	Application Schemes Menu	Access	Yes	No
Tools	Application Schemes	Edit	Yes	No
Tools	Options Menu	Access	Yes	No
Tools Field Computer	<ul> <li>Options &gt; Bullhorn</li> <li>Options &gt; Criteria</li> <li>Options &gt; Editing</li> <li>Options &gt; Field Computer</li> <li>Options &gt; General</li> <li>Options &gt; Hierarchy</li> <li>Options &gt; Reports</li> <li>Options &gt; Security</li> <li>Field Computer Menu</li> <li>Send</li> </ul>	Edit	No Yes	No
Help	<ul> <li>Receive</li> <li>Log</li> <li>Help Menu</li> <li>About PCS</li> <li>Technical Support</li> </ul>	Access	Yes	Yes

Table C-3. Permissions for PCS Axis Installed User Roles (continued)

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