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# The Asset Safety Work Process

V3.6.0.0.0





## The Meridium APM Asset Safety Work Process V3.6.0.0.0

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# About This Document

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This file is provided so that you can easily print a portion of the **Asset Safety** section of the Meridium APM Help system. This document is not meant to be read electronically using the PDF. If you want to read the documentation electronically, you should use one of the Help systems. This file is set up to facilitate double-sided printing and includes blank pages between sections so that each section will begin on an odd page and will be printed on the *front* of the page.

Because this file represents an excerpt from the Meridium APM Help system, parts of this document may seem incomplete outside the Help system itself. When you read the documentation via the Help system, you will see links which serve as cross-references to other areas of the documentation. These cross-references are not available in this document.

To access the Meridium APM Help system, in the Meridium APM Framework application, click the **Help** menu, and then click **Meridium APM Help**.





# Documentation Conventions

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Throughout the documentation, we use various stylistic conventions that make it easier to interpret information and instructions. The following table provides a list and description of the conventions that are used throughout the Meridium APM documentation.

Convention	Description	Example
<b>Bold</b>	Identifies labels that appear on the screen. Identifies folder paths and file names when the folder path or file name is included in step-by-step instructions.	The <b>Save As</b> dialog box appears. Click <b>Cancel</b> . In the Catalog folder <b>\\Public\Meridium\Modules\Core\Queries</b> , open the query <b>Field History Records</b> .
\\	Identifies the beginning of a folder path.	The query is located in the following Catalog folder: <b>\\Public\Meridium\Modules\Core\Queries</b> .
<b>Courier New</b>	Identifies text that you must type.	Type <b>root</b> .
<>	Indicates that the data inside the angle brackets is variable.	Click <b>Expand/Collapse &lt;Record&gt;'s Children</b> , where <Record> is the ID of the selected record.
[ ]	Indicates that the data inside the square brackets is optional.	Type the following text: <b>&lt;Catalog Path&gt;,[Query Parameters]</b> ...where: <ul style="list-style-type: none"><li>• <b>&lt;Catalog Path&gt;</b> is the Catalog path of the desired query.</li><li>• <b>[Query Prompt Value]</b> is a value that you want to supply for a prompt in the query. If you do not pass in query prompt values, you will be prompted to supply them when you run the query.</li></ul>



# Basics

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## About the Asset Safety Work Process

The *Asset Safety Work Process* is focused on maintaining safe processes. The Asset Safety Work Process consists of the steps that are outlined in the following table.

Step	Description	Details
1	Assess the operating risks.	Allows you to define and organize the risks that are associated with a system.
2	Determine Safety Integrity level (SIL)	Allows you to select the appropriate risk reduction required for the system to achieve an acceptable level of risk by determining the Safety Integrity Level (SIL) for that system.
3	Validate Instrument design	Allows you to define the instrumented functions that are associated with a safety instrumented system, create a visual representation of the safety instrumented system, and validate that the safety instrumented system meets the defined SIL for that system.
4	Consolidate Plan to achieve SIL	Allows you to: <ul style="list-style-type: none"><li>• Define, document, and maintain proof tests for the safety instrumented system, including the supporting calibrations and inspections for those proof tests as well as the schedules on which the proof tests will be executed.</li><li>• Define a maintenance plan for the safety instrumented system.</li><li>• Schedule reevaluations, audits, and redesigns of the safety instrumented system, as needed.</li></ul>
5	Execute strategy	Allows you to execute the activities associated with proof tests, maintenance plans, recommendations, redesigns, and audits for the safety instrumented systems as well as document any failures or trips that occur during these activities.
6	Operator and monitor performance	Allows you to compare the actual failure rates with the design failure rates via the work orders, proof test results, and trip reports and make decisions based upon that data.

The following image shows an illustration of how *all* the steps in the Asset Safety Work Process relate to one another. Each step in the work process is represented by an orange circle. In addition, you can see that the entire work process is built upon the APM Foundation Work Process, whose components are represented by the blue boxes.



Within the Meridium APM product, each of the steps listed above can be accomplished using one or more of the following modules:

- Hazards Analysis
- SIS Management
- Calibration Management

# Asset Safety System Requirements

Multiple licenses are required to take advantage of Asset Safety modules. In addition to the following licenses, your system must contain the basic Meridium APM system architecture:

- Hazards Analysis
- SIS Management
- Calibration Management

After you have configured the basic system architecture and licensed these modules, you will need to perform configuration steps for each module.



# Installation, Upgrade, and Configuration

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## First-Time Deployment Workflow

Deploying and configuring the Asset Safety Work Process for the first time includes completing multiple steps, which are outlined in the table in this topic. *All* of these steps are required to fully implement the Asset Safety Work Process. These steps provide all the information that you need to deploy Asset Safety with the basic Meridium APM system architecture.

Step	Task
1	Configure the Hazards Analysis module.
2	Configure the SIS Management module.
3	Configure the Calibration Management module.

## Upgrade Workflow

You can upgrade to V3.6.0.0.0 using the instructions that are provided in the Installation, Upgrade, and Configuration documentation for each Asset Safety module:

- Hazards Analysis
- SIS Management
- Calibration Management





# User Instructions

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## Asset Safety User Instructions

The user instructions for Asset Safety modules are provided in the documentation for the related module. Documentation for the Asset Safety dashboard is provided in the Asset Safety Reference Information documentation.



# Reference Information

## Dashboard

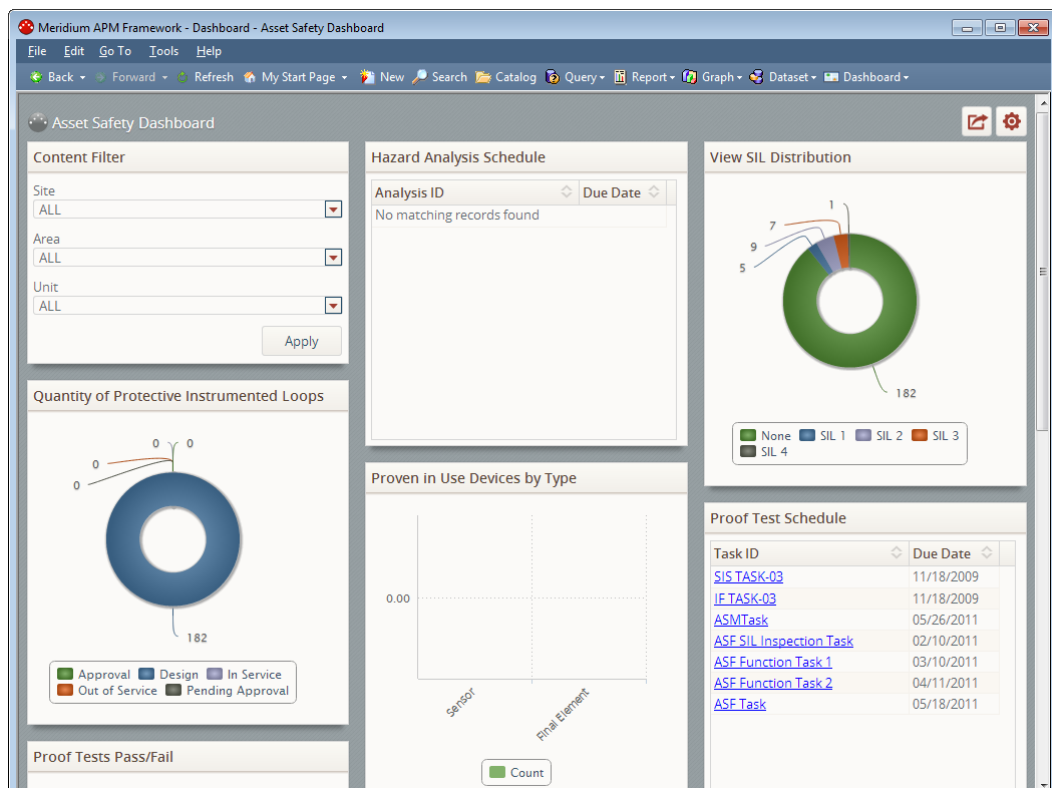
### Accessing the Asset Safety Dashboard

You can access the Asset Safety dashboard to view information about pieces of equipment and locations that you analyze using Asset Safety modules.

To access the baseline Asset Safety Dashboard:

- On the Meridium APM Framework main menu, click **Go To**, point to **Asset Safety**, and then click **Dashboard**.

The Dashboard page appears, displaying the Asset Safety dashboard.



## Aspects of the Asset Safety Dashboard

The Asset Safety dashboard contains sections that display information about pieces of equipment and locations that you analyze using Asset Safety modules. The Asset Safety dashboard contains the following sections:

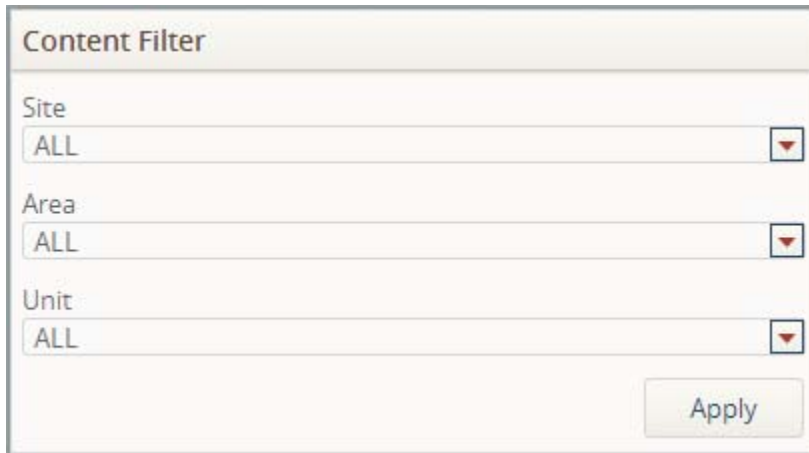
- Calibration Pass/Fail Results for Last 12 Months
- Calibration Recommendations
- Calibration Schedule
- Content Filter
- Hazard Analysis Schedule
- Proof Tests Pass/Fail
- Proof Test Schedule
- Proven in Use Devices by Type
- Quantity of Protective Instrument Loops
- Quantity of SIF Trips
- View SIL Distribution

**Note:** Your use of the Asset Safety dashboard will depend upon your role in the organization and the Asset Safety modules that are associated with your role. For example, you might choose to display certain sections and hide others depending on the type of data that you want to view on the dashboard. This documentation does *not* assume a workflow for using the Asset Safety dashboard. Instead, details on working with dashboards in general and information on the sections that are displayed on the dashboard and their supporting Catalog items are provided.

## Sections Displayed on the Asset Safety Dashboard

### Content Filter

The Content Filter section is a configured Content Filter section that contains lists that are used to filter the data that is displayed in other sections on the dashboard.



The screenshot shows a 'Content Filter' panel with three dropdown menus. The first dropdown is labeled 'Site' and has 'ALL' selected. The second dropdown is labeled 'Area' and has 'ALL' selected. The third dropdown is labeled 'Unit' and has 'ALL' selected. Below the dropdowns is an 'Apply' button.

The Content Filter section contains the following lists:

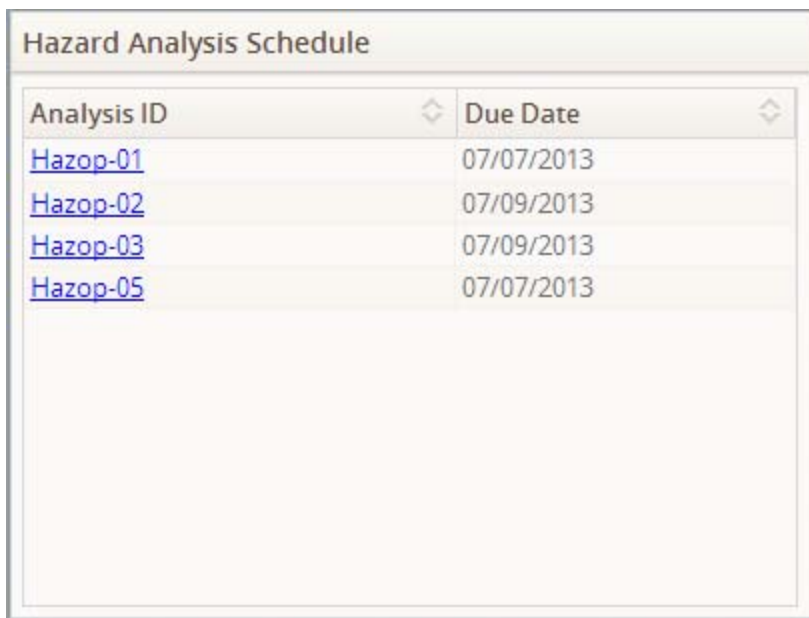
- Site
- Area
- Unit

### Hazards Analysis Schedule

The Hazards Analysis Schedule section is a configured List - Query Result section that displays the following columns:

- **Analysis ID:** Displays a hyperlink for each Hazards Analysis record whose Next Reevaluation Date value corresponds with a date in the past *or* a date that will occur within the next 30 days.
- **Due Date:** Displays the Next Reevaluation Date value for the corresponding Hazards Analysis record.

The following image shows an example of the **Hazards Analysis Schedule** section.



Analysis ID	Due Date
<a href="#">Hazop-01</a>	07/07/2013
<a href="#">Hazop-02</a>	07/09/2013
<a href="#">Hazop-03</a>	07/09/2013
<a href="#">Hazop-05</a>	07/07/2013

You can click the hyperlinked Record ID of any Hazards Analysis record that appears in the **Analysis ID** list to view that Hazards Analysis record in the Record Manager.

## View SIL Distribution

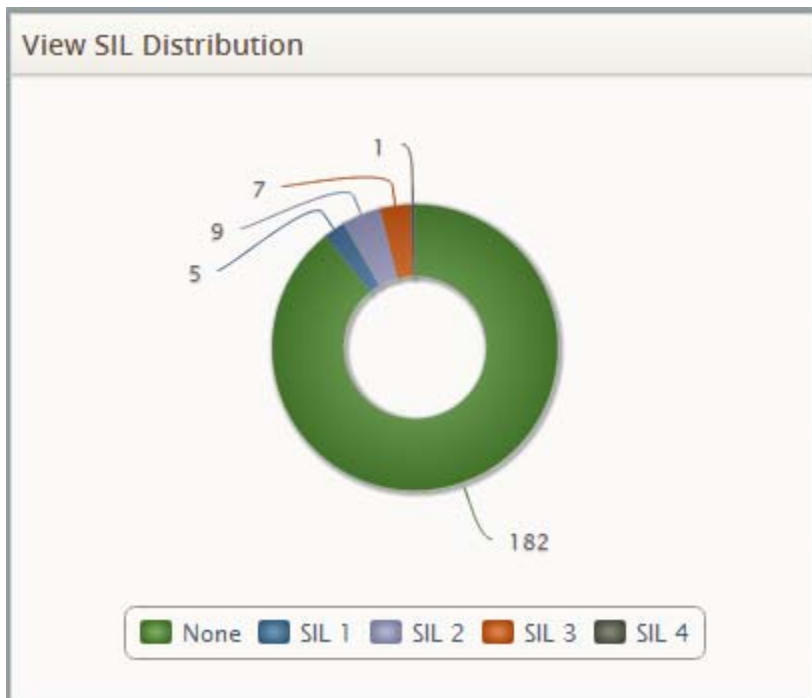
The **View SIL Distribution** section is a configured **Chart - Category** section that displays a pie chart that represents the sum of Instrumented Function records that exist in the database. The chart is divided into sections based on the value in the Selected SIL Level of these Instrumented Function records.

Each section represents the sum of Instrumented Function records whose Selected SIL Level value is:

- 1
- 2
- 3
- 4

Below the pie chart, a legend displays the color that is associated with each value. Additionally, Instrumented Function records whose Selected SIL Level field does not contain a value are represented by a section and the value *None*.

The following image shown an example of the **View SIL Distribution** section. In this example, the pie chart indicates that there are *seven* Instrumented Function records whose Selected SIL Level field contains the value 2.



## Quantity of Protective Instrumented Loops

The **Quantity of Protective Instrumented Loops** section is a configured **Chart - Category** section that displays a pie chart that represents the sum of Protective Instrument Loop records that exist in the database. The chart is divided into sections based on the state of Protective Instrument Loop records.

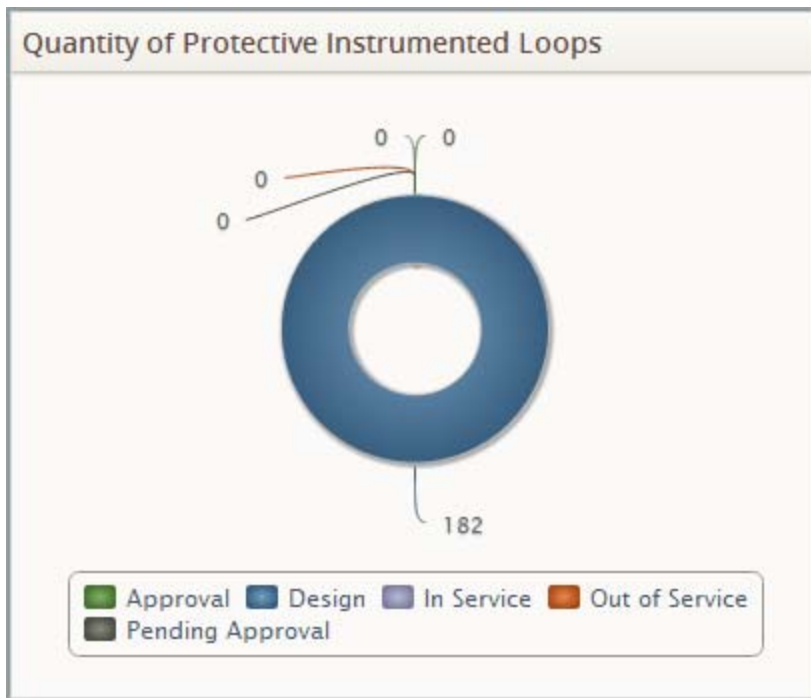
Each section represents the sum of Protective Instrument Loop records whose current state is:

- Approval
- Design
- In Service

- Out of Service
- Pending Approval

Below the pie chart, a legend displays the color that is associated with each state.

The following image shows an example of the **Quantity of Protective Instrumented Loops** section. In this example, the pie chart indicates that *182* Protective Instrument Loop records are in the Design state.



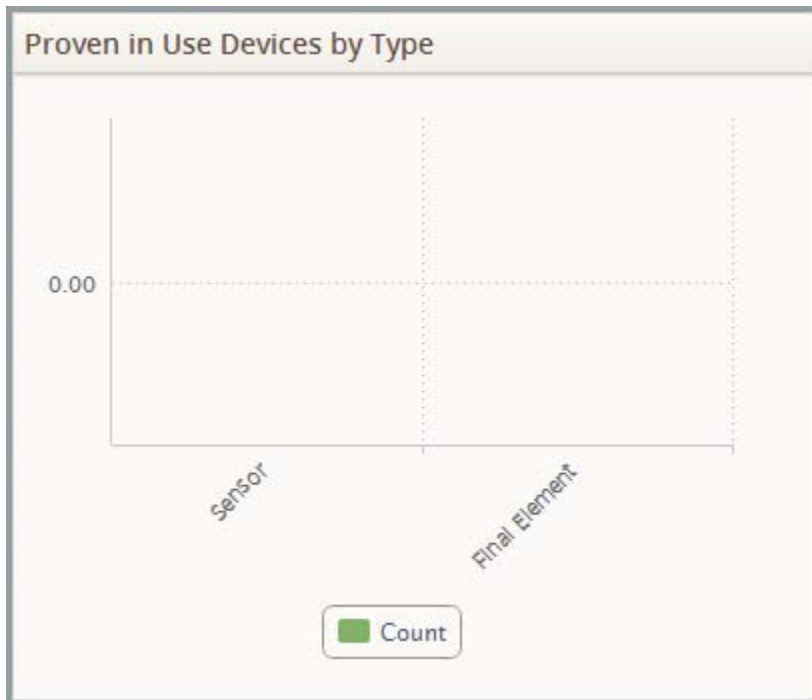
## Proven in Use Devices by Type

The **Proven in Use Devices by Type** section is a configured **Chart - Series** section that displays a bar graph that plots the number of devices by device type. The following device types are displayed on the graph:

- Sensor
- Final Element

The following image shows an example of the **Proven in Use Devices by Type** section.





## Proof Test Schedule

The **Proof Test Schedule** section is a configured **List - Query Result** section that displays the following columns:

- **Task ID:** Displays a hyperlink for each Task record whose:
  - Task Type value is *Proof Test*.

*-and-*

  - Next Date value corresponds with a date in the past *or* a date that will occur within the next 30 days.
- **Due Date:** Displays the Next Date value for the corresponding Task record.

The following image shows an example of the **Proof Test Schedule** section.

Proof Test Schedule	
Task ID	Due Date
<a href="#">SIS TASK-03</a>	11/18/2009
<a href="#">IF TASK-03</a>	11/18/2009
<a href="#">ASMTask</a>	05/26/2011
<a href="#">ASF SIL Inspection Task</a>	02/10/2011
<a href="#">ASF Function Task 1</a>	03/10/2011
<a href="#">ASF Function Task 2</a>	04/11/2011
<a href="#">ASF Task</a>	05/18/2011

You can click the hyperlinked Record ID of any Task record that appears in the Task ID list to view that Task record in the Record Manager.

## Proof Tests Pass/Fail

The **Proof Tests Pass/Fail** section is a configured **Chart - Series** section that displays a bar graph that plots on a yearly basis, for the past five years, the number of SIS Proof Test records that are related to a Functional Test Detail record whose Pass/Fail value is either:

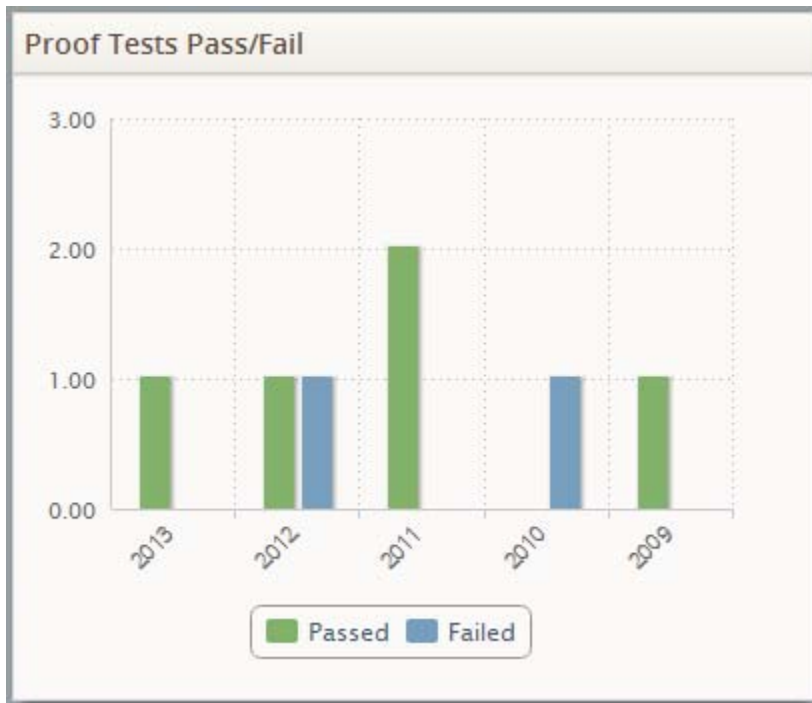
- Pass.

*-or-*

- Fail.

Each of these scenarios is represented by a bar on the graph that is shaded according to the legend that appears below the graph.

The following image shows an example of the **Proof Tests Pass/Fail** section.



## Calibration Recommendations

The **Calibration Recommendations** section is a configured **List - Query Result** section that displays the following columns:

- **Headline:** Displays a hyperlink for each Calibration Recommendation record whose Target Completion Date value corresponds with a date in the past *or* a date that will occur within the next 30 days.
- **State:** Displays the state of the corresponding Calibration Recommendation record.
- **Due Date:** Displays the Target Completion Date value of the corresponding Calibration Recommendation record.

The following image shows an example of the **Calibration Recommendations** section.

Calibration Recommendations		
Headline	State	Due Date
<a href="#">REC-1623</a>	Pending	06/30/2013
<a href="#">REC-1624</a>	Pending	07/08/2013
<a href="#">REC-1625</a>	Pending	07/15/2013
<a href="#">REC-1626</a>	Pending	07/22/2013

You can click the hyperlinked Recommendation Headline value of any Calibration Recommendation record that appears in the **Headline** list to view that Calibration Recommendation record in the Record Manager.

## Calibration Schedule

The **Calibration Schedule** section is a configured **List - Query Result** section that displays the following columns:

- **Task ID:** Displays a hyperlink for each Calibration Task record whose Next Date value corresponds with a date in the past *or* a date that will occur within the next 30 days.
- **Due Date:** Displays the Next Date value in the corresponding Calibration Task record.

The following image shows an example of the **Calibration Schedule** section.

Calibration Schedule	
Task ID	Due Date
<a href="#">Fluke, An, 11 U, Lnr, DCV/DCV</a>	01/19/2005
<a href="#">Fluke, An, 11 U/D, Lnr, DCV/DCV</a>	01/20/2005
<a href="#">Fluke, An, 3 D, Lnr, A/DCV</a>	01/19/2005
<a href="#">Fluke, An, 3 D, Lnr, DCV/DCV</a>	01/19/2005
<a href="#">Fluke, An, 3 D, Lnr, PSI/A</a>	01/19/2005
<a href="#">Fluke, An, 3 D, Lnr, PSI/V</a>	01/19/2005
<a href="#">Fluke, An, 3 U, Lnr, DCV/DCV</a>	01/22/2005
<a href="#">Fluke, An, 3 U, Lnr, LB/A</a>	01/19/2005
<a href="#">Fluke, An, 3 U, Lnr, O2/A</a>	01/19/2005
<a href="#">Fluke, An, 3 U, Lnr, PSI/A</a>	01/19/2005

Page 1 of 7 63 record(s)

You can click the hyperlinked Record ID of any Calibration Task record that appears in the Task ID list to view that Calibration Task record in the Record Manager.

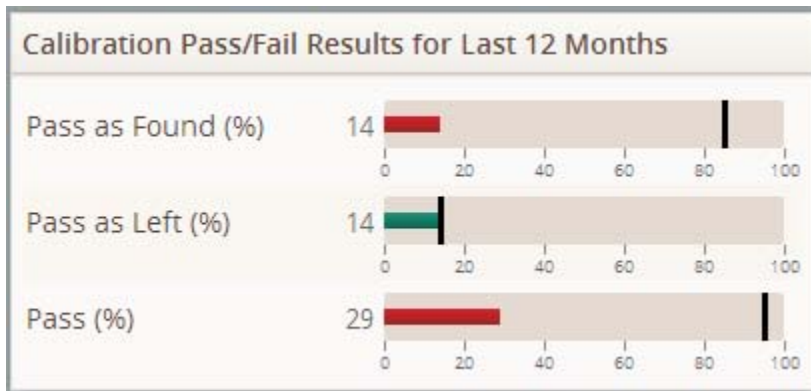
## Calibration Pass/Fail Results for Last 12 Months

The Calibration Pass/Fail Results for Last 12 Months section is a configured Measures - General section that displays the following measures that are associated with Calibration records in the database whose Calibration Start Date value corresponds with a date that has occurred in the previous 12 months:

- Pass as Found: Displays the percentage of these Calibration records that contain the value *PASS* in the Overall AF Pass/Fail field.
- Pass as Left: Displays the percentage of these Calibration records that:
  - Contain the value *PASS* in the Overall AL Pass/Fail field.
  - *-but-*
  - Do *not* contain the value *PASS* in the Overall AF Pass/Fail field.

- **Pass:** Displays the percentage of these Calibration records that contain the value *PASS* in the Overall AL Pass/Fail *or* Overall AF Pass/Fail field.

The following image shows an example of the **Calibration Pass/Fail Results for Last 12 Months** section.



## Quantity of SIF Trips

The **Quantity of SIF Trips** section is a configured **Chart - Series** section that displays a bar graph that plots on a yearly basis, for the past five years, the number of SIS Trip Report records whose Trip Type value is either:

- Unsafe Demand (Unsafe).

*-or-*

- Spurious Trip (Spurious).

Each of these scenarios is represented by a bar on the graph that is shaded according to the legend that appears below the graph.

The following image shows an example of the **Quantity of SIF Trips** section.



## Catalog Folder Structure

### About Asset Safety Catalog Items

Asset Safety Catalog items are situated with their related modules within the Catalog hierarchy. For more details about these Catalog items, consult the following sections of the Meridium APM Help system:

- Hazards Analysis Catalog Folder Structure
- SIS Management Catalog Folder Structure
- Calibration Management Catalog Folder Structure

For information about the Catalog items that return results on the Asset Safety dashboard, see the Dashboard Queries Folder topic in the SIS Management Help.