

Safety system reporting SafetyInsight™

Keeping track of your safety functions is essential to safe and profitable operation. By utilizing information from the safety and automation system, SafetyInsight™ provides reports, health status of the safety functions and decision support for a range of safety management work processes.

In order to get license to operate, an operating company normally needs to test and document the behavior of the safety system on regular intervals. SafetyInsight™ automates a large portion of this reporting, thereby reducing operational cost. Across the organization, users in different roles can easily get hold of safety functions' health status based on their needs and requirements. Typical usecases are documenting valve operations and shutdown functions as input to test planning and safety reports.

SafetyInsight™ runs analysis and create reports based on data from sources like alarm&event lists and information management databases. It does not interfere with the safety functions of the safety system itself, and does not affect the integrity of the safety system.

What it means to you

- Increased confidence when verifying operational performance of safety and shutdown systems
- Time saved as data is automatically collected and processed into reports



- Reduced costly production downtime and man-hours saved due to documented safety functions (integrity, SIL) based on occurred shutdowns and unplanned valve activities
- Information available across the organization

SafetyInsight™ has the following components:

- Automatic Shutdown Report

The application tracks the sequence of events when a shutdown occurs. The report compares the logged events to expected shutdown behavior and verifies that valves and breakers go into safe positions. Detailed reports of the tripped shutdown levels are made automatically after the occurrence. The report provides the initial cause that tripped the shutdown, as well as other causes and effects that have been involved.

- Valve Verification

Provide reports of safety valve operations and behavior. Based on safety system events and valve limit switches, the

application generates reports describing valve operations and calculates valve travel times. It verifies the detected travel time against acceptance limits and makes easily readable overviews mapping acceptable, too slow, and faulty operations. The evolution of valve travel times can be displayed in a trend

– Partial Stroke

A partial stroke test is a way of testing and documenting a valve operation without shutting down the production. The Partial Stroke report provides an overview over accomplished tests and optionally, functionality to start valve stroke tests. All valves configured for stroke testing are listed in the report. Status information about the last ESD- and PSD stroke test as well as travel time and countdown in hours to next test is provided for each valve.

– Barrier Test

Valves are tested for leakage by closing the valve to be tested, building a sufficient pressure difference over the valve and closing the immediate downstream volume. The Barrier Test application logs the downstream pressure during the test period. In addition the upstream pressure is logged where available. Acceptable pressure variation can be specified in the user interface. During a test run, the operator can stop the test manually or the application can be configured to automatically stop it when the needed data are collected. The test results can be approved or rejected by the operator. The test results can be shown as a trend or in tabular form.

– SIL Verification Assistant

The SIL Verification Assistant is a tool to help verify that the SIL (Safety Integrity Level) requirements are being met during operation. It compares assumed failure rates per design with updated failure rates calculated from operational data and indicates if new functional test intervals are recommended. In addition it provides number of demands and number of detected faults registered by the safety and automation system. This functionality significantly reduce time spent in verifying SIL compliance.

Technology

SafetyInsight™ is built on a modern software development platform and architecture. The user interface is a pure web interface, and can run as a standalone reporting system or easily be integrated in plant or enterprise information portals. The reports are typically assembled with other information management applications, and can be adapted to a variety of IT and software infrastructures, plant network architectures and digital security rules.



Project execution

The SafetyInsight™ components are configured for each specific facility, and a typical implementation project includes the following steps:

- Input on IT and system topology drawings, Digital security policies, information management, safety and control system specifications or as-built documentation.
- Retrieval of basic configuration data such as Cause and Effect diagrams or ESD block logic.
- Retrieval of detailed configuration data such as tag-names, valve travel time and event texts.
- Installation and commissioning.
- Operator training.
- Service and support during operation.

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