ABB SafetyInsight™ risk assessment modules
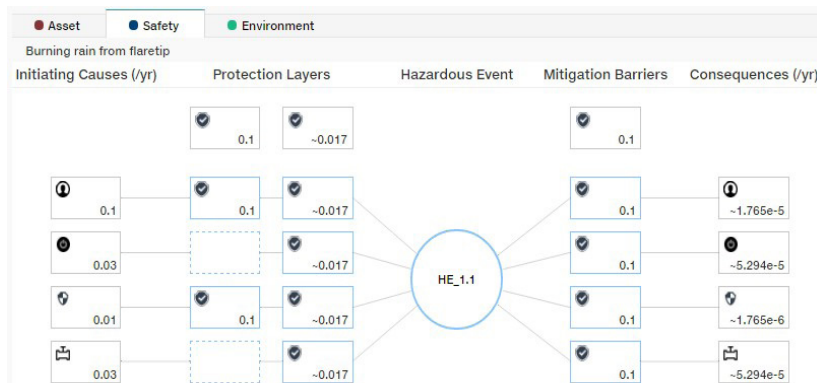## Efficient, intuitive recording and management of hazard identification and risk assessments

ABB SafetyInsight™ risk assessment modules guides' oil, gas and chemical companies through the hazard and risk assessments required by this high hazard industry and keeps these assessments evergreen.

Overview

Companies operating high hazard processes need to be able to answer the following three questions:

- Do we understand what can go wrong?
- Do we know what systems we have to prevent this from happening?
- Do we have information to assure us that these systems are working effectively?

ABB SafetyInsight™ risk assessment modules assists in answering in the first two of these questions through the identification of Major Accident Hazards (MAHs) using methodologies such as Hazard and Operability studies (HAZOP)*, Process Hazard Review (PHR)* and then performing Risk Assessments as part of the Safety Integrity Level (SIL) determination assessments using Layer of Protection Analysis (LOPA) and Fault Tree Analysis (FTA) methodologies.

The applications provide an intuitive and structure approach to the assessment through the use of user friendly wizards.

The use of bow-tie style visualization helps ensure engagement and clear understanding for the full review team. When combined with the other modules within ABB SafetyInsight™ our customers can have the assurance that all three questions are suitably addressed.

Benefits
- Ensures team engagement through intuitive and structured wizards that guides the team through each assessment, along with bow-tie representation of each MAH
- Reduces study time through efficient, intuitive and structured approach to documenting each MAH
- Reduces engineering effort required when transitioning between the different lifecycle phases i.e. Hazard Identification, LOPA, SRS, SIF Design
- Ensures compliance with IEC 61508 (Ed. 2.0) and IEC 61511 (Ed. 2.0) for the hazard and risk assessment phases
- Provides an audit trail that allows for each MAH to be managed throughout safety life cycle
- Provides a digital platform to enable connectivity that significantly reduces the costs to implement supporting operation and maintenance applications to ensure protection layers remain effective (answer question 3)
- Streamlines the effort required to perform the period revalidation of the basis of safety.
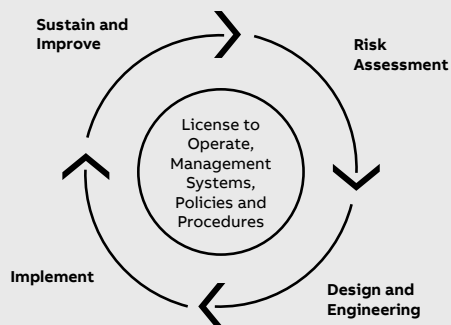
Features

- Provides an evergreen list of all MAHs, with summary if the necessary risk levels are achieved, along with the SIL requirement for any related SIF
- The search and filters enables the user to easily identify and review MAHs associated with particular plant / areas / items of equipment
- Use of categories and smart tags to identify where independent protection layers have been assigned to multiple MAHs
- Auto-calculation SIF demand rate through the definition of pre-SIF independent protection layers
- Provides traceable justification for the key assumptions derived in establishing a 'thorough and sufficient' risk assessment

ABB Safety Life Cycle Management

Sustain and Improve — Risk Assessment — Design and Engineering — Implement

License to Operate, Management Systems, Policies and Procedures

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Above: ABB SafetyInsight™ are the intelligent applications associated with ABB Safety Lifecycle Management solution.

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* Available in 2018
** Industrial Internet of Things

Part of ABB Safety Life Cycle Management
ABB Safety Lifecycle management provides intelligent applications, services and technology to ensure our customers can manage the risks associated with operating high hazard processes. ABB SafetyInsight™ are the software applications within ABB Safety Lifecycle Management. Other related ABB SafetyInsight™ application include:

Design and engineering (SIF designer):

- Intuitive, graphical interface facilitates the specification and design of Safety Instrumented Systems (SIS) to IEC 61511 and IEC 61508 standards using a comprehensive set of instrument reliability data
- Multiple testing options help meet the required risk reduction / probability of failure on demand (PFDavg), allowing selection of the optimum SIF design and testing regime, minimizing the maintenance burden and the impact on operations

Sustain and improve:
- Demand reporting:
  - Automatic independent verification of events associated with a trip, which enables quicker startup
  - Provides evidence of successful operation, which can reduce maintenance burden and shorten Turn-Arounds (TARs)

- Collation of demand data to validate risk assess assumptions and identify opportunities to reduce demands on safety systems
- Bypass management: enables safe management of the bypassing of safety-related devices
- Instrument reliability: automatically captures actual instrumentation and equipment reliability data, including independent verification of all valve operation and collation of data from Computerized Maintenance Management Systems (CMMSs) such as SAP

The risk assessment and SIF designer modules are the next generation of ABB's Trip Requirements and Availability Calculator (TRAC), which has been used in the process industry since 2002. Integration of these engineering tools with ABB SafetyInsight™ sustain and improve modules provides the digital platform to enable the use of the engineering data to contextualize the vast amount of data being generated by Industrie 4.0 / IIoT**. These Actionable Insights provide decision support to operation and maintenance staff, to help ensure safety systems remain effective and provide the means to efficiently 'close the loop' to optimize the cost of safety.

Why choose ABB?
- ABB's is a world leader in providing process safety services and our operational heritage allows us to understand the practicalities of operational environments so we can offer pragmatic solutions
- ABB provides you with applications and services that support a full safety life cycle management approach, with a focus on operation and maintenance activities that reduce costs
- ABB has more than 20 global, in-country, TÜV-certified safety execution centers - more than any other company in the industry
- SIL 3 capable systems, processes and competency assurance for SIS

Intelligent services and support
- Process and functional safety benchmarks, assessments and audits
- Hazard identification and risk assessment, including SIL determination
- Safety requirement specification development, SIS detailed design and delivery
- Functional safety and alarm design and engineering
- Process and functional safety policies and management systems
- Incident and demand investigation and near miss and learning opportunities
- Impact review following comparison of actual design experience against initial design assumptions
- Wide range of end-user focused training courses that cover awareness level to in-depth technical training
- Corrective and preventative care services for the sustainable operation and maintenance of SIS
- Proven upgrade and evolution services for SIS controller technology platforms

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