

Safety Instrumented Function (SIF) capability review - legacy systems



Do your operating plants and process machinery have Safety Instrumented Systems (SIS) not implemented in accordance with the current IEC functional safety standards?

Have they been developed in a different way to the accepted Industry good practice norms?

A legacy safety system in his context is a safety instrumented system that may not have been implemented in accordance with the current industry safety and security good practice compliance requirements as identified within standards such as IEC 61508, IEC 61511 IEC 62061 and IEC 62443. Here, ABB's experts have the necessary proficiency to investigate the impact of current international safety standards on such 'legacy' systems for continued safe operation.

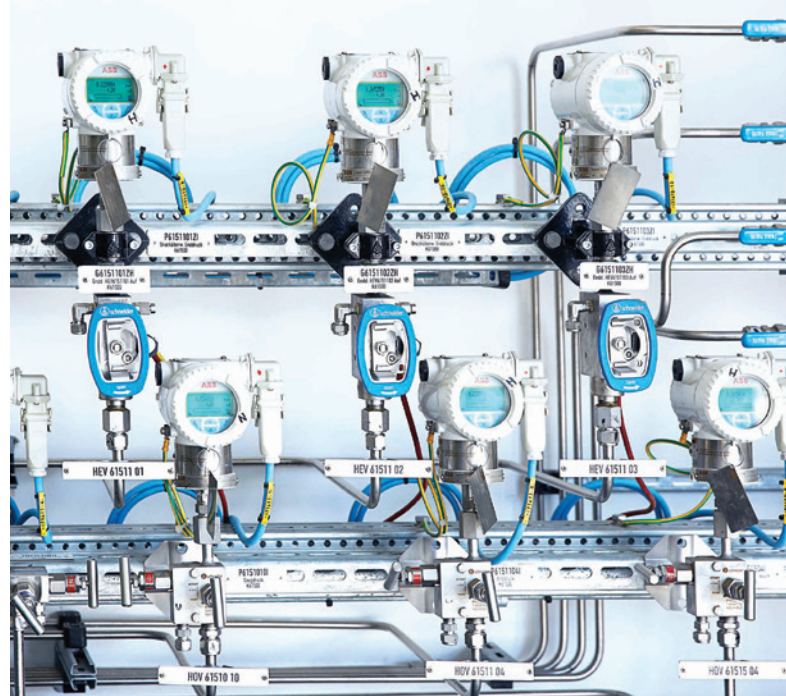
ABB can assess existing any SIFs and transposing the 'as found' information to provide a corresponding level of risk reduction currently being afforded by the SIF. Our in-depth understanding of the principles involved, and experience with practical application, means that we are able to offer a SIF capability review to determine what equivalent Safety Integrity Level (SIL) is being afforded by the current design architecture and applied proof testing.

What we offer

Historically, the way in which safety instrumented systems have been applied has varied across industry. To address this issue, ABB, has therefore developed a process of 'base-lining' for what it is reasonable and practicable to expect of such legacy SIFs.

The areas of particular interest focus on the difficulty of comparison of older systems against the requirements of the current safety standards, and practical steps which can be taken towards compliance.

A SIF capability review allows owners and operators of older systems to know exactly where they stand in relation to current accepted good practice, and provides a clear direction for actions required to become compliant. ABB's approach compares the installed SIFs against the transposed equivalent SIL in terms of architectural constraints, PFDavg failure rates, safe failure fraction and systematic capabilities to allow a focused approach to improvements, and highlights which areas for change should be addressed as priorities whilst moving progressively to compliance with the standards.



The SIF capability review is a structured approach that makes use of existing functional safety documentation for the SIFs under review, and the current arrangements for proof testing. A short site review programme is planned in advance so that evidence is collated and optimal use is made of the time of key client staff.

The capability review approach starts with review of the design architecture, redundancy, proof testing and supporting data sets for all 'end to end' instrumentation used within the SIF under review. This is followed by comparison of the existing arrangements expressed as an equivalent SIL with industry-consensus practical steps, to yield a report specifying any necessary observations and improvements.

Benefits

- ABB offers its clients an extensive knowledge of SIS, the legislation concerned, the regulatory perspective and also the standards / criteria against which a company / system will be measured
- Your current SIFs can be transposed into SILs to both support justification for existing arrangements, and help devise a practical improvement plan, selecting the most cost-effective solutions for improvement and alignment to the safety standards
- Demonstration that action is being taken shows the pro-active attitude which is expected by the authorities, public and workforce, and supports company risk management arguments

- Knowing in advance the changes that will have to be made aids planning and avoids 'surprises' regarding the ongoing sustainability of the operation

The SIF capability review approach means that the areas in most need of improvement are highlighted, whilst in some cases, the demands on resources for proof testing may be relaxed.

Why ABB?

Where improvements are felt to be appropriate, ABB's services support the entire safety lifecycle, providing safety requirements assessments, development of Functional Safety Management (FSM) systems, design and procurement of new systems, safety lifecycle support tools and training for your key staff.