VIRTUAL TRAINING COURSE

IEC 61511 SIL Determination
A practical training course in the appreciation of SIL Determination to the technical requirements of IEC 61511.

18th-19th May 2021 - Virtual Classroom
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Industry today relies upon safety systems to maintain and protect operating assets. Businesses seek to maintain operating effectiveness and reduce spurious trips whilst achieving a safety target appropriate to the circumstances. Fundamental to this process is the determination and implementation of the safety requirements for the safety system. From the IEC 61511 standards, the Safety Integrity Level (SIL) is fundamental in ensuring a safety related system satisfactorily performs the required safety functions under all stated conditions within a defined time period.

It is an assessment of the risk reduction required to give a tolerable level of risk. Inappropriate SIL determination can affect the safety integrity of the asset protection envelope and may in some cases place the asset integrity under threat. In addition to this, unnecessary spend in capital and operational budgets can be incurred. In contrast, properly defined SILs allow for significant cost improvements to be achieved in both Greenfield and Brownfield operating environments. Asset operational effectiveness is ensured by periodic testing of safety instrumented functions to maintain SIL performance and optimise the cost of ownership.

Price
Member of IChemE - £1160 + VAT
Non-Member - £1220 + VAT

Choose to attend the course in person, or on-line via the streamed virtual classroom.

Benefits
The course will be of benefit to all managers and engineers with a responsibility for the management and technical requirements of safety, health and environmental protective programmes.

The course
On completion of the course, you should be able to:

- Understand the concepts of SIL determination and the principles of IEC 61511
- Explain the key terms and concepts which underpin a systematic consideration process for safety and protective systems in respect to SIL
- Understand the importance of SIL Determination
- Determine where present practice is in line with the requirements of these standards and identify where improvements are necessary
- Implement the SIL Determination methodology

Duration
2 days
Course structure and content
- A two-day technical course aimed at responsible managers and engineers
- Introduction to the standards and their background
- Scope and applicability
- Functional safety and IEC 61511 interpretation
- IEC 61511 basic principles refresher
- The concept and importance of SIL determination
- Risk concepts and criteria, risk aversion, tolerability including an exercise
- Hazard identification, assessing frequency and consequence, modification list including an example
- Risk graph approach with practical exercises
- LOPA use with exercise examples
- Fault trees and demand trees using further practical exercises
- The impact of humans in the equation and sources of fault tree data
- Dependency demands, layers etc. including a short exercise
- The ‘pros and cons’ of the differing approaches to SIL determination
- Introduction to the CASS scheme

Course leader
Rachel Spoonley is a Principal Safety Consultant, who has a degree in Chemical Engineering with over 30 years' experience in a variety of roles in the process industries. She has worked in design and operations for a range of industries from continuous bulk chemical and batch chemical manufacture, to utilities and effluent treatment. Rachel has been a HAZOP and LOPA leader in chemicals, oil and gas and the power sector for over ten years.

Agenda
Overview of IEC 61511
Key terms and concepts
Risk and criteria
Introduction to demand trees and fault trees
Equipment failure and data
Human error
Dependency
Hazard identification
Risk graph and other tools
Comparison of SIL Determination tools
The CASS scheme and future issues
Review and feedback

ABB reserve the right to amend the course agenda.

How to book
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