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## **A Practical Introduction to Functional Safety**

### **IEC 61508 and IEC 61511 Training (1.5 days)**

This training course provides an introduction to IEC 61508 and IEC 61511 to cover the basic principles of the full lifecycle care for Safety Instrumented Systems (SIS). It covers the legal status, risk assessment, design principles and the development of testing and maintenance strategies. Understanding is reinforced by syndicate work based on practical exercises from the real world of the manufacturing process.

Here are some of the questions that we intend to answer during the course:

#### **Justification**

- How does a functional safety review identify OpEx and CapEx savings?
- Will the implementation be difficult?
- Will trying to comply simply open a can of worms?
- Will compliance mean re-engineering?
- Will compliance mean more testing and maintenance?

#### **Risk Assessment**

- Should I adopt quantitative methods of risk assessment as my site standard or would I be better advised to use qualitative methods?
- Is the accuracy of the reliability data for my equipment the biggest source of error in a quantitative approach?
- How do I demonstrate that my risk has been reduced to “as low as reasonably practicable” (ALARP)?

#### **Design Considerations**

- Which is safer? 1oo1, 2oo2 or 2oo3?
- Why not go for the highest SIL that I can obtain?
- If all my components are SIL 2 certified, why did I not meet SIL 2?
- Why can't I use the DCS or SCADA system to implement 61508?
- What is the difference between testing and maintenance?
- Can too much testing lead to less safety?
- Should I consider partial valve closure tests?