

exida Can Show you the Way



Training Course: LOPA / SIL

Selection of the Safety Integrity Level (SIL) for a Safety Instrumented System (SIS) is a risk assessment problem that requires understanding of the hazard. This procedure involves establishing tolerable risk guidelines and determining the risk posed by the process prior to implementing an SIS. Several methods are currently being used in industry to perform these tasks. This course describes the basic risk assessment tasks that must be performed to select an SIL, explains tolerable risk criteria and gives examples of targets that are currently being used in industry, presents several methods for SIL selection, describes Layer of Protection Analysis (LOPA) in detail, and explains how to use exida's LOPA tool to facilitate the SIL selection process.

Skills You Will Learn:

- ◇ How to assess the risk of a process hazard.
- ◇ How to establish tolerable risk guidelines.
- ◇ How to use common SIL selection methods.
- ◇ How to develop and quantify a simple fault tree.
- ◇ How to perform a Layer of Protection Analysis.
- ◇ How to consider multiple initiating events and outcomes in a LOPA study

Course Topics:

- ◇ Risk assessment overview,
- ◇ SIL selection objectives
- ◇ Rules of probability,
- ◇ probability exercise,
- ◇ Consequence estimation
- ◇ Likelihood estimation,
- ◇ event trees, event tree exercises
- ◇ LOPA diagrams
- ◇ LOPA diagram exercise
- ◇ Obtain and use LOPA data,
- ◇ effectiveness of an operator,
- ◇ Safety Integrity Level selection,
- ◇ SIL exercise,
- ◇ comprehensive LOPA analysis
- ◇ LOPA exercise.

Who Should Attend:

- ◇ Control Engineers
- ◇ Safety Engineers
- ◇ Plant Risk Analysts

Length: 2 Days **Cost:** TBD

COURSE MATERIALS PROVIDED

Learning from the Experts



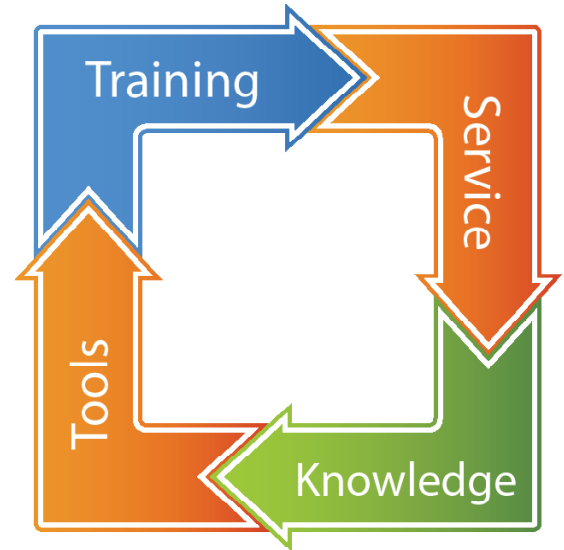
Experience has shown that most companies benefit from training as the first step in implementing a safety program. Having a solid up-front understanding of the Safety Life Cycle, the related standards and requirements for compliance, and the equipment selection and certification options ensures a focused and cost-effective safety initiative. And when you rely on exida for this knowledge, you gain access to some of the world's top experts in functional safety.

exida employees have written the books used for evaluating automation safety and reliability, they helped write the standards used for designing safe and secure systems, and they wrote many of the procedures used to certify the effectiveness of system hardware. They give the lectures and symposia that train industry's top professionals and present the latest developments. And since exida instructors are active safety professionals who participate in standards committees and provide professional safety services, the training reflects the most current and pressing issues.

exida delivers your training flexibly to accommodate your time and budget. Options include training courses delivered at your location, at an exida office, and through computer-based training modules. Example course topics include:

- The IEC 61508 and IEC 61511 Standards
- Hazard and Risk Analysis
- Safety Integrity Level (SIL) Selection
- Functional Safety Life Cycle Management
- CSFE (Certified Functional Safety Expert) preparation

exida also regularly publishes white papers and text books to facilitate learning on key topics, such as the best-selling book Safety Instrumented System Verification and the recently published book Final Elements and the IEC 61508 and 61511 Standards.



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