

COURSE: LOPA / SIL Selection

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

TRAINING

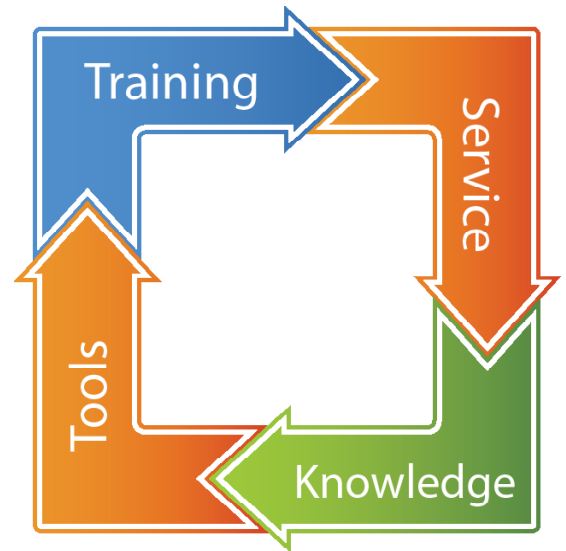


exida is excellence in dependable automation.

The key to our ability to deliver the cutting edge and influential knowledge is our staff of world class experts. The staff of exida have pioneered the tools and procedures used around the world for the design, maintenance, installation, and operation of safety instrumented systems. We have written the textbooks that are used for teaching automation reliability. We helped write the standards that the world uses for designing safe automation systems. We wrote the procedures that certification agencies use to verify the effectiveness of safety system hardware. We developed the procedures that industry uses to select automation that is both safe and cost effective. We give the lectures and symposia that train the industry's top professionals and present the latest developments. Nowhere else can you find the level of knowledge, expertise, and experience possessed by exida.

exida is able to provide a greater value than traditional consulting firms because of our sophisticated communication and delivery. In addition to traditional consulting, exida has leveraged the power of the internet to make knowledge transfer and sharing faster and more effective. Our internet virtual community contains resources and access to the world's leading authorities on safety and highly available automation. Our knowledge is also available in on-line expert system applications that are hosted at our web site, so you are not required to install and maintain them. exida ensures that the information is current, correct, and available.

We are independent, yet tightly integrated with safety instrumented systems vendors. We are financially independent and neutral so that we are able to provide an objective third party evaluation. We also act as partners in their design processes and in some cases act as partners in the delivery of safety life cycle services for complete turn-key solutions. This duality allows us to offer the best of both worlds to the end user.



Automation Users

- Safety Function Identification
- Hazard/Risk Analysis
- Safety Integrity Level Selection / Tools
- Safety Integrity Level Verification / Tools
- Conceptual SIS Design
- Detailed SIS Design
- Pre-Startup Safety Review
- Operation & Maintenance Procedures
- Function Testing Market Analysis

Automation Vendors

- Market Analysis
- Requirements Tracking
- Product Certification
- Cyber Security Certification
- Industry Partner Program
- Brand Labeled Service

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