

exida Can Show you the Way



Training Course: *Functional Safety Engineering I*

This course provides an overview of process industry safety engineering from the point of view of the Risk Analyst and Process Safety Coordinator. The first half of the safety lifecycle will be explained, as well as reviewing analysis, requirements creation and management, Safety Integrity Level (SIL) determination, Layer of Protection Analysis (LOPA), and consequence analysis. The course sequence of Functional Safety Engineering I & II is designed as a broad review in preparation for the Certified Functional Safety Expert (CFSE) and Certified Functional Safety Professional (CFSP) process industry application engineering exams.

Skills You Will Learn:

- Develop a thorough understanding of the Safety Lifecycle requirements as defined by IEC 61511 & ANSI/ISA S84.01
- Develop an understanding of risk analysis techniques
- Develop an understanding of layer of protection analysis (LOPA) and SIL determination techniques

Course Topics:

- Overview of safety engineering
- Overview of the safety lifecycle
- Hazard analysis
- Risk analysis techniques
- Consequence analysis
- Probability
- Layer of Protection Analysis (LOPA)
- Risk mitigation techniques
- SIL selection techniques
- Requirement analysis
- Requirements documentation

Suggested Reference Textbooks:

Certified Functional Safety Expert / Professional (CFSE / CFSP) Study Guide

Practical SIL Target Selection - Risk Analysis per the IEC 61511 Safety Lifecycle

Safety Instrumented Systems Verification - Practical Probabilistic Calculations

Who Should Attend:

- CFSE and CFSP application exam candidates who want a good review
- Loss prevention professionals
- Process safety coordinators
- Plant risk analysts
- Control engineers and their management

Course Length: 2 Days

****This course is presented as Part I of a 4-day training, along with Functional Safety Engineering II. This course will take place on Days 1 & 2, while Functional Safety Engineering II will take place on Days 3 & 4.**

Learning from the Experts

Experience has shown that most companies benefit from training as the first step in implementing a safety, security, or alarm management program. Having a solid understanding of the relevant industry standards, requirements for compliance, and best practices (tools and techniques) ensures a focused and cost-effective initiative. Led by industry experts, exida offers a number of training options that can be modified to help meet the specific needs of your company. Whether your interests lie with Functional Safety, Control System Cyber Security, or Alarm Management, exida has the experience and expertise to ensure an informative and rewarding training program.

About exida Training:

Functional Safety

exida offers overview courses on both the IEC 61508 and IEC 61511 standards focused on understanding what they mean and how to comply with them. Along with overview courses, exida also offers more in-depth training options that provide hands-on access to exSILentia, exida's own SIL Selection and SIL Verification tool. With various options available, exida can offer modifications to the training options that will be suit your company's needs at the present time.

Control System Cyber Security

Cyber security has quickly become a serious issue for professionals in the process and critical infrastructure industries. An unprecedented number of security vulnerabilities have been exposed in industrial control products and regulatory agencies are demanding compliance to complex and confusing regulations. There are well established strategies and techniques that automation professionals can employ to discover and mitigate security vulnerabilities and improve the inherent security of their products and systems. Learning and adopting these strategies will help companies stay ahead of potential vulnerabilities. exida offers both basic and in-depth training options that will provide you with the information and skills necessary to help your organization implement and maintain secure control systems.

Alarm Management

exida's Alarm Management practices and principles training discusses industry best practices for alarm management including and educates key personnel about how their roles & responsibilities could be affected by complying with the ISA-18.2 standard. Creating an effective, sustainable alarm management program that delivers quantifiable benefits and complies with industry standards and guidelines is a key aspect of our training. Participants are prepared to support a facility alarm management program including the creation of an alarm philosophy document, alarm rationalization, analyzing alarm system performance, alarm system maintenance, and resolution of alarm management issues. Also available is an in-depth training on SILAlarm, exida's own alarm rationalization tool, which is used to guide the participants through the rationalization process and capture the results.

These various exida training programs have been designed to help accommodate your time and budget. Options include training courses delivered in various cities around the globe, your office location, an exida office, or through computer-based training modules.

exida also regularly publishes white papers and textbooks to facilitate learning on key topics, including our recently published book [Practical SIL Target Selection - Risk Analysis per the IEC 61511 Safety Lifecycle](#).

Stay tuned for new exida authored books to be released in 2013.

