

exida Can Show you the Way



Training Course: Safety System Design Issues

This course is intended for those who are directly involved in the preparation of detailed design specifications, detailed engineering, integration, and maintenance of Safety Instrumented Systems. It focuses on the issues, problems, and solutions in designing and maintaining SIS to comply with the requirements of ANSI/ISA S84.01 and IEC 61511. Most of the course is taught by reviewing and analyzing specific examples drawn from process industries.

Skills You Will Learn:

- ◇ Basic reliability concepts as applied to Safety Systems
- ◇ Design and installation requirements to satisfy ANSI/ISA S84.01 and IEC 61511
- ◇ Hardware selection for input, logic solvers, and final elements
- ◇ SIS application software development.
- ◇ How to analyze Safety Instrumented Systems to determine performance metrics

Course Topics:

- ◇ Probability, Statistics,
- ◇ Reliability Concepts,
- ◇ Fundamentals of failure,
- ◇ failure rate analysis,
- ◇ Block diagrams,
- ◇ Fault tree analysis,
- ◇ voting, redundancy,
- ◇ SIS performance equations and calculations.
- ◇ Review of ANSI/ISA S84.01 and IEC 61511 with respect to design and installation issues.
- ◇ Review of SIS devices and equipment available from various suppliers.
- ◇ Selection of input, logic solver, final elements, and overall system architecture.
- ◇ SIS application software –Requirements, design, development, and testing.
- ◇ SIS design principles, documentation, installation, commissioning, startup, and maintenance.

Who Should Attend:

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

Length: 2 Days **Cost:** TBD

COURSE MATERIALS PROVIDED

Learning from the Experts



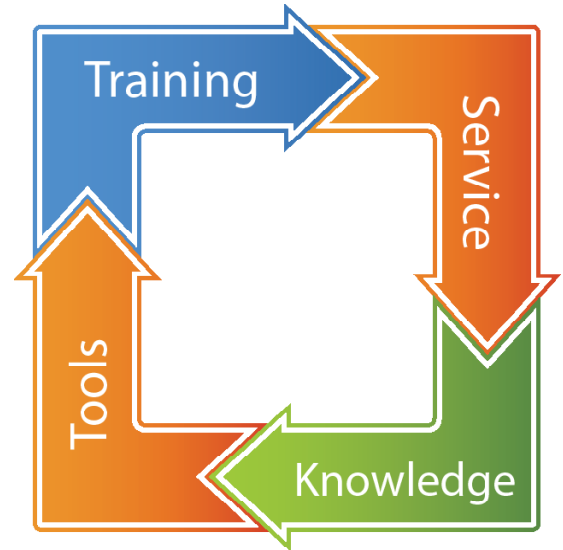
Experience has shown that most companies benefit from training as the first step in implementing a safety program. Having a solid up-front understanding of the Safety Life Cycle, the related standards and requirements for compliance, and the equipment selection and certification options ensures a focused 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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