

Safety Instrumented Systems Engineering

Part 2—Conceptual Design Evaluation

Conceptual Design, SIL Verification, Maintenance and Testing

Kenexis provides the users of Safety Instrumented Systems (SIS) with training required to cost-effectively implement systems that are highly reliable, easy to use, and ideally suited for their applications. This course presents core principals of Safety Instrumented Systems Engineering and is taught by engineers who have years of practical experience in the design of safety systems. Part 2 spans two days and covers the second half of the Safety Lifecycle. Key topics include working with failure data, performing reliability calculations to determine SIL achieved, incorporating the effect of diagnostics, understanding the relationship between testing and SIL, and reviewing safety equipment technology and architectures.



Verify the suitability of your design

Practical Skills Taught in Part 2

- Utilizing instrument failure statistics to characterize safety performance
- Applying fundamental statistics, probability, and reliability engineering to SIS design verification
- Perform SIL verification calculations with multiple techniques and tools
- Considering common cause failures, diagnostics, test intervals in SIL Verification
- Selecting appropriate equipment and architectures

KENEXIS

Our Advantage

Kenexis is an engineering and consulting firm specializing in the application of engineering safeguards, such as safety instrumented systems, to the process industries. Our years of experience give us unparalleled insight into specifying and verifying the safety requirements of a wide range of processes.

Safety Instrumented Systems Engineering – Part 2 includes the following topics:

- ✓ Section 1 Introduction—Example Problem
- ✓ Section 2 Working with Failure Statistics
- ✓ Section 3 Basic Reliability Engineering
- ✓ Section 4 Calculating Probability of Failure on Demand (SIL)
- ✓ Section 5 Advanced Failure Rate Analysis (FMEDA, Confidence Intervals)
- ✓ Section 6 Fault Tolerant Architectures
- ✓ Section 7 Effects of Maintenance and Testing
- ✓ Section 8 Equipment Selection and Installation Considerations

Who Should Attend?

- Control Systems Engineers
- Process Safety Professionals
- Process Hazards Analysis Leaders
- Engineering Management

Basic Part 2 Course: 2 Days

Course Materials and CD Containing Software Utilized During Course Provided

Kenexis courses are designed to instruct on the entire work process for engineering Safety Instrumented Systems, from conceptual design through detailed specifications. In this way, we can ensure that the needs of the end user can be met, while achieving the greatest value for automation expenditures.

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