



SIL SOLVER - ON-LINE COURSE

Audience: Process Safety, Process Engineering, Operations, and Instrumentation and Electrical
Time: 8:00am to 11:00am - two mornings
CEUs: 0.75

Overview

This course concerns the application of SIL Solver software to verification of the safety integrity level (SIL) of safety instrumented functions (SIFs). The course is divided into 2 parts and is taught over the web. Part 1 is instructional and is supported by lecture material sent in advance to course participants. The lecture provides an overview of software use, discusses software constraints and assumptions, and explains how to use advanced features that make the calculations more efficient. Key topics are as follows:

1. Identifying the required SIF functionality
2. Basic and Advanced SIL Solver features
3. Data sheets and Selection
4. Variables affecting SIL
 - a. Fail Dangerous/Fail Safe Failure Rate
 - b. Voting
 - c. Testing Interval
 - d. Mean Time to Repair
 - e. Diagnostic Coverage
 - f. Common Cause Factor

At the end of Part 1, course attendees will receive a series of cases which they are required to execute as a homework assignment. The cases allow the attendee to practice what was discussed during the lecture using examples from real-world applications. In Part 2 of the course, the course instructor will review the cases with the attendees and explain how the cases should be modeled and what the results mean from a design and maintenance standpoint.

Objective

The course participants will gain an understanding of the following:

- o How to define of a safety instrumented function.
- o How SIL Solver executes the calculation.
- o How to navigate in SIL Solver.
- o Where the SIL Solver data comes from.
- o How to build your own data sheets.
- o How to backup your data sheets.
- o How basic safety instrumented function are modeled using SIL Solver.
- o How complex safety instrumented functions are modeled using SIL Solver.
- o How changes to the safety instrumented function design, operation, and maintenance affect the target SIL, reliability, and maintainability.