INSTITUTE of HAZARD PREVENTION

SIL VERIFICATION WORKSHOP
PART 2 OF SIL COURSE SERIES

PLEASE ALSO SEE PART 1: SIL DETERMINATION / LOPA WORKSHOP

PROFESSIONAL DEVELOPMENT:

Two classroom days providing 1.6 CEU (Continuing Education Units) or 16 PDH (Professional Development Hours)

BENEFITS OF THE SIL VERIFICATION COURSE:

- Using case studies and real examples participants will be able to apply the IEC standard 61511 that supports the development of SIS.
- Enable participants to demonstrate how to conceptually design Safety Instrumented Functions.
- A comprehensive workbook and reference guide will be supplied.

COURSE OVERVIEW:

This course is designed to provide participants with the tools necessary to perform SIL Validation studies compliant with the IEC 61511 standard. The practical course uses real life examples to demonstrate to students how to conceptually design multiple Safety Instrumented Functions (SIFs) to meet the specified safety integrity levels.

Note: The SIL Verification course maybe be taking in conjunction with the SIL Determination / LOPA Workshop to gain a more thorough understanding of the Safety Lifecycle process.

LEARNING OUTCOMES:

- The fundamentals of safety instrumented systems (SIS) using the IEC 61511 standard.
- Learn how the key elements such as safety requirements specification impact the engineering of SIS.
- The fundamentals of Safety Instrumented Functions (SIF) to meet the specified safety integrity levels.

PREREQUISITES OR RELATED COURSES:

Participants have some understanding of critical protection systems. Participants are **REQUIRED** to have completed part 1 SIL Determination/LOPA Course.

WHO SHOULD ATTEND?

This course teaches Functional Safety Engineering fundamentals to engineers and technologists responsible for designing Safety Instrumented Systems, including:

- I&C Team Leaders, engineers and technologists
- High Integrity and Critical Control System specialists
- Supervisors, managers and engineers responsible for ensuring that SIS have been designed to appropriately mitigate the level of risk specified
- Engineers involved in any aspect of the SIS Safety Lifecycle

COURSE OUTLINE:

The course is comprised of two days of combined classroom instruction and problem solving exercises. In addition to expert instruction from an experienced SIS Engineer, you will also form a study team with other participants to work on case studies. Each team will then present their findings to the class and the ACM instructor will provide feedback. Safeguard Profiler™ software is used throughout the workshop to conceptually design and evaluate SIF loops, document the SIL studies and produce typical SIL reports.

The course focuses on Phase 4 (SIS Design & Engineering) of the SIS Lifecycle within the IEC 61511 standard, but incorporates key elements of Phase 3 (Safety Requirements Specification of the SIS) and Phase 5 (SIS Installation, Commissioning & Validation).

DAY 1	DAY 2
Safety Requirements Specification of the SIS	SIS Engineering Workshop (continued)
SIS Design & Engineering	
SIS Installation, Commissioning & Validation	
SIS Engineering Workshop	

THE ACM EXPERIENCE:

Our courses and workshops are experiential, interactive and provide participants with practical knowledge and tools that can be immediately applied back at work.

COURSE TESTIMONIALS:

Here are a few quotes from over 3,300 participants we've trained;

- *"Very helpful instruction and activities in this course helped me get what I was looking for from it!"*
  Project Coordinator
- *"The instructor was very interactive, encouraged discussion and welcomed feedback."*
  Process Engineer
- *"Great course! The instructor made the course very enjoyable. With their wealth of knowledge and experience they could answer all of the questions, as well as provide a real life situation in which it applied."*
  New Grad EIT
- *"Great course content, coverage and length. Superb instructor who presented material as it applies to real world scenarios."*
  I&C Engineer

COURSE INSTRUCTORS:

Guillermo Pacanins

B.Sc. Elec. Eng., P. Eng., TÜV (Rheinland) F.S. Senior Expert / Instructor

Mr. Guillermo Pacanins is an Electrical Engineer with over 27 years of experience with knowledge in Process Controls and Functional Safety in the process industry. He has taught several courses in Process Automation to some of the largest companies in the world. With Mr. Guillermo's excellent communication and leadership skills, combined with his in-depth understanding of Process Safety Engineering makes him a successful functional safety analyst/educator. Guillermo is a TÜV Functional Safety Senior Expert and teaches several functional safety workshops globally for ACM. Also, Guillermo has a Process Safety Practice Certificate from Texas A&M University, Mary Kay O'Connor Center for Process Safety.

Jamie Merriam

B.Sc. Elec. Eng., P. Eng., TÜV (Rheinland) F.S. Eng. Functional Safety Engineer / TÜV (Rheinland) PH & RA Functional Safety Engineer / Instructor

Mr. Jamie Merriam is an Electrical Engineer (automation) with over 24 years of experience in the energy industry. His experience includes construction, maintenance and project engineering. Mr. Merriam began leading Hazop/LOPA reviews in 2002 as part of his duties with Suncor. Now with ACM, Mr Merriam continues to support Suncor, Cenovus and other clients execute effective hazard analysis. He has applied knowledge in Instrumentation, Process Control and Functional Safety for the energy industry. Mr. Merriam's communication and leadership skills, combined with his understanding of Process Safety make him an effective and competent facilitator and educator. Mr. Merriam is a professional engineer and TÜV Functional Safety Engineer.

Past Projects: Terra Nova FPSO, Edm. Refinery Upgrade, Fort Hills, MR2 (Petro Canada), Firebag 3, Tailings Reduction Operations, Coker Upgrade (Suncor)

View instructor profiles online.

CONTACT FOR FURTHER INFORMATION: info@acm.ca
CALL TOLL FREE AT 1-877-264-9637

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