INSTITUTE of HAZARD PREVENTION

LOPA WORKSHOP
PART 1 OF SIL COURSE SERIES

PLEASE ALSO SEE PART 2: SIL VERIFICATION

PROFESSIONAL DEVELOPMENT:

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

BENEFITS OF THE LOPA WORKSHOP:

- To provide individuals with the necessary knowledge and skills to effectively participate in SIL determination / LOPA risk assessments.
- How LOPA and HAZOP are interrelated to provide the necessary identification of risk and the layers of protection (safeguards) that ensure that the identified risk can be reduced to acceptable limits.
- A comprehensive workbook and reference guide will be supplied.

COURSE OVERVIEW:

This course is designed to deliver expert instruction on how to successfully plan and execute Safety Integrity Level (SIL) Determination studies efficiently, effectively and in accordance with the IEC 61511 standard. This includes understanding the principles behind two of the most commonly used SIL Determination methods (Layer of Protection Analysis and Calibrated Risk), and learning how to avoid common pitfalls and traps so your studies run smoothly.

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

LEARNING OUTCOMES:

Where does LOPA fit into the safety lifecycle of the facility and create clarify regarding SIL determination. Learn about the most common SIL determination methodologies.

PREREQUISITES OR RELATED COURSES:

Participants should understand the process of executing a HAZOP study and be familiar with typical HAZOP reports. Participants should have some understanding of critical protection systems.

WHO SHOULD ATTEND?

This course teaches all the requirements to prepare team leaders to facilitate and document SIL Determination studies, including:

- Risk Assessment specialists
- SIL / PHA / HAZOP team leaders & scribes
- Process Safety Management (PSM) / Loss Management specialists
- Supervisors, managers and engineers responsible for SIL studies

- Project managers who need to understand the concepts and principles of IEC 61508 & 61511
- Engineers involved in any aspect of the SIS Safety Lifecycle

COURSE OUTLINE:

The course is comprised of two days of combined classroom instruction and workshop exercises. In addition to expert instruction from an experienced, professional SIL Determination facilitator, you will also form a study team with other participants and take turns leading the team through “practice” SIL Determination studies. The instructor will coach you and provide feedback on your performance. SafeGuard Profiler™ software is used throughout the workshop to demonstrate the SIL methods, document the SIL studies and produce typical SIL Determination reports.

The course follows the first two phases of the SIS Lifecycle within the IEC 61511 standard.

DAY 1	DAY 2
Background to SIL Determination	SIL Practices
SIL Determination Methods	SIL Determination Workshop • Calibrated Risk Graph • Layer of Protection Analysis (LOPA) • Safety Layer Matrix
SIL Determination Method Selection Criteria	
SIL Documentation Issues	
SIL Teams	

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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