

INTRO TO SIL / FUNCTIONAL SAFETY

(Part 1 of SIL Workshop Series. Please also see Part 2: SIL Determination Workshop)

	Course #	Course Name	Location	Date
2011	011-403	SIL INTRO-FS	Calgary, AB	Jan 10
	011-413	SIL INTRO-FS	San Diego, CA	Feb 7
	011-423	SIL INTRO-FS	Calgary, AB	Mar 7
	011-433	SIL INTRO-FS	San Diego, CA	April 11
	011-443	SIL INTRO-FS	Calgary, AB	May 9
	011-453	SIL INTRO-FS	San Diego, CA	June 13
	011-463	SIL INTRO-FS	Calgary, AB	July 11
	011-473	SIL INTRO-FS	San Diego, CA	Aug 8
	011-483	SIL INTRO-FS	Calgary, AB	Sept 19
	011-493	SIL INTRO-FS	San Diego, CA	Oct 10
	012-403	SIL INTRO-FS	Calgary, AB	Nov 14
	012-413	SIL INTRO-FS	San Diego, CA	Dec 12

Course Fee: \$625 CDN per student

The course fee includes registration, lunch and refreshments, and course materials. Price is exclusive of applicable taxes. Courses held in the U.S are billed in U.S. dollars.

INTRO TO SIL – FUNCTIONAL SAFETY COURSE OBJECTIVE

This 1-day course is designed for individuals who want to pick-up an overview of SIL Analysis, including applicable international standards, the “business case”, the steps involved, and real life case studies of how leading organizations are using SIL Analysis to improve facility uptime and profits. This course also covers the principles behind the most common SIL Determination methods (LOPA, Risk Graph, and Safety Layer Matrix) and provides an overview of the various steps in the Safety Lifecycle.

WHO SHOULD ATTEND THE SIL OVERVIEW COURSE?

This course will benefit anyone seeking to gain a practical introduction to the field of Safety Integrity Level (SIL) Analysis including:

- ◆ Vice Presidents, Directors and Managers from Operating Companies and EPCs entrusted with ensuring their firms comply with both internal and legislative standards
- ◆ Engineers and technicians responsible for ensuring that SIS have been properly designed
- ◆ Project Managers who need to understand the concepts and principles of IEC 61508 & 61511
- ◆ Engineers and operators involved in any aspect of the SIS Safety Lifecycle
- ◆ Operations and Maintenance personnel looking to familiarize themselves with SIL methodologies

SIL OVERVIEW COURSE INSTRUCTORS

Malcolm Harrison, B.Sc. Mech. Eng., P.Eng., TÜV F. S. Expert

Mr. Harrison is a P. Eng. with over 38 years experience in Instrumentation and Controls. Malcolm spent over 35 years with Shell and has diversified upstream and midstream experience in the heavy oil, offshore, refining and gas processing sectors. He is an experienced SIL Determination facilitator and has worked on billion dollar projects ensuring horizontal I & C alignment between multiple EPCMs.

Malcolm is a TÜV Functional Safety Expert and leads training workshops globally for ACM.

Ken Bingham, CET, TÜV F. S. Expert

Mr. Bingham is the Principal of ACM Facility Safety and a TÜV certified Functional Safety Expert. His background is in engineering design and management, involving safety, instrumentation, electrical and control systems. With Ken’s 27 years on the client side, integration side and the SIL consulting side, he brings a holistic and practical perspective. Mr. Bingham has participated on ISA S84 SIL standard committees, has presented numerous papers and courses on SIL Analysis and is the Chief Technical Architect for ACM’s field proven, IEC 61511 compliant Safety Integrity Level (SIL) Life Cycle tool, SilCore™.

SIL OVERVIEW COURSE AGENDA

The course uses the framework of the SIS Lifecycle within the IEC 61511 *Functional Safety – Safety Instrumented Systems for the Process Industry Sector* standard, as it is evolving into the primary standard for the process industry.

Topics covered during the 1-day session include:

- ◆ Introduction to Safety Instrumented Systems & the Safety Lifecycle
- ◆ Overview of IEC 61511 and other applicable standards
- ◆ The “Business Case” for SIL Analysis
- ◆ Hazard and Risk Analysis
- ◆ Allocating Safety Functions to Protection Layers
- ◆ SIL Determination Calculations using LOPA, Risk Graph, and Fault Tree Analysis
- ◆ Safety Requirements Specification
- ◆ SIS Design and Engineering
- ◆ Installation, Commissioning & Validation
- ◆ SIS Operation and Maintenance
- ◆ SIS Modification
- ◆ SIS Decommissioning
- ◆ SIS Verification
- ◆ Assessment & Auditing
- ◆ Safety Lifecycle Structure and Planning

CONTACT ACM TO REGISTER


Registration form available at: www.acm.ab.ca/register

Contact Jacqueline Schmautz for further information at jschmautz@acm.ab.ca

or call toll free at 1-877-264-9637

- *ACM Facility Safety is a recognized global provider of Process Safety training, tools and methodologies*
- *ACM prides itself on neutral, third party unbiased workshop oriented training sessions developed from real life experiences of our instructors*
- *Our instructors have lived and implemented all phases of the IEC 61511 Safety Lifecycle during their careers at some of the world's largest operating companies*
- *Our lead instructors are practitioners with industry experience and are available for private in-house sessions at your facilities*

OUR LEAD INSTRUCTORS

"We developed these courses and workshops based on real life situations"	"Global Expertise"	"Lived all phases of the Safety Lifecycle"
 <p>Malcolm Harrison, B.Sc. Mech. Eng., P.Eng., TÜV F. S. Expert</p> <p>Mr. Harrison is a P. Eng. with over 40 years experience in Instrumentation and Controls. Malcolm spent over 35 years with Shell in the heavy oil, offshore, refining and gas processing sectors. He is an experienced SIL Determination facilitator and has worked on billion dollar projects ensuring horizontal I & C alignment between multiple EPCMs. Malcolm is a TÜV Functional Safety Expert and leads training workshops globally for ACM.</p>	 <p>Marcel Leal-Valias, CET, PHA/PSM Expert</p> <p>Mr. Leal-Valias has 47 years experience in Engineering, Process Design & Drafting, mechanical maintenance, and project management. Mr. Leal-Valias has been a Piping Manager, Construction Site Manager, Project Manager and for the last 20 years, he has developed and become an internationally respected Process Hazards Analysis (PHA/HAZOP) trainer and facilitator performing hundreds of PHA studies for all types of facilities. Mr. Leal-Valias has a broad operational understanding of all exploration, production and refining facets of the oil and gas industry as a result of 45 years spent in international postings in Brazil, Australia, and Canada.</p>	 <p>Ken Bingham, CET, TÜV F. S. Expert</p> <p>Mr. Bingham is the Principal of ACM Facility Safety, Chief Technology Officer and a TÜV certified Functional Safety Expert. His background is in engineering design and management, involving safety, instrumentation, electrical and control systems. With Ken's 27 years on the client side, integration side and the SIL consulting side, he brings a holistic and practical perspective. Mr. Bingham has participated on ISA S84 SIL standard committees, has presented numerous papers and courses on SIL Analysis and is the Chief Technical Architect for ACM's field proven, IEC 61511 compliant Safety Integrity Level (SIL) Life Cycle tool, SilCore™ the only tool in the world that prepares you in real time for loss of safeguards and ACM's MP Real-time risk exposure tool with contingency planning.</p>