

Safety Instrumentation & Emergency Shut-down Systems

Best Practices using IEC 61508 & IEC 61511

24 - 28 Jun 2018, Dubai

16 - 20 Dec 2018, Dubai



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Introduction

Functional process safety involves identifying potential hazardous events that can trigger a chain reaction that could lead to serious or catastrophic consequences. This training seminar explains the requirements of the international standards IEC 61508 and IEC 61511, for functional safety instrumented system and, covers the entire life-cycle of safety instrumented systems, from determining what risk control systems are required through to decommissioning. This also includes the separation of basic process control systems and safety instrumented systems (SIS), layers independent protection (LOPs), how to determine safety integrity levels (SILs), technology choices and field device issues.

The training seminar primarily focuses on establishing conceptual and detailed design requirements, hazard analysis techniques, safety requirements specification, and the commissioning, operating and maintenance procedures.

This training seminar will highlight:

- Hazard and risk reduction studies
- Explaining technology and equipment choices
- Safety requirement specifications for an SIS
- Selection of field devices (sensors, programmable logic controllers and valves)
- Establishing operation and maintenance procedures

Objectives

This training seminar is to acquaint instrumentation and control system engineers with the essentials of the IEC 61508 and IEC 61511 safety instrumented systems standards and, how they relate to the safety life cycle of developing and maintaining safety instrumented systems. The fundamental tools will enable delegates to evaluate, design, install and maintain Safety Instrumented Systems (SISs) and to determine their Safety Integrity Level (SILs) requirements.

At the end of this training seminar, you will learn to:

- Understand requirements of the international standards IEC 61508 and IEC 61511
- Apply the IEC 61508 Safety Instrumented System development 'Safety Life Cycle' model
- Determine the Safety Integrity Level (SIL) level using risk assessment methods
- Understand the specifications of emergency shutdown protection requirements
- Establish specification requirements for sensor, programmable logic controller and valves
- Follow Management of Change (MOC) procedures for control of future SIS changes

Training Methodology

The training seminar uses a range of approaches for learning, including group activities, exercises and case studies. Key part of the learning process is sharing of experiences and knowledge. Throughout the training seminar, delegates will learn through active participation using exercises and case studies.

Organisational Impact

In addition to the professional development of staff, the organisation will be able to prioritise resources for developing and managing safety instrumentation system projects, including:

- Implementing safety instrumented systems that optimises production and safety.
- Use well proven risk assessment and analysis for competent SIS development
- More effective implementation in upgrading existing emergency shutdown controls
- Improved confidence in the prevention of hazardous incidents

Personal Impact

Attendees will be able to apply skills learnt from this training at a practical level to identify, develop and implement safety instrumented systems.

- Delegates will gain skills to be able select technology choices that meets IEC 61508/61511
- By using these skills you can competently implement the SIS safety life cycle

Who Should Attend?

This training seminar is specifically tailored for anyone involved in the field of emergency shutdown and safety related instrumentation systems according to IEC 61508 and IEC 61511 requirements.

- Personnel who are responsible for the designing, selecting, specifying, installing, operating and maintaining safety instrumentation systems
- Experienced professionals who want to broaden their understanding of safety instrumentation systems (SIS)

This training seminar is also suitable to a wide range of professional but will greatly benefit:

- Design and Electrical Engineers
- Instrument and Process Control Engineers and Technicians
- Mechanical Engineers and Technicians
- Operations and Process Engineers
- Line Managers and Supervisors

DAY 1

Introduction to Safety Instrumentation Systems

- Overview of Safety Instrument Functions (SIFs)
- Introduction to Standards IEC 61508 and IEC 61511
- Equipment Under Control (EUC)
- Introduction in Identifying Hazards and Analysing Risks
- Safety Instrumented Systems (SIS) - Safety Life Cycle Stages
- Overview of Safety Integrity Levels (SILs)

DAY 2

Hazards & Risk Reduction

- Identifying Hazards and Risk Analysis Tools
- Process Control vs. Safety Control
- Layers of Protection Models (LOPs)
- Risk Reduction and Risk Ranking Classification
- Determining Safety Integrity Levels (SILs)
- Developing the Safety Requirements Specification

DAY 3

Technology Choices and Reliability Analysis

- IEC 61508 / IEC 61511 Technology Requirements
- Pneumatic Systems
- Relay Systems and Solid-state Systems
- Microprocessor / PLC Systems
- Issues related to System Size and Complexity
- Reliability of Components Databases

DAY 4

Overview of SIS Field Devices

- Importance of Field Devices
- Types of Sensors
- Final Elements (pressure relief and shutdown valves)
- Nuisance Trips, Voting Schemes and Redundancy
- Design requirements for Field Devices
- Installation of Field Device concerns

DAY 5

Safety Systems Engineering

- Step-by-Step Safety Instrumentation System Development Plan
- SIS Functional Testing Procedures
- Information Flow and Preparation of Documents
- Managing existing and future changes to an SIS
- Review of an SIS Design Checklist
- Close of Course



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| Code | Date | Venue | Fees |
|-------|------------------|-------------|---------|
| IN010 | 24 - 28 Jun 2018 | Dubai - UAE | \$4,750 |
| IN010 | 16 - 20 Dec 2018 | Dubai - UAE | \$4,750 |

REGISTRATION DETAILS

LAST NAME: _____
FIRST NAME: _____
DESIGNATION: _____
COMPANY: _____
ADDRESS: _____
CITY: _____
COUNTRY: _____
TELEPHONE: _____
MOBILE: _____
FAX: _____
EMAIL: _____

AUTHORISATION DETAILS

AUTHORISED BY: _____
DESIGNATION: _____
COMPANY: _____
ADDRESS: _____
CITY: _____
COUNTRY: _____
TELEPHONE: _____
MOBILE: _____
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PAYMENT DETAILS

- Please invoice my company
 Cheque payable to GLOMACS
 Please invoice me

CERTIFICATION

Successful participants will receive GLOMACS' Certificate of Completion

4 WAYS TO REGISTER

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TERMS AND CONDITIONS

- Fees - Each fee is inclusive of Documentation, Lunch and refreshments served during the entire seminar.
- Mode of Payment - The delegate has the option to pay the course fee directly or request to send an invoice to his/her company/ sponsor. Credit card and cheque payments are both acceptable.
- Cancellation / Substitution - Request for seminar cancellation must be made in writing & received three (3) weeks prior to the seminar date. A US\$ 250.00 processing fee will be charged per delegate for each cancellation. Thereafter, we regret that we are unable to refund any fees due, although in such cases we would be happy to welcome a colleague who would substitute for you.
- Hotel Accommodation - is not included in the course fee. A reduced corporate rate and a limited number of rooms may be available for attendees wishing to stay at the hotel venue. Requests for hotel reservations should be made at least three (3) weeks prior to the commencement of the seminar. All hotel accommodation is strictly subject to availability and terms and conditions imposed by the hotel will apply.
- Attendance Certificate - a certificate of attendance will only be awarded to those delegates who successfully completed/ attended the entire seminar including the awarding of applicable Continuing Professional Education Units/Hours.
- Force Majeure - any circumstances beyond the control of the Company may necessitate postponement, change of seminar venue or substitution of assigned Instructor. The Company reserves the right to exercise this clause and implement such amendments.
- Fair Access / Equal Opportunities - In the provision of its services as a world-class Training Provider, the Company is committed to provide fair access / equal opportunities throughout the delivery of its courses and assessment leading to the completion of training seminars, or 3rd party qualifications/certifications.

