

Operations and Maintenance of Safety Instrumented Systems Course

This training course deals with the knowledge required to operate and maintain Safety Instrumented Systems in the process industry such that the designed functional safety is maintained throughout the operations and maintenance phase of the AS 61511 lifecycle.

SUMMARY OF KEY TOPICS

- Reviewing basic principles and standards of safety instrumented systems in the process industry
- Understanding the main components required to plan a plant operation
- Procedures required for safe plant operation and maintenance
- Proof testing, maintenance and inspection
- Plant modifications/expansions

WHAT PARTICIPANTS GAIN

Participants will learn:

- the importance of following operation and maintenance procedures
- the differences in dormant and continuous operation systems
- what procedures are required to operate and maintain safety instrumented systems
- how to successfully proof test safety systems
- the importance of training in the safety lifecycle



Topics per chapter

Basic Principles of Safety Instrumented Systems

- Differentiate between safety instrumented systems and basic process control systems
- Describe how a safety instrumented function (SIF) is defined
- Describe types of failures that need to be considered to make systems functionally safe
- Identify and describe the breakdown of random hardware failures considered in functional safety
- Describe what is meant by common cause failure
- Identify the main issues with sharing instrumentation and final elements
- Define which phases of a project's lifecycle are covered by the AS 61511 standard
- What is risk, tolerable risk and the relationship to safety integrity level (SIL)
- Differentiate between reliability and availability
- Discuss the key documents that are generated during the safety instrumented system (SIS) design process
- List any assumptions, which may have been made during the SIS design process

Planning & Scheduling

- What are the main components required to produce and execute a plan?
- The differences between planned and ad-hoc maintenance activities

Procedures

- Identify the requirement for procedures covering normal and abnormal modes of operation
- Discuss and identify procedures, which must be followed to maintain system design integrity

WHO SHOULD ATTEND?

- Process operators
- Maintenance technicians/engineers
- Operations managers
- Instrument and electrical technicians/engineers
- Plant managers
- Maintenance managers
- Maintenance planners



Topics per chapter

Proof Testing & Inspection

- The reasons why proof testing is necessary for safety instrumented systems
- Define the scope of a SIF proof test
- Analyse the impact that changes in proof test intervals have on a safety instrumented function's SIL
- Describe the main requirements of proof test procedures and records
- Identify preferred proof testing methods for typical process sensors, logic-solvers and final elements

Management of Change

- Identify when management of change (MOC) is required and when it is not required
- List key items that should be included in MOC procedure and identify those in site specific management of change procedures/forms
- Describe how decommissioning activities are managed within the MOC system
- Identify key features of site-specific management of change procedures and records

Training & Competency

- Operations personnel - what training is required regarding the SIS
- Maintenance personnel - what training is required regarding the SIS

Configuration Management

- Describe why it is necessary to have traceability of SIS devices
- Describe the steps necessary to prevent unauthorised equipment entering service

Quiz

Review of the course followed by a quiz



COURSE DETAILS

Date:
TBA 2013

Location
Perth

Cost:
\$1200 (excluding GST)

Duration:
1 day

CONTACT DETAILS

For further information or to register, contact HIMA Australia:

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