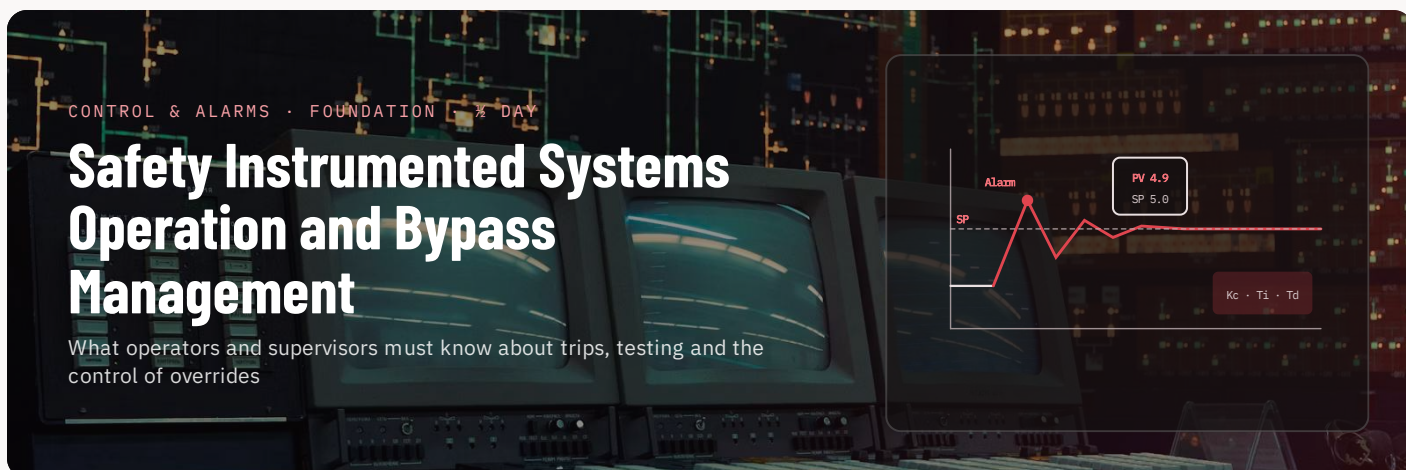




DURATION

½ day

LEVEL

Foundation

FORMAT

On-site classroom · virtual instructor-led

LANGUAGE

English

MAX. PARTICIPANTS

16

1

bypass procedure reviewed against IEC 61511

6

operator responsibilities for SIS

1

override register template

Overview

A safety instrumented function that is bypassed is a hole in the safety case, and most sites cannot say at any moment how many holes are open. This half-day session explains in plain terms what an SIS is, why its trips are set where they are, what a proof test does and what IEC 61511 requires when a function is bypassed, overridden or found to have failed. It ends with a review of the participants' own override procedure and register.

Learning outcomes

- Explain the difference between the BPCS, alarms and the SIS, and why the SIS is independent
- Read the trip settings and demand rate of a SIF and relate them to the hazard it protects against
- Apply the site rules for bypass authorisation, time limits, compensating measures and logging
- Recognise dangerous failures, degraded voting and diagnostics alarms and respond correctly
- Support proof testing and partial-stroke testing without introducing new hazards
- Keep the override register current and report bypasses as a leading indicator

Who should attend

Panel and field operators, shift supervisors, maintenance technicians and operations engineers who authorise or apply SIS bypasses

Course outline

SESSION 1

Layers of protection and the role of the SIS · SIF anatomy: sensor, logic solver, final element, voting · SIL, PFD and why trips must not be moved casually · demand, spurious trip and degraded modes · diagnostics alarms and what operators should do

SESSION 2

IEC 61511 clause 11 and 16 requirements for bypass and maintenance · bypass authorisation, time limits, compensating measures · override register and shift-handover practice · proof testing and partial-stroke testing from the operator's side · review of the site's own procedure · quiz and certificate

Standards referenced

IEC 61511

IEC 61508

ISA-84.91.01

ANSI/ISA-18.2

API RP 754

Tools & exercises

Exercises on the site's own SIS cause-and-effect matrix and override register

What's included

- ✓ Course manual and slide pack
- ✓ Software access for the course
- ✓ Post-course Q&A with the instructor
- ✓ Exercise and case-study pack
- ✓ Competency quiz and certificate
- ✓ Templates used in the exercises

PREREQUISITES

None

CERTIFICATION

Certificate of completion; competency record for the training matrix

INSTRUCTORS

Practising engineers — TÜV HAZOP Leader, CCPSC and IEC 61511 Functional Safety certified — with 200+ years of cumulative plant experience.

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