
Alarm Management Lifecycle: Philosophy, Rationalisation and Performance Monitoring Training Course

6 – 10 June 2027
Muscat





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Programme Summary

Alarm management is the subject of this one-week training course for operations, control and process safety leaders, ending in an alarm improvement plan for one process unit. Control rooms often receive more alarms than an operator can read, so important warnings are lost among nuisance signals. The programme moves from the alarm lifecycle and philosophy to diagnosis of floods and bad actors, then to the design of rationalisation and controls, and then to application on live data. Mars Training Centre UK delivers this programme on alarm management for leaders from mixed process organisations.

The Business Case

An alarm system is meant to tell the operator what needs action, in time to act. When alarms are poorly set, operators learn to ignore them, shelve them or acknowledge them without thought, and serious upsets are missed. Leaders who set a clear philosophy, remove nuisance alarms on evidence and measure performance every month protect the plant, the operators and the investigation record after an incident.

- Operator Workload: Falls as nuisance and duplicate alarms are removed.
- Upset Response Time: Improves as priorities and response guidance are clear.
- Process Safety Assurance: Strengthens as alarm changes are controlled and audited.

Principles and Evidence Base

- ISA-18.2 and IEC 62682 on the alarm management lifecycle: They supply the lifecycle stages from philosophy to audit that organise Sessions 1 to 4.
- EEMUA 191 guidance on alarm systems: It informs the performance indicators and operator load measures read in Session 2.
- Human factors principles for control room work: They frame the operator load and response time reasoning used in Sessions 2 and 3.

Intended Participants

- Operations managers who answer for control room performance.
- Control and automation leaders who own alarm configuration and limits.
- Process safety leaders who rely on alarms as protection layers.
- Technical authorities who approve alarm changes and audit the system.

Typical participants come from refining, petrochemicals, gas processing and power generation.



Learning Outcomes

1. Participants will be able to construct an alarm philosophy with priority and classification rules.
2. Participants will be able to diagnose alarm floods, bad actors and operator overload from alarm data.
3. Participants will be able to evaluate each alarm against purpose, consequence and response time.
4. Participants will be able to justify alarm limits, shelving rules and suppression controls.
5. Participants will be able to design a performance report and management of change route for alarms.
6. Participants will be able to prioritise improvement actions for one process unit.

Programme Structure

Day 1: Alarm Management Lifecycle Principles and Alarm Philosophy

What should an alarm be, and what rules should every alarm meet?

- ISA-18.2 and IEC 62682 Lifecycle Map
- Alarm Definition and Purpose Test
- Alarm Philosophy Document Outline
- Alarm Priority and Classification Scheme
- Alarm Management Roles Chart

Day 2: Diagnosing Alarm Floods, Bad Actors and Operator Load

Where does the alarm system overload the operator, and which alarms cause most of it?

- Alarm Rate per Operator Reading
- Peak Alarm Rate and Flood Timeline
- Bad Actor Alarm Ranking
- Stale and Chattering Alarm Review
- Operator Response Load Interview Log

Day 3: Designing Rationalisation, Limits and Alarm Controls

How is each alarm judged, set and controlled so that it earns its place?

- Rationalisation Worksheet Method
- Consequence and Response Time Scoring
- Alarm Limit and Deadband Setting Guide
- Shelving and Suppression Control Rules
- Alarm Response Guidance Template



Day 4: Monitoring Performance, Change Control and Audit

How is alarm performance kept visible and the system kept under control after the project ends?

- Alarm Performance Indicator Report Layout
- Management of Change Route for Alarms
- Alarm Maintenance and Testing Schedule
- Alarm System Audit Checklist
- Improvement Action Register

Day 5: Applying Alarm Management to One Process Unit

Is the alarm improvement plan ready to put to the unit team?

- Applying the Session 1 Philosophy to the Unit
- Ranking Session 2 Bad Actors on Unit Data
- Rationalising a Session 3 Alarm Sample
- Setting Session 4 Targets and Audit Points
- Completing the Alarm Improvement Plan

Methodology

The programme uses a data workshop method built on anonymised alarm logs, event timelines and alarm lists from refining and utility units. Participants rank alarms, score them and set limits in small groups, then defend their choices to peers who play the roles of operator and safety reviewer. Facilitator feedback is given on every work product before it enters the final plan.

- Suggested activity: Reading a ten-minute alarm flood timeline and marking the alarms that needed action.
- Suggested activity: Rationalising twelve alarms using the consequence and response time score.
- Suggested activity: Drafting the monthly performance report for a sample unit.

Capstone Output

Each participant completes an alarm improvement plan for one process unit. It holds a short alarm philosophy, a ranked bad actor list, a rationalisation sample with decisions, shelving and suppression rules, a performance report layout and a change and audit route. The plan is used at work to brief the unit team and to start the clean-up of its alarm list.



Frequently Asked Questions

Is alarm management suitable for leaders who do not configure control systems themselves?

Yes. Alarm management is taught for people who direct operations and control, and it assumes responsibility for a control room or alarm system, not skill in configuring one.

Which standards does alarm management rest on in this programme?

Alarm management here rests on ISA-18.2 and IEC 62682 for the alarm lifecycle, with EEMUA 191 guidance on alarm system performance and human factors principles.

How is the alarm improvement plan from alarm management used at work?

You use the alarm improvement plan to brief the unit team, start the rationalisation of the alarm list and set the indicators that track progress.

How does alarm management differ from a programme on process control tuning?

Alarm management centres on which warnings reach the operator and how they are governed, while process control tuning centres on loop settings that keep process variables on target.