

Training Title OPERATIONAL ABNORMALITY MANAGEMENT

Training Duration 5 days

Training Venue and Dates

REF:	Operational Abnormality	5	22-26 June 2025	\$5,500	Cairo, Egypt.
PE220	Management				

Training will be held at any of the 4-5-star hotels. The exact venue will be informed later.

Training Fees

\$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

The Operational Abnormality Management course is designed to help industrial personnel proactively identify, assess, and respond to abnormal operating conditions before they escalate into safety incidents, equipment failures, or production losses. This training emphasizes early detection, structured response, and integration with process safety, human reliability, and asset integrity frameworks.

Abnormal situations can occur in any operation—ranging from subtle process deviations to full-scale emergencies. Effective management of these conditions is critical to ensuring safe, reliable, and efficient operations, especially in high-risk environments such as oil & gas, petrochemicals, power generation, and heavy industry.

TRAINING OBJECTIVES

By the end of this course, participants will be able to:

- Recognize early warning signs of abnormal operations
- Understand human and technical contributors to abnormal events
- Apply structured decision-making and escalation protocols
- Use tools such as alarm management, root cause analysis, and data monitoring
- Strengthen operational discipline and reduce unplanned downtime

TRAINING METHODOLOGY

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A highly interactive combination of lecture and discussion sessions will be managed to maximize the amount and quality of information, knowledge and experience transfer. The sessions will start by raising the most relevant questions, and motivate everybody finding the right answers. The attendants will also be encouraged to raise more of their own questions and to share developing the right answers using their own analysis and experience.

All attendees receive a course manual as a reference.

This interactive training workshop includes the following training methodologies

30% Lectures

30% Workshops and work presentation

20% Group Work& Practical Exercises

20% Videos& General Discussions

WHO SHOULD ATTEND

This course is ideal for:

- Control Room Operators and Supervisors
- Process and Production Engineers
- Maintenance and Reliability Engineers
- HSE Professionals
- Shift Team Leaders and Frontline Supervisors
- Incident Investigators and Safety Managers

COURSE OUTLINE

<u>Day 1</u>

Module 1: Introduction to Operational Abnormalities

- Definition of operational abnormality
- Common causes and consequences of abnormalities
- Types of abnormal situations (mechanical, process, human)
- Case studies of abnormal events and lessons learned

<u>Day 2</u>

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Module 2: Human Factors and Situational Awareness

- Role of human error in abnormal operations
- Decision-making under stress
- Situational awareness and early warning signs
- Crew resource management principles

Module 3: Process Safety and Abnormal Situation Management

- Connection between abnormality management and process safety
- Hierarchy of controls for abnormal conditions
- Alarm management (ISA-18.2 standard)

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• Control system response to abnormal situations

<u>Day 3</u>

Module 4: Detection and Diagnosis

- Indicators of abnormal operations (pressure, temperature, vibration, alarms, etc.)
- Diagnostic tools and techniques
- Using data analytics and condition monitoring
- Role of control room operators and field personnel

Module 5: Response and Mitigation

- Structured response protocols (e.g., ESD, isolation, depressurization)
- Communication and escalation procedures
- Real-time decision-making tools
- Use of Standard Operating Procedures (SOPs) and deviation handling

<u>Day 4</u>

Module 6: Root Cause Analysis and Learning

- Incident vs. abnormality vs. near miss
- RCA tools: 5 Whys, Fishbone, Barrier Analysis
- Documentation and reporting systems
- Integrating findings into operational procedures and training

Module 7: Operational Discipline and Culture

- Building a culture of operational vigilance
- Leadership and frontline engagement
- Role of operations management in sustaining reliability
- Integration with Reliability and Integrity programs (e.g., RCM, RBI)

<u>Day 5</u>

Module 8: Technology and Digital Tools

- Use of AI, machine learning, and predictive analytics
- Digital twins and real-time monitoring
- Abnormal Situation Management (ASM) software
- HMI/SCADA design for early detection

NOTE:

Pre & Post Tests will be conducted

Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.

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