

Course No. 1852

Turnaround Management for Mechanical & Static Equipment Training Course

**MECHANICAL MAINTENANCE, RELIABILITY & TURNAROUND
OIL & GAS**

DURATION

5 Days

DELIVERY

Classroom



Course Overview

This advanced training course provides a comprehensive and practical framework for managing turnaround activities involving mechanical and static equipment in oil and gas, refining, petrochemical, chemical, and process facilities. It focuses on planning, coordinating, executing, and controlling major maintenance events while maintaining strict requirements for safety, quality, schedule, cost, and equipment integrity.

The course addresses the complete turnaround lifecycle, from scope identification and work screening through detailed planning, resource mobilization, field execution, inspection, repair, testing, commissioning, and startup. Participants will learn how to manage mechanical and static equipment work scopes involving pressure vessels, heat exchangers, storage tanks, piping systems, pumps, compressors, valves, and other critical plant assets.

A major emphasis is placed on integrating inspection findings, maintenance requirements, engineering activities, materials, contractors, resources, permits, isolation requirements, and operational constraints into an executable turnaround strategy. Participants will learn how to prioritize work according to equipment criticality, risk, integrity requirements, and production impact.

Through practical case studies and workshops, the course develops the skills required to manage complex turnaround interfaces, control field execution, monitor progress, address delays, manage changes, and ensure equipment is safely returned to service. The program ultimately supports improved turnaround efficiency, mechanical integrity, reliability, and lifecycle asset performance.

Objectives

- By the end of the course, participants will be able to:
- Analyze the principles, phases, and governance requirements of turnaround management.
- Develop and validate turnaround scopes for mechanical and static equipment.
- Prioritize turnaround work based on asset criticality, integrity, risk, and operational impact.
- Develop detailed execution strategies for mechanical and static equipment activities.
- Integrate inspection, maintenance, engineering, operations, procurement, and contractor requirements.

- Develop work packages, resource plans, material requirements, and execution schedules.
- Manage inspection, repair, testing, and maintenance activities for critical static equipment.
- Coordinate mechanical equipment maintenance activities within integrated turnaround work fronts.
- Monitor productivity, progress, quality, safety, cost, and schedule performance.
- Identify and manage turnaround risks, constraints, interfaces, and schedule-critical activities.
- Apply effective change control and delay recovery strategies during turnaround execution.
- Develop commissioning, startup readiness, closeout, and post-turnaround improvement plans.

Who Should Attend

This course is designed for turnaround managers, maintenance managers, mechanical engineers, static equipment engineers, inspection engineers, reliability engineers, maintenance planners, and professionals responsible for managing major maintenance events in industrial facilities.

It is particularly relevant to personnel involved in pressure vessel, heat exchanger, storage tank, piping, rotating equipment, valve, inspection, mechanical integrity, maintenance, and engineering activities during shutdowns and turnarounds.

The program is also suitable for operations managers, engineering managers, asset integrity leaders, project personnel, contractor coordinators, planning and scheduling specialists, quality professionals, and decision-makers responsible for safe, efficient, and timely turnaround execution.

Learning Outcomes

- Upon completion of the course, participants will be able to:
- Explain the complete lifecycle and management framework of mechanical and static equipment turnarounds.
- Develop structured turnaround scopes for mechanical and static equipment.
- Evaluate equipment criticality and prioritize maintenance and inspection activities.
- Develop integrated work packages for static and mechanical equipment.
- Coordinate inspection, maintenance, engineering, procurement, operations, and contractor interfaces.

- Plan resources, materials, tools, equipment, access, and specialist services.
- Develop realistic execution schedules and identify critical path activities.
- Manage inspection and maintenance activities for pressure vessels, tanks, heat exchangers, piping, and mechanical equipment.
- Control field execution, productivity, quality, safety, and schedule performance.
- Identify delays, constraints, bottlenecks, and emerging execution risks.
- Apply effective recovery, acceleration, resequencing, and resource optimization strategies.
- Manage mechanical integrity requirements throughout turnaround execution.
- Establish commissioning and startup readiness requirements for maintained equipment.
- Evaluate turnaround performance using appropriate key performance indicators.
- Develop post-turnaround lessons learned and continuous improvement initiatives.

Course Outline

DAY 01

Turnaround Strategy, Scope & Governance

- Turnaround lifecycle, objectives, governance, and management structure.
- Identifying mechanical and static equipment turnaround requirements.
- Scope development, screening, validation, prioritization, and scope freeze.
- Equipment criticality, integrity risk, production impact, and work prioritization.
- Defining turnaround work fronts and execution strategies.
- Interfaces between maintenance, inspection, engineering, operations, and projects.

PRACTICAL APPLICATION

Develop and prioritize a turnaround scope for mechanical and static equipment.

DAY 02

Planning Mechanical & Static Equipment Work

- Detailed job planning and development of mechanical and static equipment work packages.
- Planning inspection, cleaning, opening, dismantling, repair, replacement, testing, and reassembly activities.

DAY 02 — CONTINUED

- Resource, manpower, materials, tools, lifting equipment, access, and specialist requirements.
- Contractor mobilization and coordination.
- Material availability, procurement, warehousing, and pre-staging.
- Permit, isolation, access, safety, and work-front readiness requirements.

PRACTICAL APPLICATION

Develop integrated work packages for selected pressure vessels, heat exchangers, tanks, piping, and mechanical equipment.

DAY 03

Turnaround Execution & Mechanical Integrity

- Field execution management and work-front coordination.
- Inspection and maintenance execution for pressure vessels, heat exchangers, tanks, and piping.
- Mechanical equipment maintenance during turnaround activities.
- Managing repair, replacement, welding, testing, examination, and quality requirements.
- Daily progress control, productivity monitoring, and field reporting.
- Managing simultaneous activities, interfaces, constraints, and operational conflicts.

PRACTICAL APPLICATION

Manage a simulated turnaround work front and resolve mechanical integrity and execution challenges.

DAY 04

Schedule Control, Risk & Performance Management

- Turnaround scheduling, sequencing, dependencies, and critical path management.
- Progress measurement and planned-versus-actual performance analysis.
- Identifying delays, bottlenecks, constraints, and productivity losses.
- Risk management and emerging issue escalation.
- Change control and management of additional or unforeseen work.

DAY 04 — CONTINUED

- Schedule recovery, acceleration, resequencing, and resource optimization.

PRACTICAL APPLICATION

Analyze a delayed turnaround scenario and develop a recovery strategy to protect the critical completion date.

DAY 05

Testing, Startup Readiness & Turnaround Improvement

- Equipment testing, inspection closeout, documentation, and quality verification.
- Mechanical completion and readiness for commissioning.
- Startup preparation and coordination with operations.
- Turnaround closeout, punch-list management, and outstanding work control.
- Key performance indicators for safety, quality, cost, productivity, schedule, and reliability.
- Post-turnaround evaluation, lessons learned, and continuous improvement.

FINAL WORKSHOP

Develop an integrated turnaround management plan for mechanical and static equipment, covering scope, criticality, work packages, resources, schedule, execution controls, risk management, testing, startup readiness, and performance improvement.

Register or Request More Information

Course page: <https://quest-training.com/courses/turnaround-management-for-mechanical-static-equipment-training-course>

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