QUEST
Professional Center

PROFESSIONAL TRAINING COURSE

Course No. 1843

Shutdown, Turnaround & Outage (STO) Management Training Course

MECHANICAL MAINTENANCE, RELIABILITY & TURNAROUND
OIL & GAS

DURATION
5 Days

DELIVERY
Classroom

Course Overview

The Shutdown, Turnaround & Outage (STO) Management Training Course provides a comprehensive professional program for planning, managing, executing, and closing complex shutdown, turnaround, and outage activities across oil & gas, petrochemical, refining, power, and industrial facilities. The course focuses on maximizing safety, schedule performance, cost control, work quality, and operational readiness while minimizing production losses.

Participants will explore the complete STO life cycle, from early strategic planning and scope development through detailed preparation, execution, commissioning, startup, and post-turnaround evaluation. The program emphasizes structured planning, work-pack development, resource optimization, materials readiness, contractor coordination, and effective management of interfaces between engineering, maintenance, operations, inspection, procurement, and HSE teams.

A major focus is placed on developing an accurate and controlled turnaround scope. Participants will learn how to identify critical maintenance and inspection work, eliminate unnecessary activities, prioritize tasks according to risk and asset criticality, establish realistic schedules, and manage the complex dependencies associated with simultaneous work activities.

The course also addresses execution control, progress measurement, productivity management, change management, cost control, permit-to-work coordination, safety leadership, quality assurance, commissioning, and startup readiness. Practical exercises and realistic turnaround scenarios enable participants to develop integrated STO strategies and respond effectively to schedule delays, resource constraints, scope changes, technical problems, and operational risks.

Objectives

- By the end of the course, participants will be able to:
- Analyze the strategic importance and business impact of shutdown, turnaround, and outage activities.
- Develop comprehensive STO strategies aligned with production, maintenance, and asset objectives.
- Define, validate, prioritize, and control turnaround scope.
- Develop integrated schedules and realistic execution plans.

- Optimize manpower, equipment, materials, contractors, and specialist resources.
- Apply risk management principles to shutdown and turnaround planning.
- Establish effective work-pack, readiness, and pre-execution management processes.
- Strengthen HSE controls and safe-work management during high-risk turnaround activities.
- Monitor progress, productivity, schedule performance, and critical-path activities.
- Control scope changes, costs, delays, and execution risks.
- Improve coordination between operations, maintenance, engineering, inspection, procurement, contractors, and HSE.
- Develop effective commissioning, startup, and operational-readiness strategies.
- Measure turnaround performance and identify lessons learned.
- Develop continuous-improvement strategies for future STO events.

Who Should Attend

This course is designed for shutdown and turnaround managers, maintenance managers, project managers, operations managers, engineering managers, reliability professionals, planners, schedulers, inspection professionals, and HSE personnel involved in major plant shutdowns and turnarounds.

It is also suitable for maintenance and operations supervisors, project engineers, planning and scheduling specialists, procurement and materials personnel, contractor managers, cost controllers, commissioning teams, and technical specialists responsible for executing shutdown and outage activities.

The program is particularly valuable for senior managers, asset managers, plant leaders, and decision-makers responsible for minimizing production losses, controlling turnaround costs, ensuring safe execution, improving asset reliability, and achieving successful plant restart.

Learning Outcomes

- Upon completion of the course, participants will be able to:
- Explain the complete shutdown, turnaround, and outage management life cycle.
- Develop strategic STO plans aligned with business and asset objectives.

- Establish and optimize turnaround scope using risk and criticality considerations.
- Develop integrated schedules, milestones, work sequences, and execution strategies.
- Identify critical-path activities and manage schedule dependencies.
- Develop effective work packages and readiness plans.
- Optimize workforce, equipment, materials, and contractor resources.
- Establish effective HSE and permit-to-work controls for turnaround activities.
- Monitor progress, productivity, cost, quality, and schedule performance.
- Manage changes, delays, risks, and emerging technical issues during execution.
- Improve cross-functional coordination and communication.
- Develop commissioning and startup readiness plans.
- Evaluate STO performance using appropriate performance indicators.
- Conduct post-turnaround reviews and capture lessons learned.
- Develop an improvement roadmap for future shutdown and turnaround events.

Course Outline

DAY 01

STO Strategy, Planning & Scope Development

- Shutdown, turnaround, and outage concepts, objectives, and business impact.
- STO life cycle, governance, roles, responsibilities, and decision points.
- Scope identification, validation, screening, prioritization, and work selection.
- Risk-based scope development and asset-criticality considerations.

> **PRACTICAL APPLICATION**
> Develop and prioritize a turnaround scope for a selected industrial facility.

DAY 02

Detailed Planning, Scheduling & Resource Management

- Work breakdown structures, work packages, task sequencing, and planning requirements.
- Integrated scheduling, milestones, critical path, constraints, and schedule optimization.

DAY 02 — CONTINUED

- Workforce planning, equipment, materials, spare parts, and specialist resources.
- Contractor planning, mobilization, coordination, and performance requirements.

PRACTICAL APPLICATION

Develop an integrated turnaround schedule and resource plan for a major maintenance event.

DAY 03

STO Execution, HSE & Operational Control

- Execution readiness, site preparation, permits, isolations, and work-front management.
- HSE risk management and control of simultaneous high-risk activities.
- Progress measurement, productivity monitoring, daily coordination, and field control.
- Scope changes, technical issues, delays, constraints, and escalation management.

PRACTICAL APPLICATION

Manage a simulated turnaround execution scenario involving schedule delays, resource constraints, and changing work scope.

DAY 04

Cost, Quality, Inspection & Commissioning Management

- Turnaround cost planning, budgeting, forecasting, and cost control.
- Quality assurance, inspection, testing, and work-completion verification.
- Management of materials, contractors, procurement, and commercial interfaces.
- Commissioning preparation, system handover, startup readiness, and operational coordination.

PRACTICAL APPLICATION

Develop a cost-control, quality-assurance, and startup-readiness plan for a turnaround project.

DAY 05

Performance Management, Startup & Continuous Improvement

- Turnaround performance measurement, key performance indicators, and management reporting.
- Schedule and cost performance evaluation and identification of performance gaps.
- Startup execution, operational readiness, handover, and stabilization.
- Post-turnaround review, lessons learned, root-cause analysis, and continuous improvement.
- Final Application: Develop a comprehensive STO management strategy covering scope, planning, scheduling, resources, HSE, execution control, cost, quality, inspection, commissioning, startup, performance measurement, lessons learned, and improvement actions for future turnaround events.

Register or Request More Information

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