CONCEPT

# Shutdown, Turnaround and Outage Management: Scope Freeze, Critical Path and Execution Control

10 – 14 May 2027
Barcelona - Eixample district four-star



# Shutdown, Turnaround and Outage Management: Scope Freeze, Critical Path and Execution Control

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## Introduction:

Shutdown, turnaround and outage STO events take whole process units offstream and consume the largest share of a plant's annual maintenance spend, yet many overrun because scope keeps growing after freeze, work packs arrive late, contractors mobilise unprepared and emergent work swamps the critical path. This Core Concept course equips turnaround, planning, operations and maintenance leads to prepare an event against a milestone timeline, challenge and freeze scope, schedule and cost it, control execution day by day and return units to operation. Participants produce a Turnaround Execution Readiness Plan.

## Course Objectives:

- Set the turnaround strategy, run-length interval and event objectives with operations, maintenance, inspection and finance stakeholders
- Run a milestone-based preparation timeline with readiness gates, and challenge and freeze the worklist against clear acceptance criteria
- Develop work packs, contractor strategy and mobilisation plans that let crews start on the first shift of the event
- Build and level a detailed turnaround schedule, identify its critical and near-critical paths, and estimate and control event cost
- Control safety, permits, simultaneous operations, daily progress and emergent work during execution without losing the critical path
- Confirm start-up readiness, hand units back to operations and lead a post-turnaround review with KPIs that feed the next event

## Target Audience:

- Managers who lead turnaround, shutdown or outage organisations and own event scope, schedule and budget
- Planning and scheduling staff who build turnaround work packs, logic networks and resource-levelled schedules
- Operations leads who define process-related scope, prepare units for isolation and accept equipment back after the event
- Maintenance and inspection leads who contribute worklist items, execute mechanical scope and verify quality
- Contract and materials coordinators who engage contractors, secure long-lead items and manage site logistics
- Safety and permit coordinators who control work authorisation and simultaneous operations during the event

## Course Outline:

### Day 1: Turnaround Strategy, Interval and Event Governance

- STO Event Types: Full Plant Turnaround, Unit Shutdown and Equipment Outage
- Run-Length Interval Decision Using Inspection Findings, Catalyst Life and Lost Production Cost
- Turnaround Policy, Steering Committee and Event Objectives Charter
- Core Turnaround Team Structure and Roles Across Operations, Maintenance and Inspection
- Previous Event Performance Baseline and Current-State Readiness Assessment

### Day 2: Milestone Preparation Timeline, Scope Challenge and Scope Freeze

- Milestone-Based Preparation Timeline with Readiness Gates Counted Back from Shutdown Date
- Worklist Collection from Inspection, Process, Projects and Deferred Maintenance Sources
- Scope Challenge Criteria: Risk, Must-Do Justification and Online Alternatives
- Scope Freeze Rules and Late-Scope Change Request Approval Workflow
- Long-Lead Materials Identification, Expediting and Staging Plan

### Day 3: Work Packs, Contractors, Scheduling and Cost

- Turnaround Work Pack Content: Job Steps, Isolations, Drawings, Materials and Quality Records
- Contractor Strategy: Lump-Sum, Unit-Rate and Reimbursable Models with Mobilisation Plan
- Shutdown and Start-up Logic Networks with Critical and Near-Critical Path Identification
- Resource-Levelled Turnaround Schedule with Crane, Scaffold and Craft Histograms
- Turnaround Cost Estimate, Contingency and Earned Value Baseline

### Day 4: Execution Control, Safety and Emergent Work

- Permit to Work, Isolation Registers and Simultaneous Operations Controls During the Event
- Daily Execution Rhythm: Shift Handover, Progress Meetings and Look-Ahead Plans
- Progress Measurement and Schedule Recovery on the Critical Path
- Emergent Work and Inspection Discovery Handling with Cost and Schedule Impact Review
- Mechanical Completion Walkdowns, Box-Up Sequence and Unit Handback Checklist

### Day 5: Case Work and the Turnaround Execution Readiness Plan

- Refinery Unit Case Study: Scope Growth After Freeze and Critical Path Slip
- Power Plant Outage Case Study: Contractor Mobilisation and Emergent Work Pressure
- Post-Turnaround Review Workshop: KPI Set, Cost and Schedule Variance and Lessons Learned Log
- Turnaround Execution Readiness Plan Drafting for a Participant Event
- Plan Presentation and Peer Challenge Panel

## Skills You Will Gain:

- Turnaround Strategy Setting
- Worklist Challenge
- Scope Freeze Control
- Turnaround Work Pack Development
- Contractor Mobilisation Planning
- Critical Path Scheduling for Shutdowns
- Turnaround Cost Control
- Emergent Work Management

## Why Attend This Course:

- Take back a Turnaround Execution Readiness Plan tested against peer challenge for an upcoming event
- Reduce late scope and unplanned overrun by applying readiness gates well before the units come offstream
- Give shift and area teams a daily control rhythm that protects the critical path when discovery work appears
- Compare shutdown and outage practice with peers from refining, gas processing, petrochemicals and power generation

## Conclusion:

Turnaround results are decided in the months before shutdown, through the interval decision, readiness gates, a frozen and challenged worklist, complete work packs and a contractor plan that is ready on the first shift. This course moves from strategy and governance, through preparation milestones and scope control, to work packs, scheduling and cost, then to execution control, permits, emergent work and handback. The final day applies these methods to case events and produces a Turnaround Execution Readiness Plan for review with site leaders.