



## Managing Efficient Shutdowns & Turnarounds Course



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## Introduction:

Planning and managing shutdowns, turnarounds, and outages in the process plant environment is complex and demanding. Successful shutdown and turnaround management require a well-coordinated effort that considers all potential risks and demands meticulous planning. Without proper management, shutdowns, and turnarounds can lead to severe budget overruns, costly schedule delays, and negative impacts on customers.

## Effective Turnaround Shutdown and Outage Management:

This efficient turnaround and shutdown management course will explore the critical elements of effective turnaround shutdown and outage management. Participants will understand how to prepare for, execute, and review shutdowns/turnarounds to minimize downtime and ensure safety while adhering to budgets and schedules.

## Targeted Groups:

- Shutdown or Turnaround Professionals and Coordinators.
- Planning / Scheduling and Cost Control Staff.
- Construction Superintendents and Supervisors.
- Operations Shutdown / Outage Coordinators.
- Project Engineers and Contract Administrators.
- Inspection, Materials, Safety, and Maintenance Engineering Staff.

## Course Objectives:

By the efficient turnaround and shutdown management course end, participants will:

- Enhance the company's turnaround management capabilities and ensure a team approach to planning and executing plant shutdowns and turnarounds.
- Gain a comprehensive understanding of shutdown turnaround training techniques and implementation.
- Create awareness of planning for shutdowns, turnarounds, and outages with an integrated organizational approach.
- Incorporate the latest developments in turnaround planning and management techniques and emerging industry trends.
- Develop an action plan to improve their turnaround management techniques.
- Have a clearer understanding of their and other team members' roles in ensuring a successful shutdown turnaround.

## Targeted Competencies:

At the end of this efficient turnaround and shutdown management training, the target competencies will:

- Develop a Shutdown/Turnaround strategy.
- Management of all Stages of the Shutdown Process.
- Developing Management, Work, Resource Plans, and Budgets.
- Manage related issues such as Risk and Safety.

## Course Content:

### Unit 1: The Role of Maintenance Shutdowns and Turnarounds in World-Class Organizations:

- How do Shutdowns and Turnarounds contribute to the business?
- Key Success Factors.
- The Three Critical Paths of Shutdowns and Turnarounds.
- The Difference between Shutdowns, Turnarounds, and Projects.
- Shutdown and Turnaround Return On Investment.
- Shutdown and Turnaround Management Self-assessment.
- The Shutdown and Turnaround Phases.
- Reasons for Shutdowns and Turnarounds.
- Success Factors.

### Unit 2: Shutdown/Turnaround Preparation:

- Risk Management.
- Justification Requirements.
- Communications to Stakeholders.
- Shutdown Roles and Organization.
- RASCI Matrix for Shutdown.
- Preparation Critical Success Factors.
- Identify Routine PM to be included in the Scope.
- Identify Routine Condition-based tasks to be performed before Shutdown and Turnaround.
- Identify Function Testing to be Performed after Shutdown and Turnaround.

### Unit 3: Shutdown/Turnaround Preparation Continued:

- Apply CBM and Degradation Analysis to create Scope Visibility.
- Apply Notification Process to manage Scope Visibility.
- Apply Risk-based Task Selection Methods to Prioritize and Challenge Scope.
- Review, Approve, Communicate, and Freeze the Scope.
- The Critical Outcomes of Planning.
- The 5 Ms of Maintenance Work Quality.
- Job Analysis and Scoping.
- Estimating.
- Risk and Contingency Planning.
- The Use of Planning Templates.
- Work Breakdown Structure.

#### **Unit 4: Shutdown and Turnaround Schedule:**

- Terms and Concepts of Scheduling.
- Network Display Methods.
- Apply CPM.
- Identify Resource Constraints.
- Resource Requirements based on CPM.
- Resource Smoothing.
- Resource Balancing.
- Optimized Resource Profile.
- Shutdown and Turnaround Budgets.
- Assign Shutdown Work - In-house and Contractors.
- Types of Contractors.
- Types of Contracts and Criteria for Selection.
- Risks Associated with the Use of Contractors.
- Benefits of Using Contractors on Shutdowns.
- Staying in Control of the Contractor.

#### **Unit 5: Shutdown and Turnaround, Execution Control and Review:**

- The Shutdown Package.
- Shutdown Quality Control.
- Shift Schedules.
- Preparing Equipment for the Shutdown.
- Daily Schedules.
- Dealing with Emergent and Additional Work.
- Control Data.
- Status Accounting.
- Control the Shutdown.
- S-curves.
- Earned-value.
- Shutdown Performance Indicators.
- Shutdown and Turnaround Review Meeting Agenda.
- Why do shutdowns fail?
- Problems in Shutdowns and Their Origins.
- Start-up and Commissioning.
- Shutdown Closing Out Report.
- Shutdown Closing Out Review.
- Overview of Computerized Tools.