

€ TRAINING

Managing Efficient Shutdowns &
Turnarounds





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Introduction:

Planning and managing shutdowns, turnarounds, and outages in the process plant environment is a complex and demanding function. If turnarounds are not properly planned, managed, and controlled, companies run the risks of serious budget overruns, costly schedule delays, and negative impacts on customers.

Course Objectives:

At the end of this course the participants will be able to:

- Enhance the company's turnaround management capabilities, and to ensure a team approach in the planning and execution of plant shutdowns and turnarounds
- Provide a comprehensive understanding of effective turnaround management techniques and implementation
- Create awareness of planning methods and an integrated organizational approach in the execution of successful turnarounds
- 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 much clearer understanding of their own and every other team members role in ensuring a successful turnaround

Targeted Audience:

- 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 Outlines:

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

- How Shutdowns and Turnarounds can contribute to the business
- Key Success Factors
- The Three Critical paths of Shutdowns and Turnarounds
- The Difference between Shutdowns and 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 Organisation
- RASCI Matrix for Shutdown
- Preparation of Critical Success Factors
- Identify Routine PM to be included in Scope
- Identify Routine Condition-based tasks to be performed before Shutdown and Turnaround
- Identify Function Testing to be Performed at Conclusion of Shutdown and Turnaround

Unit 3: Shutdown/Turnaround Preparation Continued:

- Apply CBM and Degradation Analysis to create Scope Visibility
- Apply Notification Process to manage to create Scope Visibility
- Apply Risk-based Task Selection Methods to Prioritise 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 Computerised Tools