



ME108: Process Plant Shutdown, Turnaround and Maintenance Management



Training Description:

In the process industry, shutdown and turnaround costs are responsible for an excessive amount of maintenance expenses. Process Plant Shutdown and Turnaround Maintenance and Management explores various types of shutdowns, presents recommendations for better management and offers feasible solutions to help overheads.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Develop a shutdown and turnaround strategy and maintenance
- ✓ Manage of all stages of the shutdown process
- ✓ Develop an action plan to improve turnaround management techniques
- ✓ Discuss different types of shutdown and managing events such as emergency, planned, unplanned and turnaround) and cover all respects of plant turnaround management including startup, shutdown and maintenance
- ✓ Describe the five phases of shutdown management that includes initiating, planning, executing, controlling and closing

Training Designed for:

This course is intended for shutdown and turnaround professionals and Coordinators, planning/scheduling and cost control staff, Construction Superintendents and Supervisors, Operations Shutdown/outage Coordinators, Project Engineers and Contract Administrators and participation from inspection, materials, safety and maintenance engineering is also encouraged.

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ Process Plant Turnarounds
- ❖ Activities during a Turnaround
- ❖ Maintenance Philosophy
- ❖ Economics of Maintenance Management
- ❖ Types of Maintenance Activities
- ❖ Types of Shutdown
- ❖ Shutdown of Key Refinery Units Affecting Pattern
- ❖ Strategic Issues
- ❖ Turnaround Evaluation
- ❖ Initiating the Turnaround
 - Developing a Shutdown Overview
 - Strategic Plan
 - Establish Shutdown Charter
 - Initiating
 - Scope Statement





- Appoint Shutdown Team
- Major Turnaround Milestones
- What Are The Shutdown/Turnaround Performance Criteria?
- ❖ **Planning**
 - Kickoff Meetings
 - Job Planning Team
 - Planning Step One: Developing the Shutdown Work List
 - Planning Step Two: Identify Task Relationships
 - Planning Step Three: Manpower Strategic Planning
 - Planning Step Four: Estimate Work Packages
 - Planning Step Five: Calculate an Initial Schedule
 - Planning Step Six: Assign and Leverage Resources
 - Planning Step Seven: Develop Procurement Plan
 - Planning Step Eight: Develop Quality Plan
 - Planning Step Nine: Develop Communications Plan
 - Planning Step Ten: Develop Risk Plan
- ❖ **Checklist**
- ❖ **Information Requirements for Planning**
- ❖ **Planning Is Not A One-Time Event**
- ❖ **Estimating**
 - What is an Estimate?
 - Methods for Estimating Activity Duration
 - What is the Cost Baseline?

DAY TWO:

- ❖ **Shutdown Contract Management**
 - What is a Contract?
 - Scope of Contract
 - Parties to a Contract
 - Objectives
 - Contractors
 - Selection of Contractor Work Packages
 - Contract Types
 - Selection of Contractor
 - Tender Evaluation Practices
 - Management of Obviously Low Bids
 - Subcontracts
 - Terms of Payment
 - Logistics
- ❖ **Shutdown Organization**
 - What is Involved in Effective Shutdown Organization?
 - Turnaround Steering Committee
 - Determination of the Skills Needed
 - Shutdown Manager's Skill Requirement



- Leading
- ❖ **Executing the Shutdown**
 - The Kickoff Meeting
 - Safety
 - Job Status Update
 - Daily Schedule
 - Reporting Status
 - Tracking Shutdown Costs
- ❖ **Pre-Shutdown Job**
 - Long-Delivery Items
 - Checklist
 - Pre-shutdown
 - Pre-fabricated Work
 - Accommodation and Facilities
 - Crowd Control
 - Contractor's Insurance Certificate
 - Safety Training
 - Employing Barricades
 - Emergency Showers and Eyebaths
 - Special Machines
 - Vendors Representatives

DAY THREE:

- ❖ **Inspection of Equipment**
 - Traditional Inspection Practice: Background
 - Inspection of Equipment
 - Columns
 - Vessels
 - Heat Exchangers
 - Demister Pad
 - Refractory
 - Pressure Safety Valves
 - Inspection during Fabrication of New Piping
 - External Corrosion
 - Approaches for other Equipment Types
- ❖ **Shutdown Safety**
 - Hazardous Chemicals and Catalysts
 - Common Hazards
 - Safety Planning
 - Safety Preplanning
 - Evaluation and Selection of Contractors and Subcontractors
 - Emergency Warning System Procedures
- ❖ **Shutdown Safety**
 - Hazardous Chemicals and Catalysts



- Common Hazards
- Safety Planning
- Evaluation and Selection of Contractors and Subcontractors
- Emergency Warning System and Procedures
- ❖ **Communication Package**
 - Methods of Communicating
 - Conducting Meetings
 - Communication for Success
- ❖ **Shutdown Control**
 - What are you actually Controlling
 - What are the Baselines?
 - Measuring Progress

DAY FOUR:

- ❖ **Quality Plan**
 - Shutdown Quality
 - Deliverable Quality
 - Planning Quality
- ❖ **Risk in Shutdown**
 - Why Risk Analysis is Necessary
 - What is Risk Management?
 - What are the Basic Steps in Risk Management?
 - What is Risk Identification?
 - What is Risk Quantification?
 - What are Risk Response Strategies?
 - Why do we have Two Separate Reserves to Take Care of the Risks?
 - Using a Risk Profile
 - Historical Records
- ❖ **Joint Integrity**
 - Managing Integrity
 - Major Causes of Joint Leakage
 - Corrective Action for Guideline and Responsibility Deficiencies
 - Joint Assembly Procedure
 - Conclusion

DAY FIVE:

- ❖ **Commissioning**
 - Systematic Commissioning Planning
 - Mechanical Integrity
 - What to Do in Check-listing
 - Commissioning
 - Process Commissioning
 - Commissioning and Start-Up Period
 - Minimum Facilities before Start-Up
 - Pre-Start-Up Safety Review (PSSR)





- Customized Testing and Acceptance Methodologies
- Sequence of Commissioning
- Equipment Operating Procedures
- ❖ **Post-shutdown Review**
 - Contract Closure
 - Administrative Closure
 - Post Evaluation Report
 - Safety/Environmental Performance and Procedures
 - Shutdown File
 - Final Report
 - Lesson Learned Session
 - Celebrating
- ❖ **Performance**
 - Performance Measure; Success
 - Lean Shutdowns; Cut Waste Wisely from Your Outages
- ❖ **Course Conclusion**
- ❖ **POST-TEST and EVALUATION**

Training Requirement:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Please note that the above topics can be amended as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant’s manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.





Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

