ME178

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

Course Objectives:
Upon successful completion of this course, the delegates will be able to:

- Develop a shutdown and turnaround strategy and maintenance
- Manage 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 aspects of plant turnaround management including startup, shutdown and maintenance.
- Describe the five phases of shutdown management that includes initiating, planning, executing, controlling and closing

Who Should Attend?
This course is intended for 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 and participation from inspection, materials, safety and maintenance engineering is also encouraged.

Course Outline:

**Day 1:**
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 Product Pattern
Strategic Issues
Turnaround Evaluation
Initiating the Turnaround

Initiation
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 of 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 Level 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 2:
Shutdown Contract Management
What Is a Contract?
Scope of a 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

**Preshutdown Job**
Long-Delivery Items
Checklist
Preshutdown
Prefabricated Work
Accommodation and Facilities
Crowd Control
Contractor’s Insurance Certificates
Safety Training
Employing Barricades
Emergency Showers and Eyebaths
Special Machines
Vendors Representatives

**Day 3:**

**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 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 4:**

**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 5:
Commissioning
Systematic Commissioning Planning
Mechanical Integrity
What to Do in Checklisting
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
Postshutdown 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 Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per the course location. This rate includes participant’s manual, Handouts, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

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