

## Strategies to Optimize Shutdowns, Turnarounds and Outages

### Course general description:

The industrial operations are losing over half a billion dollars of profits a year due to poor management of turnaround outputs and missed opportunities. The most of turnarounds lacked strategic focus and front-end planning. In addition, turnaround teams lacked leadership and were understaffed. The major negative factor is the growing gap between higher turnaround performance expectations and rapidly shrinking qualified resources to manage the turnarounds. As a result, the planning effort not only starts late, but it is also ineffective, and typically does not contribute in the turnaround success.

This course is designed to bridge the above mentioned gap. It will provide turnaround managers and engineers with enough knowledge and skills to understand the purpose of the turnaround, to properly plan and manage the turnaround, and to achieve exponential results of their turnaround project. The course will teach participants how to establish a systematic turnaround management processes and procedures that incorporate the best turnaround practices, planning techniques and execution strategies.

Turnaround results have a long-term effect on the facility's operational reliability and it dictates the plant's operational efficiency and business survival in the competitive global market. The turnaround performance can be dramatically improved if companies focus on key issues such as strategic planning, selection of qualified contractors, synergistic and innovative organizations, and tactical initiative to improve field productivity.

The course will cover the emerging industry trends, turnaround benchmarking and the challenges faced by plant executives to consistently achieve pacesetter results on plant shutdowns and turnarounds. We will teach you how to fairly balance your business, marketing and financial goals with your plant needs for mechanical integrity and operational reliability. We will show you how to focus on risk areas, early work scope definition, high-performance initiatives, the assignment of qualified staff and the best practice contracting strategy. Upon the completion of this course, you will have good knowledge to perform World-Class turnarounds.

### Audience:

This course is designed for those involved in the plant shutdown and turnaround operations. This includes maintenance and project staff such as engineers, supervisors, planners, and foremen.

### Course objectives:

Generally the purpose of this course is to:

1. Provide sound knowledge in shutdown & turnaround management process for Engineers, Supervisors and foremen.
2. Effective planning, scheduling, cost control, execution and control of shutdown work by utilizing flow chart techniques.

At end of the course the participant should be able to develop shutdown scope of work, Budget, Plans and control measures for the planning and execution of plant shutdown by covering the following subjects:

1. Introduction to Shutdowns and Turnarounds.
2. Shutdown/Turnaround preparation (SOW, budget, material and resources)
3. Plant shutdown and preparation for maintenance.
4. Preparation and Execution issues on Logistic, Infrastructure and Materials Management

5. Developing Shutdown and Turnaround Plans by the Critical Path Planning Method
6. Resource Management, Cost performance measures.
7. Performance management
8. Maximizing people resources
9. Safety, Quality and Risk Management
10. Overview of computerized tools, case studies

**Course duration:**

5 days

**Course location:**

Cairo-Dubai-Istanbul

**Course contents:**

**Day-1**

- Pre-test
- Course Introduction and Fundamentals of Shutdowns:
  11. Course Expectations
  12. Course Outline
  13. Shutdowns and Project Management – Unique Features
- Structure of the Shutdown
  1. Compiling and Defining the Scope of Work and Budget
  2. Operations & Maintenance Inputs
  3. Kickoff Meeting Agenda - Structured Group Interviews
  4. Identifying Pre-Shutdown and Start-up Work
  5. Validating the Work
  6. Planning Lead Time – Planning Phase is Actually a Project on its Own
  7. Project Work Hours and Shifts
  8. Project Charter and Scope Control
  9. Risks Assessment
  10. Quality Control Requirements
  11. Checklists and Action Item Lists

**Day-2**

- Base-line Plan, with Budget Approval
  1. Milestones and Constraints
  2. Network and Dependencies
  3. Gantt Charts – Master and Daily Schedules
  4. Resource Planning
  5. Cash Requirement and Flow Planning
  6. Confirming the Shutdown Budget
- Organizing the Shutting Down Meeting
  1. Organizing the Shutdown Project Team–Selecting the Manager
  2. Organizing Contracts and Procurement
  3. Tracking Shutdown Materials
  4. Coordinating Support Equipment
  5. Organizing the Shutting Down Meeting
  6. Organizing on Site Logistics
  7. Organizing Contract work – Shifts, Labor and Technical Support
  8. Organizing Tasks

### **Day-3**

- Organizing the Shutting Down Meeting
  1. Documentation Needed and its Organization
  2. Organizing the Store and Procurement Processes (Before and During)
  3. Organizing Progress Feedback
  4. Organizing Start-up and Handover Work Packages
- Execution and Feedback
  1. Feedback Methods and Documentation
  2. Meetings • Materials Management
  3. Accounting – Time and Materials Systems for Feedback
  4. Timeous Staging
  5. Quality, Safety and Activity Completion
  6. Class Tasks
  7. Accounting – Time and Materials Systems for Feedback
  8. Timeous Staging • Tracking Shutdown Materials
  9. Coordinating Support Equipment
  10. Quality, Safety and Activity Completion

### **Day-4**

- Control of Shutdown
  1. Methods of Control
  2. Time Control from Feedback
  3. Money Control from Feedback
  4. Scope Change and Impact Control
  5. Project Acceleration
  6. Contractor Controls and Safety Control
  7. Starting up and Handover
  8. Schedules and Checklists
  9. Completion Sign off Certificates
  10. Payment Certificates (as Applicable)
  11. Accounting Reports
  12. Payment of Contractors

### **Day-5**

- Use of Computers and Software
  1. Available Systems
  2. Problems with Using Computer Systems
  3. Spreadsheets
  4. Procurement Systems – e.g. SAP
  5. Shutdown Groups Workshop
  6. Briefing and Group Selection
  7. Shutdown Planning in Groups Per Briefing
  8. Shutdown Planning in Groups Per Briefing
  9. Shutdown Plan Presentation
- Posttest

### **Methodology:**

- 50% lectures & concepts

- 10% Videos
- 10% Case studies
- 10% Exercises
- 10% Discussions
- 10% Software (if applicable or examples)

**Course code: (TEME041)**