

Plant Turnaround Management

Course Overview

The most demanding call on maintenance Managers and personnel comes when a plant is shut down for a period of time for maintenance. Usually a large volume of work must be scheduled and completed into a relatively short period of time. Proper planning, scheduling and execution of turnarounds is very important in order to avoid financial implications and negative impacts on customers.

Course objectives

This course introduces the concepts associated with the successful planning and execution of a plant turnaround.

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

- Identify work to be executed during the turnaround.
- Co-ordinate turnaround projects from planning to execution.
- Apply turnaround best practices.
- Use critical path planning.
- Identify risks and manage risks effectively.
- Plan to meet deadlines and complete projects within budget and on time.
- Evaluate bids.
- Report and document shutdown activities.
- Use Project Management Software.

Who should attend:

This course is designed for Project Engineers, Maintenance Planners, Shutdown Managers

and Coordinators, Technical Personnel, Maintenance Supervisors and Operations staff involved in Turnarounds.

Training Methodology:

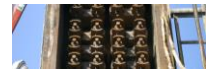
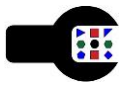
The course is conducted in an interactive way to encourage participants express their views and share their experiences. The course will be presented with lectures, videos, presentations and real-life examples, exercises and case studies will be analyzed. Part of the exercises will be planning of a Plant Shutdown.

Course instructor: George Loizou

George is a Mechanical Engineer with more than 37 years of experience mainly in the Oil and Gas Industry. George holds an MSc Degree from The Pennsylvania State University. He is a member of SMRP and a Certified Maintenance and Reliability Professional (CMRP), member of the Cyprus Scientific and Technical Chamber and a member of the Institution of Mechanical Engineers of UK. He is also a certified trainer by the Human Resources Development Authority (HRDA) of Cyprus.

George worked as Head of Mechanical Maintenance at the Cyprus Petroleum Refinery Ltd, Engineering Manager and Terminal Manager at Cyprus Petroleum Storage Company Ltd. He has a wide experience as a trainer, as since 2005 he has been delivering courses and seminars internationally.

Duration: 3 Days



DAY 1

Pre-Test

Introduction

- Definition.
- Turnarounds, Shutdowns and Outages.
- Premises.
- Turnarounds VS Construction Projects.

Turnaround planning

- Phases of the Turnaround.
- The Steering Committee.
- The Core Team.
- Budgeting.
- Turnaround Frequency.
- On-Stream Inspection Techniques.

Work Planning

- Introduction.
- The Planning process.
- The Work Breakdown Structure (WBS).
- Job Staffing.
- Turnaround Duration.
- Work Orders and Work list generation.
- Work order challenging and freezing.
- Additional work approval.
- Work Packages Risk Management.
- Operations Plan.

DAY 2

Work Scheduling

- Introduction.
- Basic Scheduling Concepts.
- Constraint Types.
- Network Diagrams.
- The Precedent Diagram Method.
- Program Evaluation and Review Technique (PERT).
- The Gantt Chart.
- Resource Levelling.
- Choosing the right program.
- Work Scope Control.

Contracting

- Introduction.
- Types of Contracts.
- Bidding evaluation selection and Contractor selection.

Organization

- Organization Structure.
- Key performance indicators.
- Logistics and site preparation.
- Waste Management.

DAY 3

Typical Operations Carried out during a Plant Turnaround

- Breaking containment of process lines or vessels.
- Entry of confined spaces.
- Change out of catalyst materials.
- Installation of new process equipment / removal of redundant equipment.
- Insulation installation and removal.
- Surface stripping and coating.
- Welding/repair of defects.
- Utilities maintenance.
- Easy Bolting.
- Quality.

Turnaround responsibilities

- Introduction.
- Communication.
- Developing daily schedules.
- Schedule updating.
- Progress Reporting.

Typical equipment workscope

- Heaters.
- Vessels/Columns.
- Heat exchangers.
- Rotating equipment.

Health and safety aspects

- Safety Planning.
- Work permit system.
- Shut down procedure & Isolation.
- Preparation of the worksite.
- Gas Testing.
- Preparation for Cold Work.
- Preparation for hot work.
- Preparation for confined space entry.
- Preparation for Electrical Work.
- Emergency response Plan.

Commissioning and final report

- Boxing Up Procedure.
- Start-up preparations.
- Start-up Assistance.
- Debriefing.
- Contractor Final Payment.
- Final report.

Exercises

Final Test