

## AN INTRODUCTION TO OVERALL PLANT MAINTENANCE

### Course Objective

In today's environment, process plants are interested in increasing profitability by improving reliability and achieving maintenance excellence. To attain these ends, new approaches and tools are being used. The purpose of this course is to provide an overview of overall plant maintenance and turnaround practices that have proven to be effective in increasing plant reliability in a safe and cost effective manner.

### Who Should Attend?

Supervisors and Managers assigned responsibility for maintenance and turnaround planning, cost, and unit reliability. Attendees should have an understanding of their plant's current practices, performance, and opportunities for improvement.

### Course Description

This course is divided into two main sections as described below.

#### *Day 1 – Maintenance Practices For Improved Performance*

This session introduces a model for achieving excellence in maintenance with a review of each model component. Such areas as overall philosophy, risk based decision-making and work scope justification will be discussed. Metrics will be introduced for stewarding performance and activities needed for continuous improvement.

- **Maintenance Management Model:** A model for conducting plant maintenance will be presented. The model is based on a proven model that has been successfully used to achieve maintenance excellence. This module establishes the basis for the subsequent modules that will explain the various model elements in more detail.
- **Maintenance Objective Setting:** This module will present the various business plans needed for an effective maintenance organization, including examples.
- **Work Selection:** Procedures for screening work requests and how work should be prioritized will be discussed. Risk-based decision-making will be included, integrating different risk matrices. Also, cost benefit analysis will be reviewed and how it can be used to prioritize work.
- **Work Planning and Scheduling:** The roles and responsibilities of planners and schedulers are presented, plus the procedures for performing both activities. The discussion will include the staffing and criteria for effective planning and what should be included in an effective work plan. Also included will be some metrics for assessing planning.
- **Work Execution:** Different contracting approaches are presented along with the objectives of work execution. An example roles and responsibilities list for supervisors is included.
- **Stewardship:** This section covers the activities normally employed to ensure maintenance objectives are achieved. Performance metrics are also reviewed with target values for business, system and functional indicators.
- **Continuous R&M Improvement:** Activities to improve reliability performance are reviewed including several techniques for performing failure analysis. When to do and when not to do a failure analysis is discussed.



## *Day 2 – Introduction to Turnaround Best Practices*

This session will introduce proven practices that have been successfully applied in several key turnaround areas. The practices for any one area are a composite of practices that have been successfully used by several refineries and are not those of one individual refinery.

- **Turnaround Management and Philosophy:** This module will review management's responsibility in ensuring that a turnaround is successful. To be effective, Management must establish a Basic Philosophy, Management Principles, and the Overall Objectives for the turnaround. In addition, Management should form a Turnaround Management Committee to guide and support the Turnaround Team.
- **Milestone Plan:** The Milestone Plan provides an overview of strategic activities in the turnaround and is a key document in communicating planning progress. The elements included in a Milestone Plan will be presented and examples of a plan.
- **Work Scope:** Work scope is the process of identifying mechanical, process, engineering and project work that is required to be performed during the turnaround in order to achieve the business objectives. The selection process for identifying work will be discussed including a risk assessment procedure.
- **Cost Management:** Cost management is a key activity to ensure a successful turnaround. The purpose of this section is to outline procedures for developing the turnaround budget and for stewarding against the budget.
- **Turnaround Planning:** Effective planning is one of the critical factors for a successful turnaround. This module will review the key elements of effective turnaround planning, what defines a good work plan, and staffing for doing the planning.
- **Contracting:** The purpose of this section is to outline the procedures for developing contracts for the turnaround. The items discussed are what are included in a contracting strategy, and the different types of contracts that can be used.
- **Execution:** The purpose of this section is to outline the procedures for executing a safe and effective turnaround including supervisor responsibilities and pre-execution documentation.

### Course Duration

2 days