

# Process Plant Start-up and Commissioning

## INTRODUCTION

- Start Up and Commissioning of new plant and equipment presents both a major technical and management challenge. With this in mind, this Process Plant Start-up and Commissioning training course addresses the technical issues of commissioning and starting up various equipment and asset types commonly found in processing plant environments, process and facility wide commissioning strategies as well as the management issues.

This training course addresses in an integrated manner the key activities involved in the safe, effective and timely commissioning and start-up of a new plant or facility. In this programme you will learn about:

- The six key stages of the commissioning process
- How to balance the technical and management challenges of commissioning
- How to deal with machinery and equipment specific commissioning issues
- How to Manage Risks and solve the types of problems likely to occur during commissioning

## PROGRAMME OBJECTIVES

- The objectives of this training course are to provide participants with an awareness of the unique challenges associated with plant start-up and commissioning situations, an understanding of the key concepts, tools and techniques that can be used to facilitate the effective planning, execution, control and management of these situations.
- Participants completing this Process Plant Start-up and Commissioning training course should be able to contribute confidently to the planning and execution of effective strategies for plant commissioning and start-up in their own specific work and process plant situations.

Objectives include building knowledge and understanding of:

- The six key stages of the commissioning process
- How to develop and overall commissioning and plant start-up strategy
- How to deal with machinery and equipment specific commissioning issues
- How to manage issues dealing with the commissioning of Electrical, Instrumentation and Utilities Systems
- How to develop an overall commissioning management plan, resource plan and budget
- How to apply troubleshooting and problem solving strategies to address issues commonly arising during start up and commissioning

## WHO SHOULD ATTEND?

This Process Plant Start-up and Commissioning training course addresses the needs of a diverse audience with an interest in Plant Start-up and Commission, including:

- General Managers who have oversight responsibility for Plant Start-up and Commissioning
- Operations and Maintenance Managers with direct line responsibility as well as staff support responsibility for delivering on effective Plant Start-up and Commissioning
- Plant Start-up and Commissioning Managers and Engineers
- Technical personnel involved in supporting Plant Start-up and Commissioning activities
- Supervisors and Engineers, both operations and maintenance who are involved or likely to be involved in Plant Start-up and Commissioning situations

## TRAINING METHODOLOGY

- Process Plant Start-up and Commissioning is a hands-on, stimulating learning experience.
- This training course will be highly interactive, with opportunities to advance your opinions and ideas. Participation is encouraged in a supportive environment.
- To ensure the concepts introduced during this training course are understood, they will be reinforced through a mix of learning methods, including lecture style presentation, open discussion, case studies, simulations and group work.

## PROGRAMME SUMMARY

- The need for Plant Start Up and Commissioning is ongoing in any business that is growing, as new plant is added to expand capacity and to replace obsolete technology.
- This training course aims to develop employees through exposure to the training and development experience provided by this training course, to build a “cadre” of knowledgeable and skilled staff who will be able to add value through their contributions to any situations involving plant start-up and commissioning.
- They will be able to contribute in leadership or operational roles, both with knowledge and skills to ensure such projects are effectively and efficiently managed in a manner consistent with recognised best practices. A spin off benefit will be their ability to coach and impart learning to their peers and subordinates to the mutual benefit of individuals and organisation.

## PROGRAM OUTLINE

### Introduction and Preparation for Start Up and Commissioning

- Introduction to Process Plant Start Up and Commissioning
- Organisation, Roles and Leadership
- Support Functions
- Cost Estimation
- Spare Parts Planning

## Commissioning Strategy and Process

- Commissioning Strategy
- Commissioning Strategy Case Study
- Mechanical Completion & Integrity Checking
- Pre-commissioning and Operational Testing
- Start-up / Initial Operation, Testing and Acceptance

## Process Plant and Machinery Specific Issues

- Process Plant and Machinery Commissioning
- Instrumentation and Control Systems
- Preparing and Isolating Process Plant

## Project Managing Start-Up / Commissioning Projects

- Work Breakdown Structures
- The Critical Path Method of Planning and Control
- Short-Cut Planning Methods
- Budgeting, Progress and Cost Control
- Earned Value Analysis

## Problem Solving, Risk and Safety Management

- Introduction to Problem Solving and Troubleshooting
- Troubleshooting in Commissioning and Start Up Situations
- Safety and Environment Management
- Managing Risk
- Conclusion