

# **PRESSURE VESSEL INTEGRITY THROUGH DESIGN, OPERATIONS, MAINTENANCE, INSPECTION AND ANALYSIS**



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**TRAINING TITLE**

PRESSURE VESSEL INTEGRITY THROUGH DESIGN, OPERATIONS, MAINTENANCE, INSPECTION AND ANALYSIS

**VENUE**

Dubai, UAE

**DURATION**

5 Days

**DATES**

30 June - 04 July 2019

**PRICE**

US\$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet.

**TRAINING INTRODUCTION**

The aim of this course is to provide the participants with a complete and up-to-date overview of all facets of pressure vessels from concept, design, commissioning and operation, maintenance, periodic inspection, defect evaluation and repair. Upon the successful completion of this course, the participant should have a solid understanding of the design code requirements, operational guidelines to prevent damage, maintenance programs, inspection requirements and recommendations, types of defects and degradation, evaluation of defects and degradation, re-rating, repairs and documentation files. Further, this course will provide Mechanical, Process and Inspection engineers as well as middle management with the framework to maximize their return on investment with a structured pressure vessel integrity program focusing upon safe and economical practices.

**TRAINING OBJECTIVES**

- To provide skills, knowledge and understanding of the pressure vessel life cycle from concept, design, fabrication, operational life, inspection and repair.
- Familiarize participants to the tools and techniques for implementing an economical pressure vessel integrity program
- Operational practices to optimize vessel service life
- Periodic maintenance and inspection programs
- Extend the life of existing pressure vessels

- Minimize unscheduled vessel shut downs and unnecessary repairs
- Vessel re-rating and de-rating
- Present case history examples regarding pressure vessel design, fabrication problems, operational upsets, defects and repairs.

## **TRAINING AUDIENCE**

Mechanical, Process, Plant and Inspection engineers as well as middle management, Supervisors, Superintendents

## **TRAINING OUTLINE**

- Life cycle of a pressure vessel, concept to retirement
- Economic considerations, corrosion, life expectancy, materials
- Operations considerations, isolation, redundancy, process dependency
- Maintenance considerations, periodic inspection, access, internals, repairs
- Failure modes and mechanisms
- ASME / API Code Roadmap
- Design Codes, similarities and differences
- Welds and weld strength
- Horizontal Vessel Design considerations
- External Pressure Design
- Flanged joint problems, causes and solutions
- Fabrication methods and concerns
- Required / recommended inspection and testing
- Heat Exchangers, design, types, TEMA
- API-510, Vessel Inspection Code overview
- Inspector duties
- Fitness For Service Overview
- ASME Section IX, Nuclear and BS-7910 FFS methods
- Finite Element Analysis, theory,
- FEA examples (stress, thermal, creep, yielding)

## **TRAINING CERTIFICATE**

**MAESTRO CONSULTANTS** Certificate of Completion for delegates who attend and complete the training course

## **METHODOLOGY**

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of “real life” issues in their organizations.

The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.