ASME BPV Code, Section VIII, Division 2 Design & Fabrication of Pressure Vessels

Course Description

INTRODUCTION

ASME BPV Code, Section VIII, Division 2 covers the alternative rules for the design and fabrication of pressure vessels. Because of making the rules more exact and refined, the design formulas have become considerably more complicated than most of the older Codes. As designers are increasingly dependent on computer programs for detailed vessel design, it is important for they understand the basis of the design rules to be able to apply them properly.

This Pioneers ASME BPV Code, Section VIII, Division 2 Design & Fabrication of Pressure Vessels training course discusses the major topics related to the construction of pressure vessels. The course will explain the background of the rules to help delegates understand the reason and the basis for them; and discusses the guidelines in the Code for various methods and acceptance criteria. The course covers the basic materials requirements of the Code and the material toughness requirements. This course also covers fabrication and NDE requirements, PWHT, tolerances, weld details, over-pressure testing, pressure relief equipment, documentation and stamping.

Course Objectives

This ASME BPV Code, Section VIII, Division 2 Design & Fabrication of Pressure Vessels training course aims to help delegates to develop the following critical objectives:

- Describe the background of the Code
- Explain and apply the requirements of Division 2
- Explain theories of failure and design margins
- Describe the general design requirements of Division 2
- Identify design rules and stress analysis methods
- Describe fatigue analysis
- Identify materials and describe fabrication requirements
- Explain non-destructive examination (NDE) requirements
- Explain pressure testing and pressure relief requirements

Course Methods

The training course will combine presentations with Instructor-guided interactive discussions between delegates relating to their individual interests. Practical exercises, video material and case studies aiming at stimulating these discussions and providing maximum benefit to the delegates will support the formal presentation sessions.

Above all, the Instructor will make extensive use of case examples of issues in which he has been personally involved.

WHO SHOULD ATTEND?

- **This Pioneers ASME BPV Code, Section VIII, Division 2 Design & Fabrication of Pressure Vessels online training course** is primarily intended for individuals involved with design, analysis, fabrication, purchasing, repair and inspection of pressure vessels. Experienced personnel involved with pressure vessels too will benefit from this training course.

- Though some knowledge of design and fabrication of pressure vessels is desirable, no previous experience is required for attending this training course.

Course Outline

DAY 1

- ***Introduction, General Requirements & Materials Requirements***

- Introduction and general requirements
- Explain theories of failure and design margins
- Materials requirements
- Material toughness requirements
- Design by rule requirements

DAY 2

- ***Describe The General Design Requirements Of Division 2***

- Design for internal pressure
- Design rules for openings
- Design for internal pressure
- Design for external pressure and buckling
- Design rules for openings

Course Outline

DAY 3

➢ ***Design by Analysis Requirements***

- Design by analysis requirements
- Design by rule requirements
- Describe fatigue analysis
- Fabrication requirements

DAY 4

➢ ***Inspection & Examination Requirements***

- Non-Destructive examination (NDE) requirements
- Inspection and examination requirements
- Data reports and stamping
- Pressure testing and over-pressure protection requirements

DAY 5

➢ ***Protection Against Failure from Cyclic Loading: Fatigue***

- Screening for exemption from fatigue analysis
- Elastic fatigue analysis
- Elastic-plastic fatigue analysis