Best Technology Solutions (BTS)

Boiler & Pressure Vessel Design& Fabrication of Pressure Vessels (ASME Section VIII) Training program

Introduction:

Based on the rules for pressure vessel design and construction, this course is a comprehensive introduction to the requirements of Section VIII, Division 1 including background, organization, design, materials, fabrication, inspection, testing and documentation of pressure vessels. The more commonly used subsections and paragraphs will be covered, and a discussion of individual problems or situations will be included. This course is intended for beginners, as well as experienced vessel designers who would like to update their knowledge of the Code.

Who Should Attend?

Individuals involved with the purchase, design, fabrication, or inspection of pressure vessels. Some degree of technical background will be helpful, but such individuals are not required to have an Engineering degree or previous work experience in the subject matter.

Course Objectives:

By the end of this course delegates will be able to:

- Understand the background of the Code rules
- Apply the Code rules to more common design and fabrication situations
- Perform calculations for some of the loadings and situations not addresses by the Code
- Prepare design specifications, design reports, Data Reports, and other documentation

Course Outline:

- Code rules, scope and jurisdiction
- General requirements related to materials and testing
- Material toughness and impact testing requirements
- Joint categories and joint efficiencies
- General requirements related to stamping, reports, testing, PWHT, tolerances, and NDEs
- Welding requirements
- Committees, operation and voting procedures
- Editions, addenda and interpretations
- Design Requirements
- Design loadings and allowable stresses
- Design criteria and strength theory for Division 1
- Formulas for internal pressure and tensile loading
- Procedures for external pressure (vacuum) and compressive loads
- Openings and reinforcement
- Hydrostatic and pneumatic testing
- Background of the design rules
- Example design problems and solutions
- cylindrical shells and formed heads
- Seismic loading on vertical vessels
- nozzle reinforcements
- other special components
- External pressure and stiffening rings
- Reinforced openings and ligament efficiency
- Open discussion of design problems