



## **PD770**

### **Inspection, Repairs, and Alterations of Boilers**

#### **Day 1**

- Module 1: Introduction to course
  - Inservice inspection Codes and Standards (ASME, NBIC, API)
  - Jurisdictional requirements
  - Classification of boilers – power boilers, heating boilers
  - Watertube boilers, HRSG, firetube boilers,
- Module 2: National Board Inspection Code (NBIC)
  - Introduction to NBIC,
  - National Board stamps (R, VR), and markings
  - Inspector 's qualifications
  - Owner-user inspection organization
- Module 3: Installation
  - General requirements
  - Power boilers
  - Heating boilers
  - Pressure relief devices, and piping
  - Installation inspection, and documentation
- Module 4: Inspection
  - Inspection requirements
  - Examinations, test methods, and evaluations
  - Power boilers
  - Heating boilers
  - Specific types of boilers
  - Pressure relief devices, and piping
  - Inspector's calculations
  - Stamping, documentation, and forms

#### **Day 2**

- Module 5: Outage Inspection
  - Walkdown inspection
  - Boiler major components (Drums, superheaters, economizers, etc.)
  - Boiler auxiliary equipment (Blowdown tank, condenser, cooling tower, etc.)
  - Heat Recovery Steam Generators



- Module 6: Boiler Tube Failure
  - Introduction
  - Tube failure mechanism
  - Water-touched tubes
  - Steam touched tubes
  
- Module 7: Boiler Mechanical Reliability
  - Reliability program
  - Deterioration mechanism
  - Boiler on-stream inspection
  - Inspection of foundations, setting, and appurtenances
  - Inspection checklists
  
- Module 8: Repairs and Alterations
  - General requirements
  - Repair and alteration methods
  - Welding and heat treatment
  - Repair and alteration calculations
  - Examination, testing, and inspection
  - Stamping, documentation, and forms