GE Power
Power Services

Boiler – (Part 1 of 4) Inspection Fundamentals

Course Outline – Open Enrollment

Course Description

This Boiler Inspection course is designed to benefit personnel recently assigned to the task of maintaining the boiler and its auxiliaries. Emphasis is on common points for all boiler inspections.

The lessons focus on the following systems and equipment:

- Large coal, oil or gas-fired boilers
- Modern industrial boilers with gas-tight furnaces and super-heater assemblies
- Circulating Fluidized Bed Boilers
- Heat Recovery Steam Generators

This course begins with boiler design variations, based on application and fuel. Topics then focus on steel selection, water treatment and steam quality. The central theme in this session is pressure part failure mechanisms, causes and prevention.

Information covered can be applied to coal, oil, gas, and waste-fired boilers – industrial or utility.

Duration

2 Days

Target Audience

- Supervisors
- Operations
- Mechanical Maintenance

Prerequisites

- Instruction is given in English; therefore, a reasonable ability to read and understand spoken English is required

Class Size

Maximum number of students: 18

Learning Objectives

This course will provide basic knowledge on the following:

- Most common stresses that limit boiler component life
- Causes for multiple points of stress that can rapidly diminish pressure part reliability (fuel, water quality, material selection, operator error, past maintenance practices)
- Critical inspection points common to different boiler designs that are unique to a variety of fossil fuels
- Prioritization of planning activities to maximize plant equipment reliability

Course Content

INTRODUCTION

A. Instructor Background
B. Participant Background
C. Course Schedule

LESSONS

A. Steam Generator Design Principles
B. Fossil Fuel Combustion Concerns as well as Ash and Slag Issues
C. Causes of Boiler Tubing Deterioration
D. External Fossil Fuel Corrosion of Boiler Pressure Part Tubing
E. Internal Boiler Water Corrosion of Pressure Part Tubing
F. Heat Recovery Steam Generator (HRSG) Technology Versus Standard Fossil Fuel Boilers
G. Boiler and Power Plant Environmental Concerns
H. Operations and Maintenance Demands

Revisions

REVISION	DETAILS	PERFORMED BY	DATE
0	Document created	H Chandler	11/07/17