

Power Plants Steam Generator Training Course

1. Boilers Related Physics Basics:

- Heat transfer basics
- Basics of water circulation in vessels
- Conversion of water to steam
- Fuels combustion

2. Boiler Main Internal Systems:

- Boiler design parameters
- Boiler water and steam circuit
- Air and flue gas circuit

3. Fuel Firing Systems:

- Front and Rear Firing
- Tangential firing
- IFM ignitors
- Oil guns
- Tilting of burners
- Flame scanners
- Fuel oil and atomizing steam system

4. Boiler Auxiliary Equipments:

- Air and Gas Fans (FD, ID & GR)
- Rotary air heater
- Steam air heater
- Forced water circulation pumps
- Sootblowers
- Safety valves and ERV

5. Steam Generator Control System:

- Boiler Control System and Instrumentation
- Burner Management System (BMS) Function
- BMS Logic Examples
- Boiler Process Control Fundamentals
- Boiler Process Control Logic Examples

6. BOILER OPERATING INSTRUCTION:

- Preparing For Operation
- Start Up From Cold
- Normal Operation
- Normal Shutdown
- Warm Restart
- Hot Restart

7. TROUBLESHOOTING BOILER OPERATION

- Operating Procedure in Normal and Abnormal Conditions
- Causes of Boiler trips and Actions To Be Taken
- Boiler Shortage of Water
- Boiler Excess of Water
- Tube Failures (Punctures)

8. BOILER WATER SURVEY

- Water Chemistry in Boilers
- Pre-boiler System
- Boiler Water and Steam System
- Feedwater Treatment Principles
- Boiler Chemical Cleaning
- Boiler Water Deposits and Control of Steam Purity
- Boiler Outage Water Chemistry & Procedures

9. COMMISSIONING PRINCIPLES

- Defining Commissioning Scope
- Organizing the commissioning sequence of activities
- The use of check-off sheets to assure proper commissioning.