Combustion Control System Training

Description

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The course covers the fundamentals of boilers, utility power plants cycles, and combustion. This is followed by a brief tutorial on control theory, then a detailed discussion of combustion control, feedwater control and steam temperature control. The course is ideal for someone involved in all control equipments related to power plant controls, or as a refresher for experienced personnel.

Course Objectives

This course provides basic knowledge of combustion fundamentals including the burning of fossil fuels, municipal incineration, the burning of solid wastes and catalytic incineration as well as NOx and SOx emission control systems.

The partcipants successfully completing this course will understand combustion principles and the design parameters influencing the achievement of combustion efficiency. The students will be able to evaluate combustion design as typically contained in permit applications.

Evaluation is for the purpose of judging whether a proposed design will meet regulatory standards. The course emphasizes problem sessions in which students make the basic calculations involved in checking a combustion system design. A scientific calculator is required for these exercises.

Course Outlines

- Review of basic concepts (Physics, Chemistry & Thermodynamics).
- Combustion fundamentals.
- Fuel properties.
- Formation of air pollutants in the combustion process.
- Pollution emission calculation and F-Factor method.
- Thermal and catalytic incinerations.
- NOx/SOx control equipment.
- Standard Product Line – Applications, Components, Diagnostics, BMS, Combustion Management, Servo Motors, Field Sensors, Start Up, Option Parameters, Fuel profiles, light off

programming.

- Expanded Product Line – Applications, Components, Diagnostics, O2 Trim, Variable Speed, Analogue I/O, Lead Lag, Start Up, Option Parameters, Fuel profiles, Alarm Functions.
- O2 Trim System – Application, Installation, Day to Day, Advantages
- Communications Software – ComFire Software, Installation, Plant Monitoring, trending, Logging, Alarm functions
- Sales Information – Pricing and Selection, Attractive Features, Customer Benefits, Fuel Savings.

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