



Training Course :

Boiler Control & Burner Management Systems

Training Course For One Week In

Jordan , Amman , The Boulevard
Arjaan by Rotana

Which Be Held As Under Details :



Abar Solutions Petroleum Consultancy Invite Your Employee To Participate With Us In Special Training Course As Under Details :

Course Name		Boiler Control & Burner Management Systems			
Code	Period	Language	Start	End	Location
ICT 003	5 Days	Bilingual (Arabic & English)	13/08/2017	17/08/2017	Jordan , Amman , The Boulevard Arjaan by Rotana
			03/09/2017	07/09/2017	
			08/10/2017	12/10/2017	
			12/11/2017	16/11/2017	
			10/12/2017	14/12/2017	
			14/01/2018	18/01/2018	
			11/02/2018	15/02/2018	
			11/03/2018	15/03/2018	
			15/04/2018	19/04/2018	
			20/05/2018	24/05/2018	
			10/06/2018	14/06/2018	
22/07/2018	26/07/2018				
** The Fees Includes : Lecturer , Training Material , Training Room With One Coffee Break Daily , Certificate Of Attendance In Last Day Training Course **					

Course Description

⇒ The boiler components and their purpose. Standard symbols that are used in boiler control and identifying the engineering and control of boilers using the symbols and a method of presenting the engineering. The course includes defining the control and ratio control fundamentals feed forward control, feed forward plus feed back control, cascade control and ratio control and how they are implemented in boiler control. Also reviewed are control concepts proportional controls, proportional plus reset control, and

proportional plus reset, plus derivative controlling what they are and how they are used.

Flame detection methods are covered including the advantages of each method.

⇒ Systems for the safe start-up, monitoring, and shut-down of multiple burner boiler furnaces are covered in detail. Causes of furnace explosions and ways of avoiding them are discussed. The relationship of burner management systems and boiler control systems is explained. An understanding of boilers and boiler control is assumed.

Course Objectives

⇒ **Participant will be able to:**

- Understand the benefits of improved boiler process control and savings as a result of improved efficiency
- Develop proper control systems documentation
- Apply principles and methods for flow and level measurements to improved boiler operations
- Specify appropriate strategies for flow, level and pressure control
- Tuning of boiler control systems
- Implement analyzer measurements for improving boiler efficiency
- Analyze basic control loops required for boiler operation
- Apply control concepts such as cascade, ratio and feedforward control for boiler control
- Specify appropriate safety system interlocks
- Evaluate process requirements for writing instrumentation specifications
- Understand the primary cause of furnace explosions
- Use design basis documentation and flow sheets
- Identify equipment needs for gas, oil, and pulverized coal systems
- Understand pre-firing purge requirements for both single and multiple burner boilers
- Follow the ignition-permissive establishment procedures for single and multiple burner systems

- Implement flame failure protection for specific systems
- Design alarms, interlocks, and emergency shutdown systems
- Understand the function and use of the burner front, operator interfaces, and logic systems

Course Content & Outlines

- ⇒ **Basic Control Loops**
- ⇒ **Combustion of Fuels**
- ⇒ **Fuel Gas Analysis**
- ⇒ **Steam Supply and Firing Rate Demand**
- ⇒ **Feedwater Control Systems**
- ⇒ **Boiler Draft Systems**
- ⇒ **Combustion Control**
- ⇒ **Improving Operations with Computers and Analyzers**
- ⇒ **Emerging Technologies**
- ⇒ **Causes of Furnace Explosions**
- ⇒ **BMS Interlock and Alarm Systems**
- ⇒ **Control Systems**
- ⇒ **System Design Trip Philosophy**
- ⇒ **Programmable Electronic Systems**
- ⇒ **Develop P&IDs for the boiler and gas, oil, and pulverized coal**
- ⇒ **Review methods of efficiency calculations**
- ⇒ **Use personal computer software to simulate boiler start-up and shutdown, and boiler control including drum level and cross-limiting fuel control**
- ⇒ **Tune a boiler control system for maximum efficiency and learn the effects of boiler tuning**