MERCURY

Boiler & Steam System Management in the Oil & Gas Industry

22 - 26 Nov 2026
Manama (Bahrain)

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Boiler & Steam System Management in the Oil & Gas Industry

Ref.: 15381_306034 **Date:** 22 - 26 Nov 2026 **Location:** Manama (Bahrain) **Fees:** 5500 **Euro**

Introduction:

This oil and gas boiler and steam system management course intends to introduce delegates to the operation of boiler units and the associated equipment for steam generation and distribution. The combustion process of various types of fuels in the boiler furnace will be thoroughly discussed, and the efficiency of combustion equipment will be analyzed. Methods and techniques of energy saving and optimization related to efficient steam distribution system management will be explained in detail.

The oil and gas boiler and steam system management course will focus on practical aspects of operation, control, maintenance, and troubleshooting problems encountered in boiler systems. The material, with workshop examples from real-life industrial practice, will include guidelines for improving the reliability of boiler units and efficient management of the entire steam system.

This oil and gas boiler and steam system management course delves into the operational aspects of boilers and steam systems within the Oil and gas industry, emphasizing practical knowledge and troubleshooting. It focuses on steam management systems and boiler management and is tailored for professionals involved in boiler oil and gas, ensuring safe, efficient, and reliable boiler and steam generation.

Targeted Competencies:

At the end of this oil and gas boiler and steam system management training, the target competencies will:

- Analyze the guidelines for safe and reliable boiler plant operation and steam distribution systems.
- Review and discuss elements for improving boiler performance and overall efficiency of the entire steam generation system.
- Compare and contrast optimal improvement techniques for a given industrial application.
- Estimate the degree of deterioration and inefficiency of the boiler system due to corrosion and fouling and how to remedy the situation by altering or modifying it.
- Identify and analyze the problems in everyday operations and find the most economical solution based on the best practices.

Targeted Groups:

- Boiler plant engineers, technicians, and operators from chemical, petrochemical, and process industries, oil refineries, gas production, and power generation.
- Project engineers and boiler operation supervisors and managers.
- Personnel dealing with boiler and steam system control and maintenance.
- Engineers involved in boiler plant and steam system optimization.
- Operation and technical service engineers.
- Plant engineers and technicians dealing with steam systems maintenance and repair.
- Product engineers, corrosion-erosion technologists, and maintenance coordinators.

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Course Objectives:

By the end of this oil and gas boiler and steam system management course, participants will be able to:

- Improve knowledge of practices for thermal efficiency enhancement used in today's industrial boilers and steam generators.
- Better understanding of combustion techniques and fuel handling as employed for the given application, considering specific steam demands and environmental standards.
- Experience with complex analysis involving waste heat recovery techniques and cogeneration processes.
- Familiarize themselves with boiler feedwater treatment and the condensate recovery treatment.
- Recognize the importance of properly maintaining all vital elements of the boiler plant, considering structural integrity and reliability.

Course Content:

Unit 1: Overview of Boilers and Steam Generation Systems:

- Boilers and steam generators are used in the chemical and petrochemical industry.
- Classification of industrial steam boilers.
- Main components of industrial boilers.
- Principles of steam generation in boiler plants.
- World standards related to steam boilers.
- Thermal and mechanical aspects of boiler design and construction.
- Air, fuel, water, and steam train in boiler components.
- Thermodynamic characteristics of steam and steam quality.

Unit 2: Process of Combustion of Fuels in Boiler Furnace:

- Technical characteristics of fuels used for combustion in boilers.
- Combustion process in boiler furnaces.
- Burner design and air-fuel mixing process.
- Efficiency of combustion and heat transfer optimization.
- Products of combustion: NOx and SOx.
- Environmental standards.
- Heat recovery boilers and flue gas utilization.
- Feed water preparation and chemical treatment standards.

Unit 3: Boiler Operation and Control Systems:

- Components of the boiler master control system.
- Advanced boiler instrumentation.
- Boiler safety system.
- Boiler operation range and load variation.
- Fuel control and burner management system.
- Combustion control system.
- Drum level control.
- Casing and insulation heat loss control.

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Unit 4: Steam System Management:

- Boiler plant efficiency monitoring.
- Blowdown control and recovery.
- Steam trap operation optimization.
- Condensate recovery treatment.
- Reducing declaration losses.
- Air venting of condensers.
- Steam throttling and selection of valves.
- Scale and corrosion control.

Unit 5: Boiler Maintenance and Troubleshooting:

- Boiler and steam system performance testing.
- Inspection of most critical parts.
- NDT and stress measurements.
- Scope of regular maintenance.
- Guidelines for boiler starting and stopping.
- Boiler failure prevention.
- Troubleshooting tips and guidelines.

Conclusion:

This oil and gas boiler and steam system management course aims to educate participants about the oil and gas industry, help them understand the management of boiler and steam systems, and prepare them to become professionals in ensuring safe, efficient, and reliable boiler and steam generation.

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Registration form on the :
Boiler & Steam System Management in the Oil & Gas Industry

code: 15381 **From:** 22 - 26 Nov 2026 **Venue:** Manama (Bahrain) **Fees:** 5500 **Euro**

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