

€ TRAINING

Power Plant Water Treatment Systems



1 - 5 December 2024
Cairo (Egypt)



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REF: S933 DATE: 1 - 5 December 2024 Venue: Cairo (Egypt) - Fee: 4095 Euro

Introduction:

This training program is a comprehensive educational initiative aimed to equip professionals with the knowledge and skills necessary to effectively manage water quality within power generation facilities. It is designed to ensure optimal operation of power plant water systems.

Program Objectives:

At the end of this program, participants will be able to:

- Understand the fundamentals of water treatment and its significance in power plant operations.
- Identify common contaminants in boiler feedwater and cooling water systems, and implement appropriate treatment strategies.
- Design, operate, and maintain effective water treatment systems for power plant applications.
- Ensure compliance with regulatory requirements related to water quality, wastewater discharge, and environmental protection.
- Implement water conservation and sustainability practices to optimize water usage and minimize environmental impact in power plant operations.

Targeted Audience:

- Project managers.
- Water treatment engineers/Plant engineers.
- Maintenance personnel in the process industries.
- Regulatory authorities hygiene and health & safety inspectors.
- Facility management companies personnel.
- Maintenance personnel in the hotel and catering industry.

Program Outlines:

Unit 1:

Fundamentals of Water Treatment:

- Introduction to water treatment in power plants.
- Understanding the importance of water quality in power generation.
- Overview of common water sources and their characteristics.
- Principles of water treatment processes such as filtration, sedimentation, and disinfection.
- Case studies highlighting the significance of effective water treatment in power plant operations.

Unit 2:

Boiler Feedwater Treatment:

- Importance of boiler feedwater quality for steam generation.
- Common contaminants in boiler feedwater and their impacts on boiler performance.
- Water treatment strategies for minimizing corrosion, scaling, and fouling in boilers.
- Overview of pretreatment processes such as softening, demineralization, and deaeration.
- Monitoring and control techniques for ensuring optimal boiler feedwater quality.

Unit 3:

Cooling Water Treatment:

- Role of cooling water systems in power plant operations.
- Understanding the challenges associated with cooling water treatment, including fouling and biofouling.
- Overview of cooling water treatment technologies such as chemical treatment, filtration, and biocides.
- Strategies for preventing corrosion and scaling in cooling water systems.
- Best practices for monitoring and optimizing cooling water treatment performance.

Unit 4:

Wastewater Treatment and Discharge:

- Overview of wastewater generation in power plants and regulatory requirements for discharge.
- Treatment options for removing contaminants from plant wastewater, including suspended solids, heavy metals, and organic compounds.
- Design and operation of wastewater treatment systems such as sedimentation basins, clarifiers, and biological reactors.

- Compliance monitoring and reporting procedures for wastewater discharge permits.
- Case studies illustrating successful wastewater treatment and discharge management practices in power plants.

Unit 5:

Water Conservation and Sustainability:

- Importance of water conservation and sustainability in power plant operations.
- Strategies for reducing water consumption and optimizing water use efficiency.
- Implementation of water reuse and recycling initiatives within power plant facilities.
- Integration of water management practices with overall sustainability goals and objectives.
- Training and awareness programs for promoting a culture of water stewardship among power plant staff.