

€ TRAINING

Combined Cycle and Cogeneration Plant Modelling





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Introduction:

This training program offers participants a comprehensive understanding of the modelling and simulation techniques used in combined cycle and cogeneration plants. It empowers them to improve operational decision-making and achieve greater energy efficiency.

Program Objectives:

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

- Understand the principles and operation of combined cycle and cogeneration plants.
- Learn techniques for modelling and simulating plant performance.
- Develop skills in optimizing plant efficiency and reliability.
- Gain insights into the use of software tools for plant modelling.
- Enhance capabilities in analyzing and interpreting simulation results.

Targeted Audience:

- Plant Engineers.
- Process Engineers.
- Operations Managers.
- Energy Analysts.
- Maintenance Technicians.
- Engineering Consultants.

Program Outline:

Unit 1:

Fundamentals of Combined Cycle and Cogeneration Plants:

- Overview of combined cycle and cogeneration plant concepts and configurations.
- Understanding the thermodynamic cycles involved in plant operation.

- Key components and their functions in combined cycle and cogeneration plants.
- Efficiency and performance metrics for plant evaluation.
- Case studies on different types of combined cycle and cogeneration plants.

Unit 2:

Modelling Techniques for Plant Performance:

- Introduction to modelling and simulation principles.
- Techniques for creating accurate models of plant systems.
- Selecting appropriate modelling tools and software.
- Input data requirements and validation of models.
- Exercises on developing basic plant models.

Unit 3:

Simulation of Plant Operations:

- Setting up and running simulations for plant operation scenarios.
- Analyzing the impact of different operating conditions on plant performance.
- Using simulation results to identify performance bottlenecks.
- Techniques for dynamic simulation and transient analysis.

Unit 4:

Optimization of Plant Efficiency:

- Methods for optimizing plant performance and efficiency.
- Identifying and implementing energy-saving measures.
- Techniques for enhancing the reliability and availability of plant operations.
- Using optimization algorithms and tools.
- Real-world examples of successful plant optimization projects.

Unit 5:

Interpretation and Application of Simulation Results:

- Techniques for analyzing and interpreting simulation data.
- Developing actionable insights from simulation results.
- Communicating findings and recommendations to stakeholders.
- Step for implementing changes based on simulation outcomes.
- Case studies on the application of simulation results in plant operations.