



Panel Operator Certification





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Introduction:

This training program is designed to equip participants with the essential skills and knowledge required to excel as certified panel operators in industrial settings. Successful completion of the program grants participants the coveted Panel Operator Certification exam, validating their proficiency in operating control panels and overseeing plant operations.

Program Objectives:

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

- Communicate and work effectively with shift colleagues.
- Explain in detail the processes using various documents PFDs, P&IDs, control schemes, logic diagrams.
- Identify risks related to equipment operation and process; to enforce adequate preventive actions.
- Adjust the plant process parameters to optimize production rate, product quality and operating costs, minimize losses and releases.
- Analyze the process key parameters to determine disturbance causes, and take appropriate corrective and preventive actions.
- Prepare, start, and shut down a unit in safe conditions.
- Prepare for the exam.

Target Audience:

- Aspiring panel operators seeking to enhance their skills.
- Current panel operators aiming to refine their expertise.
- Industrial personnel responsible for plant operations and optimization.

Program Outlines:

Unit 1:

Introduction & Operator Responsibilities:

- Welcome and safety procedures introduction.
- Distribution of Personal Protective Equipment PPE.
- Overview of panel operator role within the operation team.
- Introduction to plant documentation and inventory.
- Understanding basic industrial chemistry principles.
- Study of fluid mechanics and heat exchange mechanisms.

Unit 2:

Process Control & Automation Fundamentals:

- Fundamentals of process control loops and control valves.
- Introduction to sensors, transmitters, and controllers.
- Overview of Distributed Control System DCS architecture.
- Study of automation systems including safety instrumented systems and PLCs.
- Simulation exercises on valve characteristic curves and PID tuning.
- Understanding safety logic and cause & effect matrix.

Unit 3:

Equipment Operation & Utilities:

- Operation principles and monitoring of pumps, compressors, and drivers.
- Understanding thermal equipment such as heat exchangers, air coolers, and furnaces.
- Overview of specific equipment relevant to assigned units.
- Study of utilities including flare systems, air production, and effluent treatment.
- Simulation exercises on operation, troubleshooting, and start-up procedures.
- Examination of start-up and shutdown procedures for various process units.

Unit 4:

Product Quality & Process Management:

- Analysis of feed and product properties.
- Understanding commercial product quality requirements and standard tests.
- Study of process units, material balance, and main operating parameters.
- Exploration of distillation, absorption, and stripping processes.
- Overview of mixing rules and influence of operating parameters.
- Simulation exercises on process unit operation and control.

Unit 5:

Safe Plant Operation & Emergency Management:

- Training on panel operator safe behavior and communication protocols.
- Overview of HSE Health, Safety, and Environment practices in operation.
- Examination of routine operations, permits to work, and special operations.
- Practice of integrated plant operation including crisis management.
- Preparation of the exam.