Power Plant Operations and Process Controls

Course Code: EPG11

COURSE OBJECTIVES

Upon completion of this course, participants will be able to:

- Manage standard power plant operations to ensure the efficient generation of reliable and stable electricity in accordance to standard operating procedures and organisational requirements
- Perform standard process control and monitoring in power generation plants to drive operational efficiency

MAIN CONTENTS

- Functions of Simulator System
  - Simulator system and HMIs
  - Simulator model overview and process pages
  - Critical process parameters
- Power Plant Fundamentals and Operation Process
  - Power plant layout, design and processes
  - Power plant fluid mechanics and thermodynamics
  - Power plant power generation methods
  - Types of fuel for power plant
  - Power plant performance monitoring, efficiency curves, quality, safety and pollution
  - Kraftwerk Kennzeichen System (KKS) System
- DCS Principles, Functions & Design
  - Basic overview of DCS
  - Piping & Instrumentation Diagram (P&ID)
    - Field instrumentation on Gas Turbine, Steam Turbine, Heat Recovery Steam Generator & Balance of Plant
  - Single Line & Wiring Diagrams
  - Process control configurations
    - Proportional Integral Derivative (PID)
  - Controller configuration
    - Gas Turbine, Steam Turbine & Plant controllers
  - Function block configuration
  - Equipment interlocks and permissive
- Plant Logic and sequences of process control
  - Logic gates
  - Digital and analogue input/output
  - Routine process control procedures
  - Operational knowledge and practices of major equipment
- Standard Plant Operating Procedures
  - Pumps Start/Stop Procedures
  - Fans Start/Stop Procedures
  - Valves Start/Stop Procedures
  - Blowers Start/Stop Procedures
  - Pump changeover Procedures
  - Equipment & Isolation procedures
  - Shift handover and takeover procedures
  - Technical report

- Alarm Sequence Display and Priorities
- Standardised and Systematic Approach to Handle Alarms
    - Power plant equipment operational indicators and data interpretation
- Alarm Handling Procedures

METHODOLOGY

Lecture and hands-on Simulator Training

TARGET AUDIENCE

Engineering and technical staff working in the power generation industry

COURSE DETAILS

Duration	:	35 hours
Mode of Delivery	:	Face-to-Face
Certification	:	SIPG Certificate of Completion
Additional Requirement/s	:	NIL

COURSE FEES

Full Course Fee	:	S$3,500 (before GST)
For Singapore Citizens/PR/LTVP+*	:	S$1,050 (before GST)
For Singapore Citizens (40 years old and above)	:	S$350 (before GST)

ADDITIONAL REMARKS

- Trainee must attain at least 75% attendance rate and pass the assessment to receive Certificate of Completion and funding grant (if applicable).
- Subsidy of up to 70% is applicable for Singapore Citizens, Permanent Residents or Long-Term Visitor Pass Plus (LTVP+) Holders, subject to funding agency's approval.
- Enhanced subsidy of up to 90% is applicable for Singapore Citizens aged 40 years and above, subject to funding agency's approval. Note that GST payable will be computed from fee after 70% funding.
- Professional Development Unit (PDU) is applicable for Professional Engineers registered under the Professional Engineers (PE) Board only.
- All published fees are subject to prevailing GST.

CONTACT US

For more information, please contact SIPG at +65 6916 7930 or email training-institute@spgroup.com.sg.

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