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Ingenuity for life

Power Generation Services

Siemens Power Academy – K-T3PCPG Module 1
SPPA-T3000 Introduction to Process Control

Introduction

This course outlines the overall concepts of process control for the power generation industry. Specific focus is given to thermal power generation process and application of the Siemens Power Plant Automation T3000 Control System. Hands-on examples and simulated demonstrations are given.

Course Content

Some out of class study may be assigned. All required instructional materials are provided to each student. The following topics are representative of those covered in the course. Actual course content will be customized to the specific customer requirements and plant configuration.

Introduction to Generic Process Control

- Industrial process: **types** and **uses** (batch/continuous, manufacturing, processing, chemical, power generation). Concept of process control and automation.
- **Documentation:** Piping & Instrumentation Diagrams (P&IDs), electrical schematics and drawings, hydraulic schematics and mechanical arrangement drawings, loop diagrams, functional descriptions, functional logic block diagrams, Human Machine Interface graphics (HMIs) and trends. Operating Manuals and Procedures.

- Basic operation and use of **Field Devices:** switchgear breakers, actuators, analog transmitters, binary switches.
- Fundamental concepts for **Commonly Used Equipment:** pump and fan sizing and performance curves, valve sizing types and characteristics, power plant measurement technology (pressure, temperature, flow, level).
- **Layers of design, protection and control** for devices: mechanical design & interlocks, hardware interlocks, drive level protection and interlocking, remote/local and auto/manual modes.
- Basic **Modulating Control Concepts** (Field drive controllers / master controllers, Set-point Control Station, control loop auto/manual modes and bump-less transfer).
- Classical Control Design with simple **PID** (Proportional / Integral / Derivative) controllers.

Course Details

Location: Siemens Training Office / Customer Site

Size: Max 6 Participants

Duration: 2 days

Contact:

PSCD Training Centre
Siemens Ltd. Australia

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