

GE EHC MK II Turbine Controls

This seven-day course provides a component-level study of the system's control circuits with demonstrations of control system response using a MK II EHC table-top simulator. This simulator uses meters to display the processing of input signals by the control system, and makes available to the student the controls and indications normally available to an operator, including turbine load set, pressure set, bypass valve jack load limiter, turbine warming controls, and valve response.

I. EHC System Overview

- EHC System Block Diagram
- Control Panel
- Operating Panel
- Test Panel

- Speed Control References
- Speed Control Logic
- Speed Matcher
- Auxiliary Speed Unit

II. Turbine Control Hydraulics

- Main Turbine Control Oil System
- Emergency Governor
- Backup Overspeed Trip
- Thrust Bearing Wear Detector
- Fluid Actuation System and Fluid Jet System
- Main Stop Valves
- Control Valves
- Combined Reheat Valves

III. Trip and Monitoring

- Fundamental Trip Circuits
- 24 Volt Trip Bus
- 125 Volt Trip Bus
- Trip Test Circuits
- First Hit Detection
- Electrical Malfunction Indication

IV. Speed Control

- Speed Control Unit Description
- Speed Sensors
- Frequency to Voltage converters
- Low Value Gate

V. Load Control

- Load Control Description
- Stage Pressure Sensor
- Main Steam Pressure with Limiter
- Load Set Circuit
- Load Limit and Load Set Runback Circuit
- Loading Rate and Load Set Limits Circuit
- Control Valve Amplifier
- Main Stop Valve Amplifier
- Intercept Valve Amplifier
- Motor Position Indicator
- Load Control Unit Logic
- Basic Operation
- Stage Pressure Feedback
- Chest/Rotor Shell Warming
- Loading Rates and Load Set Limit Logic
- Load Limit Positioning Circuit
- Load/Pressure Limit Logic
- Load Set Positioning Circuit with Load Limit Runback
- Motor Drive Circuit
- Control Valve Test Bias Circuit

VI. Flow Control

- Operation
- Control Valve Position Units
- Electronic Circuitry
- Main Stop Valve Position Unit
- Intercept Valve Position Units
- Reheat Stop Valves
- Valve Logic
- Circuitry
- Testing Procedures

VII. Miscellaneous Circuits

- Standby Control System
- Power/Load Unbalance Circuit
- Early Valve Actuation Circuit