

Factory Training

Focus Class: Digital PLC Governor Three-Day Intensive Training Workshop

FOCUS CLASSES OFFER:

Advanced Training
on specific
governor type

Smaller Class Sizes

More Hands-on Time



In response to customer requests for smaller factory training classes that concentrate on a single governor type, we are pleased to offer a Focus Class on the Digital Programmable Logic Controller (PLC) Governor. Digital governor systems based on non-proprietary PLC systems are becoming common in hydro, and this three-day intensive workshop will enhance your knowledge of this governor type. The Digital class features more hands-on time and less classroom time, so this is ideal for governor technicians who are responsible for maintaining governors.

Our trainers have many years of experience designing, programming, tuning and commissioning digital governors, and our Training and Repair Center features a PLC Governor Test System with electrohydraulic valve manifolds, speed and position feedback devices, and a Turbine Simulator to model unit response. Real-world problems will be introduced into the governor, and attendees will be challenged as a group to find and correct them.

These intensive troubleshooting sessions, combined with smaller class size, are what make Focus Classes so effective as a training tool for your technicians. Attendees will be paired up to work on one of our many digital governor simulators. Participants will utilize PLC and HMI programming software to learn how to calibrate the gate driver control loop, how to tune the PID (proportional – integral – derivative) gains, the effects of droop in speed and load control, and test various modes of operation (e.g. Startup, Online Speed Control, Online Megawatt Control, Tripped, et cetera). The instructor will work with each team individually to ensure complete understanding of the core digital governor features.

Typical Class Outline

1. Introduction To Governors (Governor 101)
 - A. Governor Terminology
 - B. Dynamics of the Turbine and the Effects on the Governor
2. Governor Operation with Droop
3. Governor Operation Connected to the Grid
4. Governor Theory: Digital vs. Mechanical
5. Governor Calibration and Tuning
6. Troubleshooting Techniques
7. Governor Maintenance
8. Hands-On Sessions
 - A. Individual Digital Governor Simulator Stations
 - B. PLC and HMI Programming Concepts
 - C. Tuning and Governor Operation Concepts
 - D. Clear understanding of droop
 - E. Demonstration of "Bumpless Transfers"
 - F. Troubleshooting
9. Governor Oil Pressure Systems
10. Question & Answer Sessions

Class size will be limited to 30 people to maximize transfer of knowledge. Please register early to avoid disappointment. Register online or download a registration form at www.americangovernor.com. Completed forms can be emailed to school@americangovernor.com. Please call 215-354-1144 with any questions.

Class will be held at our Ivyland Facility. Lodging available in Warminster, PA. Transportation not provided.

Questions? Call your nearest Regional Office.

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