

Digital PLC Governor Focus Workshop

Intensive Hands-On Factory Training



In response to customer requests for smaller factory training classes that concentrate on a single governor type, Emerson offers a workshop focused 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.

Focus workshops, featuring more hands-on time and less classroom time, are ideal for governor technicians who are responsible for tuning, adjusting and troubleshooting governors.

Our trainers have decades of experience building, calibrating and repairing Woodward governors, oil systems and auxiliaries. Emerson's hydro training and repair center features working examples of the equipment, components and tools included in the workshop. Our dashpot lab provides participants individualized hands-on training in the maintenance and adjustment of this key component. Real-world problems are introduced into the governor, and attendees will be challenged as a group to find and correct them.

Intensive troubleshooting sessions, combined with smaller class size, are what make focus workshops so effective as a training tool for your maintenance crew.

Focus workshops offer:

- Advanced training on specific governor type
- Smaller class sizes
- More hands-on time

The digital PLC governor focus workshop provides in-depth hands-on training on the following topics:

- Digital PLC governor including:
 - Theory of operation
 - Controller and input/output modules
 - Color touchscreen human machine interface (HMI)
 - Electrohydraulic valve manifolds
 - Electronic speed and position feedback
- PLC and HMI programming concepts

Class Information

Prospective attendees are encouraged to register early as this workshop is limited to 30 people. For more information or to reserve your seat, email school.ag@emerson.com or visit our dedicated hydro governors workshop page at Emerson.com/AmericanGovernor.

The workshop is a three-day course starting Tuesday at 8 am and running through Thursday at 5 pm. We encourage attendees to arrive the Monday prior and depart the same Friday to maximize class time.

The workshop is held at our hydro design center in Ivyland, Pennsylvania. Lodging and transportation are not provided: services are available in nearby Warminster, Pennsylvania.

Typical Class Outline

1. Introduction to governors (governor 101)
 - A. Governor terminology
 - B. Simplified theory of operation
 - C. Dynamics of the water column and the rotating equipment
2. Governor operation with zero speed droop
3. Governor operation with speed droop
4. Governor operation connected to the grid
5. Governor theory
6. Governor maintenance
7. Governor calibration
8. Troubleshooting techniques
9. Governor oil pressure systems
 - A. Pumps
 - B. Pump pilot valve
 - C. Pump unloader and safety
 - D. Pump lead/lag operation
 - E. Pressure tanks (air over oil) and float valve
 - F. Calculation of shutdown oil levels and pressures
 - G. Governor oil selection and cleanliness
10. Hands-on sessions
11. Question and answer sessions

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