



The Center for Grid Engineering Education

Operations Simulator Training

Course Description

This course is one in a series of several courses developed and offered by GridEd. This course will introduce students to many of the foundational concepts associated with operating the distribution system. This course is designed for individuals considering a career in distribution operations. For this instance of the course, new hires in a distribution control center are encouraged to attend and to provide feedback on the course content. This training has been developed based upon training courses from Duke Energy, EPRI, First Energy, and Southern Company.

Topics included in this course are: basic electricity, distribution equipment, distributed energy resources, outage management systems, advanced metering infrastructures, basic protection, fault isolation and service restoration, reliability indices, outage cause codes, basic distribution SCADA and operation of a SCADA simulation. Students will be provided a laptop to take part in a simulation of a distribution SCADA system. The simplified SCADA system is designed to give individuals a simplistic view of the process utilized to perform Fault location, isolation, and service restoration.

Registration Information

PDHs Available: 16

Registration Fee: \$1600/person

- 20% discount for organizations sending three or more staff
 - 25% discount for government workers (non-utility)
 - 25% discount for college professors*
 - 75% discount for graduate students*
- * University ID required

For More Information

Short Course Coordinator:

Amy Feser, afeser@epri.com

Course Instructors

Van Holsomback, vholsomback@epri.com

Jared Green, jgreen@epri.com

Meet the Instructors



Van Holsomback is a Technical Executive at EPRI focusing on topics associated with Distribution Operations. His research at EPRI focuses upon the evolution of the Distribution System Operator (DSO), the integration of AMI in Operations and how the control center impacts restoring the distribution system after major outage events. Prior to joining EPRI, he was a manager at Georgia Power responsible for the personnel of the distribution SCADA system, the distribution automation equipment and the distribution control centers.



Jared Green is a Senior Technical Leader for the Distribution Operations and Planning Program at the Electric Power Research Institute (EPRI). He has ten years of project management experience with EPRI in data analytics, Smart Grid, information communication technologies, and distribution planning and operations. Prior to joining EPRI, he was a project manager in the Demand Response and Resource Planning group at Alabama Power, a Southern Company. He also worked in the transmission and distribution engineering departments during his career at Alabama Power. Jared is a registered Professional Engineer, a Certified Energy Manager and a Certified Carbon & GHG Reduction Manager.

Course Outline

DER, OMS and AMI – 6 hours

- Electricity as loops
- Grounded versus ungrounded systems
- Role of the neutral at a home – why bright and dim lights
- Why does the wire size change
- How voltage regulators work
- Different power equipment with their role
- Load break versus non load break devices
- How DER impacts distribution
- How an outage management system works
- How AMI systems report outages

Basic feeder protection – 2 hours

- Why reclosers
- How a fuse works
- How a lightning arrester works

Basic reliability – 4 hours

- Reliability indices
 - SAIDI
 - SAIFI
 - CAIDI
- Excluding events
- How indices are improved
- Resiliency efforts
- Cause codes
- Creating reliability improvement projects

Basic SCADA – 1 hour

Basic OH switching – 1 hours

Simulator training and exercise – 2 hours

EPRI