



# SIEMENS

*Ingenuity for life*



## PSSC 510

### PSS®E Voltage Control and Reactive Power Planning Methods

Siemens Power Academy TD - NA • [usa.siemens.com/pti-education](https://usa.siemens.com/pti-education)

#### At a glance

The PSS®E – Voltage Control and Reactive Power Planning Methods course provides a thorough coverage of today's voltage control and reactive power planning issues, and of the tools and procedures that are most effective in studying them.

In PSSC 510, a hands-on course, the participant will:

- Explore fundamentals of voltage control issues (voltage collapse, reactive power compensation, dynamic voltage recovery, etc.)
- Learn power system equipment voltage characteristics, and their impact on voltage control and stability
- Learn load voltage characteristics; discuss load modeling with various static and dynamic characteristics in PSS®E
- Learn bulk system voltage characteristics and control, and discuss several real events of voltage collapse in detail

- Understand reactive power planning issues; explore methods of static and dynamic reactive compensation and model these in PSS®E
- Explore system overvoltage issues, and discuss wind farm voltage issues, including transient response and low voltage ride-through (LVRT)
- Learn methods of performing steady-state voltage analyses, including single contingency and multi-level contingency analysis, N-1-1 contingency analysis, as well as PV and QV analysis
- Learn optimal power flow (OPF) applications, including voltage instability analysis, shunt compensation requirements and load shedding strategy identification
- Learn procedures to study dynamic voltage recovery and analysis using PSS®E
- Learn how to use PSS®E to study motor starting and voltage rise when a line end is opened
- Explore voltage stability case studies

Upon completion of this course, the participant will have a working

knowledge of voltage control issues and reactive power planning using PSS®E.

#### Prerequisites

Participants must be employees of a company that is a current lessee of PSS®E. The course is most beneficial to power system planners or operators who have had at least a year of experience in power system design, planning or operation. Power flow analysis experience is recommended but not essential.

#### Course structure

This is a four-and-one-half-day course. Material is presented in both morning and afternoon sessions for a total of six hours of daily instruction. Standard course hours are 9:00 a.m. to 4:00 p.m. each day, except the last day, which concludes at noon.

To view the PSSC 510 Course Schedule on the web:

[https://siemens.coursewebs.com/cart/pageCourseInfo.aspx?Course\\_ID=PSSC\\_510](https://siemens.coursewebs.com/cart/pageCourseInfo.aspx?Course_ID=PSSC_510)

## Instructors

All courses offered through Siemens Power Academy are developed and taught by leading industry engineers. In addition to their proven instructional ability, our engineers have advanced degrees complemented by first-hand knowledge and experience solving power system problems throughout the world.

## Continuing Education Units (CEUs), Professional Development Hours (PDHs):

Licensed engineers, on a voluntary or mandated basis, attend continuing professional education for licensure renewal to ensure competency. All courses offered through Siemens

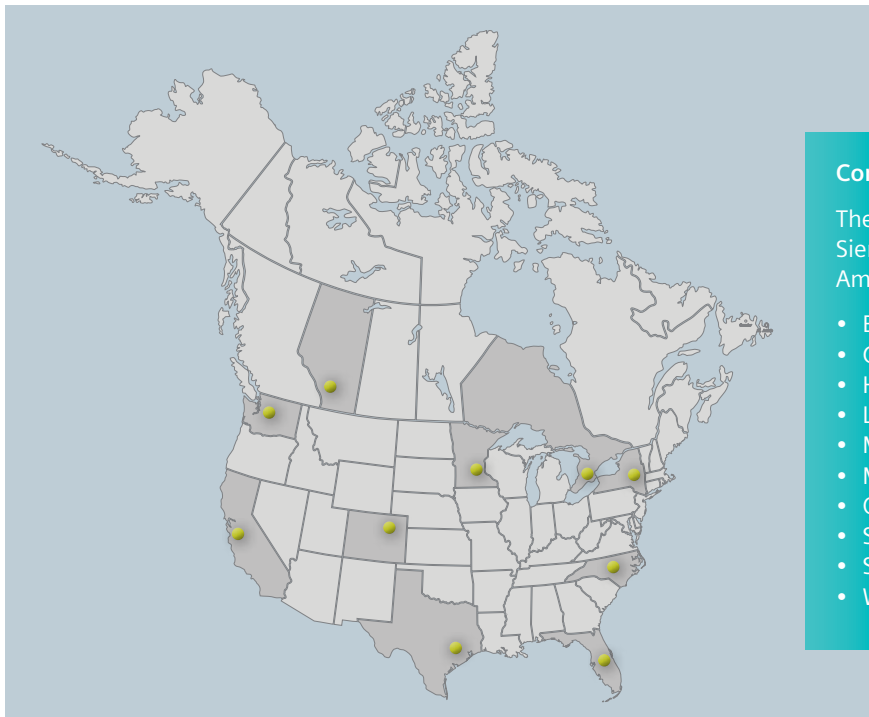
Power Academy meet the requirements for CEUs and PDHs.

- Continuing Education Units (CEUs) are the nationally recognized units for recording participation in professional development and noncredit educational programs. Participants completing this course will be awarded CEUs based on the instructional hours of the course: one CEU is awarded for 10 classroom hours of instruction.
- Professional Development Hours (PDHs) – Continuing education training for the Professional Engineer (PE) – that needs to earn annual Professional Development Hours

(PDHs). Through our instructor-led training, participants earn one PDH for each one hour of instruction. The participant is responsible for maintaining records of courses taken in support of licensure.

## Client site and custom training

All courses are available for presentation at any client's location by special arrangement. At client sites, it is recommended that sufficient computer terminals be available to enable a fully interactive and productive class, if applicable. Client site courses can also be tailored to address specific topics of local importance.



## Convenient training locations

The course is scheduled on a regular basis at Siemens offices located throughout North America, including:

- Burlington, Ontario, Canada
- Calgary, Alberta, Canada
- Houston, Texas, USA
- Littleton, Colorado, USA
- Minnetonka, Minnesota, USA
- Mountain View, California, USA
- Orlando, Florida, USA
- Schenectady, New York, USA
- Seattle, Washington, USA
- Wendell, North Carolina, USA

## Contact us

### Siemens Power Academy TD - NA

Phone: (518) 395-5005

Fax: (518) 346-2777

Email: [power-academy.us@siemens.com](mailto:power-academy.us@siemens.com)

Web: [usa.siemens.com/pti-education](http://usa.siemens.com/pti-education)

Export Control

AL-Number:

ECCN: EAR99

### Siemens Industry, Inc.

Siemens Power Technologies International

400 State Street

P.O. Box 1058

Schenectady, NY 12301-1058 USA

© 2017 Siemens Industry, Inc.

[usa.siemens.com/digitalgrid](http://usa.siemens.com/digitalgrid)