

Siemens Power Academy TD

# Reactive Power Planning using PSS®E

PSSC 790

## At a glance

Power engineers who conduct studies with PSS®E must understand the fundamental concepts of power system behavior as well as know how to execute the many routines within the program. The **Reactive Power Planning using PSS®E** course is for the experienced PSS®E user who would like to increase his or her analytical skills in understanding and resolving voltage control issues.

**PSSC 790** participants will:

- Review the fundamentals of power system voltage criteria, maintaining voltage stability, and the event sequence in voltage collapse
- Discuss steady state contingency analysis relevant to reactive power planning, including AC contingency checking (ACCC), multi-level contingency analysis, and contingency ranking (RANK)
- Learn about PV and QV analysis procedures for determining voltage-related power transfer limit and reactive power margin
- Apply PSS®E optimal power flow (OPF) solution in reactive power planning studies
- Discuss reactive power compensation options, such as shunt capacitors, SVCs, STATCOMs, synchronous condensers, and series capacitors
- Model reactive power compensation devices in PSS®E Power Flow and Dynamic Simulation
- Understand load characteristics and the use of various load models in PSS®E

- Study voltage collapse and recovery using PSS®E's dynamic simulation function with a variety of models to reflect load response, transformer tap changing and generators' over-excitation limiting
- Explore voltage issues and voltage control capabilities associated with wind farms.

Upon completion of this course, participants will be able to use PSS®E at an advanced level for the analysis of voltage control issues (voltage collapse, reactive power compensation, dynamic voltage recovery, etc.).

## Prerequisites

Participants must be employees of a company that is a current lessee of PSS®E. They should have setup and operating experience with basic PSS®E power flow and dynamic simulation applications.

## Course structure

This is a three-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.

**To view the PSSC 790 Course Schedule on the web:**

[https://siemens.coursewebs.com/siemens/pageCourseInfo.aspx?Course\\_ID=PSSC\\_790](https://siemens.coursewebs.com/siemens/pageCourseInfo.aspx?Course_ID=PSSC_790)

### 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):

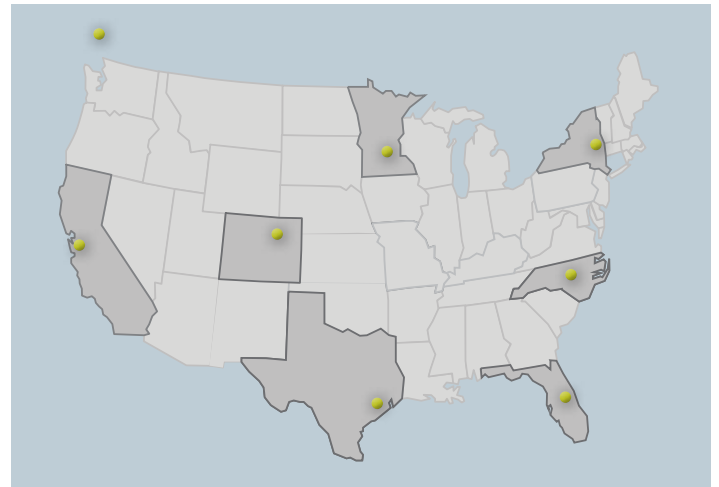
Licensed engineers, on a voluntary or mandated basis, attend continuing professional education for licensure renewal to ensure competency. All courses offered through Siemens Power Academy meet the requirements for CEUs and PDHs.

- 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.

### Convenient training locations

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

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



### 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.

### Contact us

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