

Siemens Power Academy TD

Power Electronics in Transmission Systems

PSSC 655

At a glance

Utilities are incorporating a multitude of new technologies to optimize their ability to supply and deliver power efficiently and economically. Among these technologies, HVDC (high voltage direct current) and FACTS (flexible AC transmission system), are most prominent. The **Power Electronics in Transmission Systems** course presents operating and control fundamentals of these technologies. This hands-on course includes PSS®E based simulation examples of these technologies.

PSEC 655 participants will:

- Review conventional HVDC systems, including application considerations, system basics and controls
- Review voltage source converter (VSC) HVDC systems such as HVDC Plus or HVDC Light
- Discuss modeling of HVDC systems
- Discuss electromagnetic compatibility of HVDC with the adjacent AC power system, including harmonics and filtering, and reactive power compensation
- Discuss HVDC technical problems that may be encountered when installing these elements in an existing power system, and related solutions
- Discuss multi-terminal HVDC systems with conventional and VSC converters and associated technical problems
- Review FACTS technology using conventional thyristor and modern power electronics devices

- Explore modeling of FACTS devices (including SVC and STATCOM) in PSS®E Dynamics
- Understand the principles involved in FACTS and what needs to be considered when these devices are employed on a power system network

Upon completion of this course, participants will have a comprehensive understanding of the principles involved in power electronics devices and will be able to apply this knowledge when incorporating these devices into their transmission system.

Prerequisites

Participants should have a degree in electrical engineering and be familiar with load flow and/or dynamic calculations. Experience in using PSS®E is desirable.

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 655 Course Schedule on the web:

https://siemens.coursewebs.com/siemens/pageCourseInfo.aspx?Course_ID=PSSC_655

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):

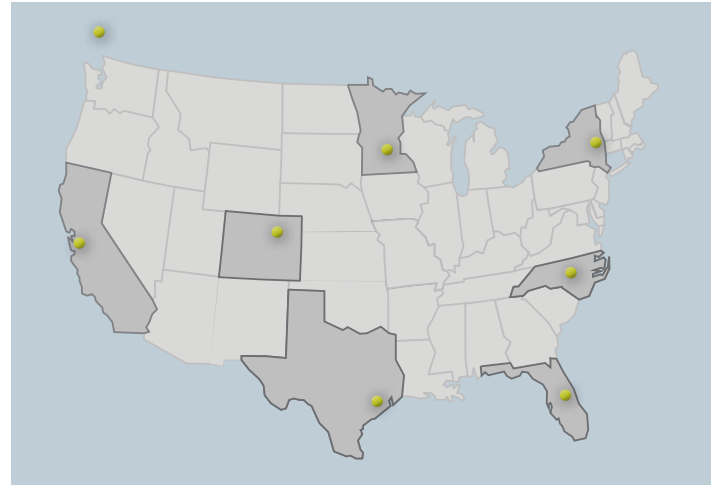
Licensed engineers, on a voluntary or mandated basis, attend continuing professional education for licensure renewal to ensure competency. All courses offered through Siemens Power Academy meet the requirements for CEUs and PDHs.

- 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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