

**POWER & ENERGY SOCIETY
SUBSTATIONS COMMITTEE Annual Meeting
Subcommittee I0 High Voltage Power Electronics**

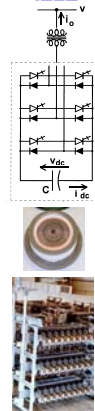
Tutorial
Voltage Sourced Converter
May 16, 2010 from 8:00 h – 17:00 h
Montreal, Canada

This tutorial reviews the applications of the Voltage Sourced Converter (VSC) such as STATCOM, UPFC, SSSC, and VSC-HVDC in Power Transmission. It provides the power utility industry with the justifications for using VSCs in different applications in transmission systems, and the information required for developing requirements for the applications of VSCs. It addresses the general characteristics of power electronic converters, and the special requirements for dc capacitors, valve assemblies, cooling systems, reactors, magnetic interface, protective features and control modes of operations. It discusses safety measures, design and production tests, equipment ratings, control and protection, installation, maintenance, field commissioning, testing and operations.

IEEE/PES Substation Committee – High-Voltage Power Electronics Stations Subcommittee



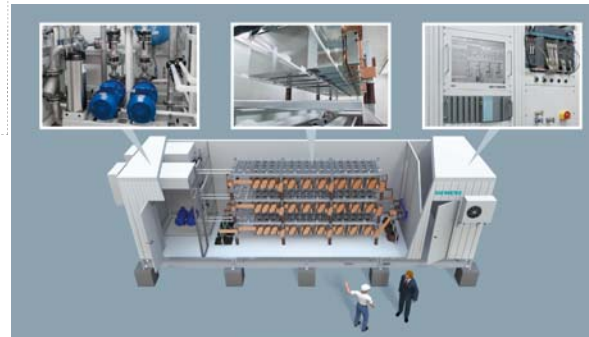
**New stations – Modular Multilevel VSC (MMC)
Technology – SVC plus - Container**



Cooling System

Converter

Control & Protection



VSC Tutorial-Substations Annual Committee Meeting 2010

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Contents and Modules:

1. Module 1 – Overview
2. Module 2 – Electrical Structure and topology
3. Module 3 – Specific Applications
4. Module 4 – Electrical Design
5. Module 5 – Control and Protection
6. Module 6 – Site design and installations