CIGRE Colloquium on HVDC and Power Electronic Systems

Including overhead line and insulated cable applications

Dates: Wednesday March 7 through Friday March 9, 2012
Location: San Francisco, California, USA

Sponsored by:

US National Committee of CIGRE, Cigre Study Committees B1 Insulated Cables , B2 Overhead Lines and B4 HVDC and Power Electronics

High Voltage DC (HVDC) systems and power electronic applications for AC systems, so called Flexible AC Transmission Systems or FACTS, have found early application in power systems in the Western regions of the United States. The latest development of a DC link using extruded dielectric submarine cables and voltage source converters has recently been put into operation in the San Francisco area. It is expected that more such systems will be needed to transfer large amounts of wind, solar and power from other remote sources, some off-shore, to load centers.

Who should attend

This colloquium is intended for engineers involved with power transmission issues, regulators and other with an interest in electric energy generation and transmission. It should be of high interest to those involved with issues related to how to transfer power efficiently and economically over long distances from remote locations to load centers.

Scope of the Colloquium

The Colloquium will cover a range of topics encompassing the challenges transmission networks are presently facing or are likely to face in the future, and the role HVDC and power electronics will play in meeting those challenges. The colloquium program will cover the following topics:

HVDC Conversion Systems

Advances in voltage source converter (VSC) technologies

- Multi-modular converter (MMC) designs
- Pulse width modulation (PWM) converter designs
- Efficiency of MMC and PWM converter systems

Overhead versus underground power transmission using VSC systems – system design considerations

VSC for conversion of AC lines to DC – multi-terminal and tapping aspects

AC Applications

Power electronic systems for AC line applications

Wind power from remotely located wind power plants using series compensated ac systems

Overhead Lines

Electrical Performance of existing DC Lines

Thermal loading of lines; limiting factors

Maximizing utilization of existing lines

Techniques for improving power flow distribution – Cost v. Benefit

Conversion of AC lines to DC – Pros & Cons

Regulatory barriers to increasing power flow on exiting lines

Cable Applications

Long distance underground transmission DC cables

Applications for HVDC cable systems

- Connection to load centers
- Submarine cable installations
- DC land cables
- Dual AC/DC cable designs

AC or DC connections to off-shore renewable energy power plants or other platforms

DC High Temperature Superconducting Cable (HTSC) technologies

At the event each registered attendee will receive an USB flash drive with electronic copies of the presented papers

Technical Visit

Technical Visit arranged by Siemens on Friday March 9, 2012 to the San Francisco converter station terminal of the Trans Bay Cable Project

SC B4 Tutorial: HVDC Grid Fundamentals

HVDC Grids are discussed as the need for transmitting more power increases. The Tutorial, to be held on March 6, 2012, will inform about the work that has been done by the Working Group B4-52 performing an HVDC grid feasibility study. The state of the art regarding the technology of HVDC grids will be presented

SC B1 Tutorial: Testing of XLPE AC submarine and DC cable systems up to 500 kV
Extruded XLPE AC submarine and DC extruded cable systems are being developed and installed for increasing higher voltages up to 500 kV. The Tutorial, to be held in the morning of March 6, 2012, will inform of test procedures developed for these cables by Working Group (WG) B1.27 Test recommendations on XLPE AC submarine cables for 170 to 500 kV and WG B1.32 Recommendations for testing DC extruded cable systems up to 500 kV.

Call for Papers:

- Authors will be notified about paper selection by November 15, 2011
- Final Paper including presentation material by January 15, 2012

CIGRE Colloquium Registration Fee:

Cigre member Non-Cigre member	At or before Jan 3, 2012	$400 $545
Cigre member Non-Cigre member	Jan 4, 2012 or later	$480 $625
Additional fee for SC B4 Tutorial	HVDC Grid Fundamentals	$150
Additional fee for SC B1 Tutorial	Testing of XLPE AC submarine and DC cable systems up to 500kV	$65

For more details see: http://cigre-usnc.tamu.edu/meetings.html

Hotel Arrangement, Reservation Process and Room Rates
Hotel Nikko San Francisco
222 Mason Street
San Francisco, CA 94102

- Room rate of $199 to $209 plus tax for single or double occupancy includes complmentary in room internet.
- Reservation must be guaranteed at the time the reservation is made
- Cut-off date for reservations is January 15, 2012
- To make reservations
  - ~ Call 1 415-394-1111 or toll free (US only) at 800 248 3308. Please ask for the "CIGRE Colloquium" room block.
  - ~ For web based reservations enter www.hotelnikkosf.com
  - ~ Enter dates of stay in "Reservations" box and click SUBMIT
  - ~ Please make sure to enter the "Group Code": SCIGRE
  - ~ Select room type of choice and click CONTINUE
  - ~ Room rates will appear; Click CONTINUE and complete the reservation.

Things to do in San Francisco and vicinity

San Francisco: http://www.sanfrancisco.travel/

Wine tasting in Napa Valley: http://napavalley.com/visitorsinfo/

Tall redwood trees in Muir Woods: http://www.nps.gov/muwo/index.htm

Skiing at Lake Tahoe: http://www.visitinglaketahoe.com

Golf in Carmel/Monterey: http://www.golflink.com/golf-courses/city.aspx?dest=monterey+ca

Visit the scenic Yosemite National Park: http://www.nps.gov/yose/index.htm

Other sightseeing opportunities:

Southern California (Los Angeles, San Diego, Hollywood etc) can be reached in about an hour by plane or via the scenic coastal route, California's Highway #1, along the Pacific Coast in about 8 to 10 hours. Also, Reno, Nevada is easily accessible by car and Las Vegas is can be reached by plane in about an hour. The Grand Canyon National Park can be reached by car from Las Vegas or Phoenix, Arizona.