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: Hotel Nikko, 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

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March 7, 2012

Exposition Open to Registered Attendees

7 AM to 6 PM

Opening of Colloquium

Welcome		
	Speaker TBD	
Session Chair: Dr. Bjarne Andersen, UK		
Papers	**Title**	**Authors**
B4-1	Simulation of Transients with HVDC and FACTS in Large AC Systems	V. Hild, D. Retzmann, M, Schmidt, Siemens AG, Germany M. Luthur, FAU University of Erlangen-Nuremburg, Germany D. Povh, Senior Consultant, Germany
B4-2	Modeling of Multi-level Multi-terminal HVDC VSC Systems in EMT Programs	J. C. Garcia Alonso, F. Mosallat, R. Wachal, Manitoba Hydro International, Canada P. Brunnegård, G. Pinares, STRI AB, Sweden M. Meisingset, Ø. A. Rui, Statnett, Norway M. Danielsson, Svenska Krafnät, Sweden
B4-3	HVDC Links Using the Modular Multilevel Converter: Impact of Control Strategy Using Different Simulation Models	G. Bergna-Diaz, P. Egrot, E. Berne, J-C. Vannier, EDF R&D and Supélec, France
B4-4	Fault Analysis of a Multilevel Voltage Source Converter-based Multi-terminal HVDC System	G. Pinares, N. Ullah, M. Lindgren, P. Brunnegård, STRI AB, Sweden J. C. Garcia Alonso, F. Mosallat, R. Wachal, Manitoba Hydro International, Canada M. Meisingset, Ø. A. Rui, Statnett, Norway M. Danielsson, Svenska Krafnät, Sweden
B4-5	VSC HVDC System Suitable for Overhead Power Transmission	T. Kikuma, K. Takenaka, M. Takasaki, Central Research Institute of Electric Power Industry, Japan T. Fukushima, T. Uchiumi, Hokkaido Electric Power Co. Inc., Japan
B4-6	500 kV VSC Transmission System for Lines and Cables	B. Jacobson, B. Westman, ABB, Sweden M. Bahrman, ABB, United States
B4-7	Standardized Approach to HVDC Connections with Isolated Wind Generation	E. Larsen, G. Drobnjak, GE Energy, United States

Session Chair: Dr. Hamid Elahi, GE, USA		
Papers	**Title**	**Authors**
B4-8	Trans Bay Cable – A Breakthrough of VSC Multilevel Converters in HVDC Transmission	J. Dorn, H. Gambach, J. Strauss, T. Westerweller, Siemens AG, Germany
B4-9	A 3150 MW HVDC Transmission Scheme to Transport Renewable Energy to Remote Load Centres	N. M. MacLeod, B. N. Kayibabu, Alstom Grid, United Kingdom N. M. Kirby, Alstom Grid, United States
B4-10	Bipole Operation of an HVDC VSC Converter with an LCC Converter	J. P. Kjaergaard, K. Søgaard, S. D. Mikkelsen, Energinet, Denmark T. Pande-Rolfsen, A. Strandem, Statnett, Norway B. Bergdahl, H-O Bjarme, ABB, Sweden
B4-11	Fault Tolerant MVDC-HVAC Power Converter for Wind Farm Applications	J. K. Reed, G. Venkataramanan, University of Wisconsin-Madison, United States
B4-12	Application of High Capacity Voltage Source Converter HVDC Technology at the Tres Amigas SuperStation	N. M. Kirby, Alstom Grid, United States N. M. MacLeod, Alstom Grid, United Kingdom D. Stidham, Tres Amigas LLC, United States M. Reynolds, POWER Engineers, United States
B4-13	Series Capacitor Applications including Thyristor-Controlled Series Compensation for AC Lines	I. A. Erinmez, Powerforce APP, United Kingdom S. Nilsson, Exponent, United States
B4-14	Large Scale Wind in Texas – Utility Experience with Series Capacitors, SVCs, and Weak Systems	D. Kidd, P. Belkin, B. Mehraban, American Electric Power, United States G. Irwin, D. Woodford, A. Isaacs, Electranix, Canada
Summary: Marcio Szechtman, Brazil		
Evening		
Dinner at Hotel Nikko		
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Thursday March 8, 2012

Exposition Open to Registered Attendees

7 AM to 5 PM

Cable Technologies

Session Chair: Gunnar Evenset, Nexans, Norway.

Papers	Title	Authors
B1-1	Recommendations for testing HVDC extruded cable systems for power transmission at a rated voltage up to 500 kV	B. Sanden, Stattnet, Norway for Study Committee B1
B1-2	Innovation and applications for extruded HVDC cable systems	M. Albertini, S. Franchi Bononi, M. Marelli, G. Miramonti, A. Orini, G. Perego, G. Pozzati, Prysmian, Italy N. Kelley, Prysmian, United States
B1-3	HVDC XLPE Cables and Accessories at a Rated Voltage up to 500kV	Yoshinao Murata, Masatoshi Sakamaki, Shoji Mashio, Osamu Matsunaga, Seiji Kashiyama, Shoshi Katakai, J-Power Systems Corp., Japan
B1-4	Electromagnetic Fields of DC Cable Systems	F. Lesur, F. DesChamps, RTE, France
B1-5	Basic Impulse Insulation Level Review of ±80kV Nano-Composite DC XLPE Cable	H. S. Park, C. K. Jung, J. W. Kang, D. H. Kim, J. W. Shim, B. S. Moon, KEPCO Research Institute, South Korea
B1-6	Development of XLPE Extruded Cable System for HVDC power Transmission	M. Mammeri, M. L. Paupardin, B. Poisson, I. Denizet, P. Argaut, Silec Cable, General Cable Co., France J. Freestone, General Cable Corp., Spain B. Vissouvanadin, Laboratoire Laplace Toulouse, France
B1-7	Extruded HVDC Cables – A Solution for Different Customer Segments	K. Bergman, F. Mekic, ABB AB High Voltage Cables, United States A. Gustafsson, MJP. Jeroense, ABB AB High Voltage Cables, Sweden
B1-8	Development, Prequalification, and Type test of HVDC Extruded Cable Systems – an Illustration of Cigre Recommendations	P. Mirebeau, M. Gardelein, L. Boyer, Nexans, France B. Sonerud, Nexans, Norway C. Frohne, Nexans, Germany
B1-9	Advanced technology for reliable HVDC extruded cable system	H. Niinobe, N. Ishii, T. Nakajima, A. Watanabe, H. Tanaka, H. Kon, Viscas Corp., Japan
B1-10	High Temperature Superconducting Power Cables for HVDC Applications	M. Stemmle, B. West, E. Marzahn, L. Lallouet, F. Schmidt, Nexans, Germany

Overhead Line Technologies

Session Chair: John Chan, EPRI, USA

Papers	Title	Authors
B2-1	A Study for Environmental Characteristics of AC/DC Hybrid Overhead Transmission Line Using Reduced-scale Model	K. Y. Shin, Y. H. Kim, D. I. Lee, Korea Electric Power Research Institute, South Korea D. H. Kim, B. S. Moon, Korea Electric Power Corp., South Korea
B2-2	Novel Design for Parallel VSC HVDC Links on Common Overhead Line Towers	J. Lundquist, STRI, Sweden J. Lilliecrona, Svenska Krafnät, Sweden
B2-3	Corona and Related Effects of Transmission Lines Converted from AC to DC Operation: Eskom's Perspective and Considerations for Cigré Working Group B2.41	A. A. Beutel. A. Singh, N. Mahatho, A. C. Britten, N. Parus, P. Moodley, Eskom, South Africa
B2-4	Assurance of Adequate Electrical Clearance for AC or DC Overhead Lines at Maximum Power Flow	I. S. Grant, Tennessee Valley Authority, United States D. A. Douglas, Power Delivery Consultants Inc., United States
B2-5	System Benefits of Strategic Conversion of EHV AC Transmission Line to HVDC Operation	T. J. McDermott, AECOM, United States B. Shperling, New York Power Authority, United States R. S. Burton, Teshmont, Canada
B2-6	Performance of DC Transmission Line Insulator Strings	J. Bishop, G. Johnson, S. Nilsson, Exponent, United States J. McNichol, Manitoba Hydro, Canada
B2-7	Electrical Environment: Conversion of an AC to a DC Transmission Line	G. B. Johnson, W. H. Bailey, Exponent, United States

Summary:
B1 - Pierre Argaut , Silec Cable, France
B2 – Lionel Barthold, USA

Friday March 9, 2012

Technical Visit

Technical Visit arranged by Siemens to the San Francisco converter station terminal of the Trans Bay Cable Project

We have reached our registration capacity for this technical visit.
The technical visit of the SF converter station terminal is now closed.

Tutorials

Tutorial on HVDC Grid	
Tuesday March 6, 2012	
Full Day	
Introduction	Gunnar Asplund
Available Technologies	Muhamed Rashwan
MMC - Design Aspects and Applications	Carsten Bartzsch
HVDC Grid Configuration	Norman McLeod
Fault performance	Gunnar Asplund
Protection Requirements	Kerstin Linden
Power Flow Control	Kerstin Linden
Security and Reliability	Norman McLeod
Grid Code	Gunnar Asplund
New components needed	Bjarne Andersen
Conclusion	Gunnar Asplund

Tutorial on Testing of XLPE AC submarine and DC cable systems up to 500 kV	
Tuesday March 6, 2012	
Half Day - morning	
Introduction	Pierre Argaut
Test recommendations on XLPE AC submarine cables from 170 kV to 500 kV	Anders Gustafsson
Recommendations for testing DC extruded cable systems for power transmission at a rated voltage up to 500 kV	Bjorn Sanden