

**CIGRE SC B4 Meeting and  
International Tutorials & Colloquium on**

# **HVDC and Power Electronics**

(under the aegis of CIGRE Study Committee B4  
on HVDC and Power Electronics)

**21<sup>st</sup> to 26<sup>th</sup> September 2015  
at J.P. Hotel, Agra, INDIA**

**Organised by**



CIGRE India



CBIP

## **TECHNICAL COMMITTEE**

**Dr. Bjarne Andersen, former Chairman, CIGRE SC B4 (2012-14)**

**Dr. RASHWAN Mohamed, Chairman, CIGRE SC B4 (2014-16)**

**Ms. HU Joanne, Secretary, CIGRE SC B4**

**Mr. R.P. Sasmal, Member of CIGRE SC B4 from India and Director, POWERGRID and**

**Mr. Oommen Chandy, New Member of CIGRE SC B4 from India and Executive Director, POWERGRID**

**Mr. V.K. Kanjlia, Secretary & Treasurer, CIGRE India**

## **About CIGRE SC B4**

Study Committee B4 of CIGRE is responsible for HVDC systems and power electronics for AC systems. The objective of CIGRE SC B4 is to provide an international forum to share information between electric utilities, manufacturers, universities, standardizing bodies and authorities in selected topics in the field of HVDC and Power Electronics. It provides unbiased and balanced documents concerning economical, technical and environmental matters associated with its area of responsibility.

## **About the Tutorial & Colloquium**

CIGRE India is honoured to host the meeting of CIGRE Study Committee B4 in India in September, 2015. To take advantage of the presence of CIGRE Study Committee members and other International Experts in India, CIGRE India and Central Board of Irrigation and Power jointly with CIGRE Study Committee B4 on HVDC are organizing an International Tutorial and Colloquium on HVDC and STATCOM. This colloquium is in conjunction with the meeting of CIGRE Study Committee B4 and its working groups in India from 21st to 26th September 2015 at J.P. Hotel, Agra as per following schedule:

1	21st Sept. 2015 (Mon.)	Working Group Meeting
2	22nd Sept. 2015 (Tue.)	Working Group Meeting
3	23rd Sept. 2015 (Wed.)	B4 Study Committee Meeting
4	24th Sept 2015 (Thursday)	Tutorial on Latest Development in HVDC Technology, HVDC Grids & STATCOM
5	25th & 26th Sept. 2015 (Friday and Saturday)	Colloquium on HVDC and STATCOM followed by a technical visit to the HVDC 800 kV Multi terminal project at Agra

## **Tutorial**

The one day TUTORIAL will be on the topic of "The Latest Developments in HVDC(LCC and VSC) Technology, HVDC Grids and STATCOM", further details will be made available on the website, as below;

## **Scope of the Colloquium**

The Colloquium is the biennial Technical Discussion Forum of the Study Committee for members, associates and experts of the discipline from the host country (i.e., India in this case). The Preferential Subjects which are going to be discussed are within the following scope:

### **PS 1 : Planning Study and Future Requirements for DC System**

- Technological development
- Operational feed back
- Reliability & constraints

## PS2 : Issues and Challenges in Integration of Renewable Resources (Solar & Wind)

- Technological development
- Operational feed back
- Reliability & constraints

## PS3 : VSC based DC Transmission System and STATCOM

- Technical Development
- Operational feed back
- Reliability & constraints

All papers that are within the scope will be accepted, and authors should be prepared to present a summary of their papers and to answer questions from the audience in the colloquium. The Chairman and Organizing Committee however reserve the right to identify papers that are not directly within the discussion stream and to publish these without presentation or discussion.

### Agra Terminal of the HVDC 800 kV North East to Agra Multi Terminal Project the Venue for Technical Visit.

The 800 kV HVDC terminals at Agra is located about 10 km from the venue. The Agra HVDC terminal is the Inverter station of the world's first 800 kV Multi terminal HVDC Project of 6000 MW capacity and total line length of about 1700 km. One Bipole Rectifier station is located in Biswanath Chariali (Assam) and the second one at Alipurduar (West Bengal). This multi terminal HVDC project was envisaged for evacuation of bulk power from North Eastern Region of India. North Eastern Region of India is endowed with large hydro potential of the order of 50 GW which is required to be transmitted to the load centers of Northern/Western and Southern regions of India. Transmission of such quantum of power over a long distance and through certain geographically narrow corridors called chicken-neck area of West Bengal required a HVDC solution. Looking into the generation addition program, the project has been developed stage wise using parallel groups of converters. Each pole of the Multi terminal HVDC Project has continuous power capacity of 2000 MW i.e., a 33% overload capability which can be utilized to compensate full power for loss of one pole by increasing power flow on the other three available poles. A huge indoor DC yard of about 75 x 75 m and 40 m height is a special feature at the Agra Inverter Station.

**Participants:** The colloquium participants will include top experts in the field of development, design, application and operation of HVDC and FACTS. The colloquium will be informative and beneficial for generating companies, transmission system planners, designers, operators, asset owners and managers, equipment developers and manufacturers research institutions and universities and policy makers and regulators.

### Submission of Synopsis

Participants wishing to present papers are invited to submit their synopsis (approximately 500 words) before 15.01.2015 to the contact address given below:

**Dr. RASHWAN Mohamed, Chairman, CIGRE SC B4** - mrashwan@transgridsolutions.com  
and  
**Mr. V.K. Kanjlia, Secretary & Treasurer, CIGRE India** - cbip@cbip.org

Each synopsis must indicate the topic that will be addressed. The name, Title, Company, Affiliation, Email and full address of the author shall also be given.

**Language :** The papers must be written in English

### Deadlines:

- |   |            |
|---|------------|
| • Submission of Synopsis                  | 15-01-2015 |
| • Authors informed of synopsis acceptance | 15-02-2015 |
| • Submission of papers                    | 15-05-2015 |
| • Preparation of Special Report           | 15-07-2015 |
| • Submission of presentations             | 15-08-2015 |

### Official Travel Partner

M/s Cox and Kings Limited has been appointed as the Official Travel Partner for this event. For all your travel related requirements, such as airport / railway transfers, local city tours, Post conference Tours, pre and post accommodation kindly contact Ms. Manpreet Kohli at manpreet.kohli@coxandkings.com and ibtconf.del@coxandkings.com . You may also reach her at her direct number +91 11 2676 7925.

**Accommodation :** The following hotels in different category are recommended for stay and the details of tariffs (tentative) are given below:

<b>5 Star - Category :</b> (US \$ 125 - 150 per night)	Hotel JP (Venue), Hotel ITC Mughal, Hotel Clarks Shiraz, Hotel Trident and Hotel Mansingh Palace
<b>4 Star - Category :</b> (Rs. 5000 - Rs. 6500 per night)	Hotel Marina
<b>3 Star - Category</b> (Rs. 3000 - Rs. 4000)	Atithi Hotel/ Hotel Crystal Inn/ Pushp Villa/ Utkarsh Villa/ Park Plaza
<b>Budget - Category</b> (Rs. 1500 - Rs. 2500)	Amar Yatri Niwas/ Hotel Taj Heritage/ Shree Residency/ Royal Residency/ Mayur Tourist Complex

### AGRA the Host CITY

The city of Agra, the quintessence of the grand Mughal era, reigns to this day in the public mind as the embodiment of royal grace, imposing architecture and power. Agra is globally renowned as the city of the Taj Mahal. But this royal Mughal city has, in addition to the legendary Taj, many monuments like Agra Fort and Itmadul Daula epitomize the high point of Mughal architecture. No tour to India can be complete without paying a visit to this erstwhile capital of the Mughals and the city of the Taj Mahal, the world's most beloved monument. With its laidback lifestyle and its immense wealth of architecture, handicrafts and jewelry, Agra is amongst the most remarkable city of the world.

### For more details please contact Conference Secretariat

**Mr. V.K. Kanjlia, Secretary & Treasurer, CIGRE India**, C/o Central Board of Irrigation & Power, CBIP Building, Malcha Marg, Chanakyapuri, New Delhi-110021, India

**Contact person** - Mr. Vishan Dutt, Sr. Manager (Tech.), CIGRE India - (Mobile No. 09811431554)

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