



## CIGRE SC A1 Meeting and International Tutorials & Colloquium on

# Rotating Electrical Machines

(Under the aegis of CIGRE Study Committee A1 on Rotating Electrical Machines)

**Tutorial & Poster Session : 25 September 2019 and**

**Colloquium : 26-27 September 2019**

**Venue : Hotel VIVANTA by Taj, Dwarka, Sector 21, New Delhi (India)**

### National Organizing Committee for the Event



**I.S. Jha**  
President, CIGRE  
India &  
Member, CERC



**A.K. Gupta**  
Vice President,  
CIGRE-India  
Director, NTPC



**S. Balakrishnan**  
Vice President,  
CIGRE India  
Director, BHEL



**Harish Agarwal**  
Vice President  
CIGRE India and  
President, IEEMA



**V.K. Kanjlia**  
Secretary,  
CIGRE-India &  
CBIP

### Technical Committee - For Tutorials & Colloquium



**Nico Smit**  
Chairman  
CIGRE SC A1



**Peter Wiehe**  
Secretary  
CIGRE SC A1



**Juergen Weidner**  
Germany



**Erli Figueredo**  
(Brazil)



**Remi Tremblay**  
(Canada)



**Luis Rouco**  
(Spain)



**R.P. Sasmal**  
Tech Chair  
CIGRE-India



**N.N. Misra**  
Vice Chairman  
(Tech.)  
CIGRE India



**A.K. Gupta**  
Director  
NTPC



**D.K. Chaturvedi**  
Chairman  
CIGRE NSC A1



**Sandeep Garg**  
Ex-President  
IEASA



**Kondra Nagesh**  
CIGRE A1  
Tech Group  
AGM, NTPC



**P.P. Wahi**  
Director  
CIGRE-India

### Attraction for Participants in the Tutorials & Colloquium

- Opportunity to interact with renowned experts of Turbo Generators, Hydro Generators, Large Motors and machine diagnostics including Advisers and Chairman of CIGRE Study Committee A1 on Rotating Electrical Machines during the event.
- One to one interaction with authors of CIGRE papers during Poster session and presentations.
- Views by International experts as Chairman of various sessions
- Tutorials by Senior Experts of CIGRE

## INVITATION



V.K. Kanjlia  
Secretary,  
CIGRE-India

The International Council on Large Electric Systems (CIGRE) Paris is a knowledge sharing platform. It has sixteen study committees covering different subjects of power sector. The study committee SC A1, which deals with Rotating Electrical Machines, has about 75 expert members from world's leading manufacturer of turbo generators, hydro-generators, large motors, and machine diagnostics and also from utilities and leading Engineering institutes.

CIGRE has been holding every year study committee meetings and Colloquium. The CIGRE 2019 colloquium is being held at New Delhi India from 26 - 27 September 2019, wherein leading experts of Electrical Machines will meet and share on latest technology and developments during Tutorials and Colloquium sessions.

The preferential subject for discussion has been planned considering flexi operation of thermal plants and pump storage stations due to large renewable penetration in the electrical system. As a major step to save environment, this Colloquium will also share on Super-Premium and Ultra Super-premium efficiency motors application and Synchronous condenser based solutions for efficient and reliable grid management.

It gives us immense pleasure to invite you to join this event and make it a grand success.



D.K. Chaturvedi  
Chairman  
CIGRE NSC A1 &  
Ex GM, NTPC

## CIGRE and the Committee for CIGRE-India

The International Council on Large Electric Systems (CIGRE), with its Headquarters at Paris deals in the field of Transmission and Generation. It functions through 16 Study Committees formed for various disciplines of Power Systems. Each Study Committee comprises about 24 experts drawn from various countries. In addition, some more experts are members of the Working Groups/Task Forces formed by these Study Committees. It is a matter of pride that India is represented in all the 16 CIGRE Study Committees as regular observer member.

CIGRE (Paris) has about 14000 members from 100 countries. Wherever there are more than 40 equivalent members in any country a National Committee is formed with the following aims:

- To disseminate the technical information to the members of the national committee.
- To propose papers for presentation at CIGRE sessions
- To encourage membership of CIGRE
- To organize representation in CIGRE session / symposia.
- From India there were 827 equivalent members for CIGRE in the year 2018.

CIGRE (India) is an affiliate of Central Board of Irrigation and Power. It is the Indian National Committee of CIGRE and is a registered society. It co-ordinates the activities of CIGRE in India, through a number of National Study Committees and disseminates the information about the activities of the CIGRE Study Committees and Working Groups to various organization in India.

## About CIGRE SC A1

Study Committee A1 of CIGRE is responsible to facilitate and promote exchange of information and knowledge in the field of rotating electrical machines at international level. It add, value to the information and knowledge by means of synthesising state-of-the-art practices and developing recommendations. The activities of the Study Committee A1 cover economics, design, construction, tests, behaviour and materials of turbo generators, hydro generators, non-conventional machines and large motors.

## About the Tutorial & Colloquium

CIGRE India is honored to host the meeting of CIGRE Study Committee A1 on Rotating Electrical Machines and its working Groups in India from 22nd to 27th September 2019. To take advantage of the presence of CIGRE Study Committee, and its working Group members besides other International experts in India, CIGRE-India and Central Board of Irrigation and Power jointly with CIGRE Study Committee A1 on Rotating Electrical Machines are organizing an International Tutorial and Colloquium on Rotating Electrical Machines.

This colloquium is in conjunction with the meeting of CIGRE Study Committee A1 and its working groups in India from 22nd to 28th September 2019 at Hotel VIVANTA by Taj, Dwarka, Sector 21, New Delhi (India)

Two days International Colloquium on "Rotating Electrical Machines" is scheduled on 26-27 September 2019. 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:

## Tutorials : Four Tutorials Proposed

### To be Announced

#### Preferential Subject 1: High Renewable Penetrated Networks

- Methods and experiences for the evaluation of existing base load plant to handle cyclic load.
- Generators as Synchronous Condensers to solve Power Quality issues due to large scale renewable integration & comparison with other FACTS devices.
- Utility of Hydro generating units in stabilizing the grid operations against fluctuating loads by Pump storage and Synchronous Condenser Operation.
- Design improvements and technological advancement in Hydro generators for prolonged and efficient operation as Synchronous condensers and Pump-motors to take care of operation of grid due to fluctuating feed of renewable energy and variable load demand.
- Innovative trends in the field of Hydro generators.
- Suitability of motors in renewable energy mix environment from a harmonics point of view.
- Latest designs implemented or proposed to withstand severe load cycling.
- Wind Turbine generator experience: Failures, design challenges, maintenance philosophies and maintenance challenges.
- Solid waste and Biomass power plants: Design, specification, efficiency, operation and maintenance.

#### Preferential Subject 2: Operational Experience and New Developments

- Operational experience on state of the art technologies used for large turbo generators, hydro generators, wind turbine generators, high voltage motors and high efficiency motors.
- Latest designs and maintenance practices to improve reliability, availability and reduce maintenance costs
- Performance comparison between different designs of large motors
- Advanced and optimized condition monitoring making use of latest technologies.
- Experience with Renovation, Modernization and Up-rating of aged plants.
- Novel techniques to overcome known operational and design problems of HPP's especially for operation in Silt prone water.

## Submission of Synopsis

Participants willing to submit papers for Colloquium are invited to submit their synopsis (500 words) before 15 April 2019 to [vishandutt@cbip.org](mailto:vishandutt@cbip.org); [vishan.dutt.cbip@gmail.com](mailto:vishan.dutt.cbip@gmail.com).

OR through online (<http://www.cigreindia.org/SCA1/UserRegistration.aspx>)

Each synopsis must indicate the topics that will be addressed, The Name, Title, Company, Affiliation, E-mail and Full address of the author shall also be given. The papers must be written in English.

### Time Lines:

- Abstract Submission 15 April 2019
- Intimation of selected abstract 15 May 2019
- Submission of Final Paper & Presentation 31 July 2019

**VENUE :** Hotel VIVANTA by Taj, Dwarka, Sector 21, New Delhi (India)

## Over All Programme for The Event

The schedule for various activities during the above event is as below:

SCHEDULE OF CIGRE 2019 MEETING TO BE HELD IN NEW DELHI							
Activity	22 Sep.	23 Sep.	24 Sep.	25 Sep.	26 Sep.	27 Sep.	28 Sep
	Sunday	Monday	Tuesday	Wed.	Thursday	Friday	Sat.
** Advisory & Organizing Committee Meeting - F/N	✓						
Technical Visit 1- NTPC Coal Fired / Gas Based project at Dadri A/N	✓						
** WG presentation		✓					
** SC Meeting - F/N			✓				
**Working Group Presentation A/N			✓				
Tutorials				✓			
Colloquium - Day 1 Registration, Inaugural & Tech. Session					✓		
Colloquium - Day 2 - Tech. Session						✓	
** WG Presentation (1600 hrs. onwards)						✓	
Technical Visit 2 to 800KV DC Multi-terminal at Agra							✓
** Participation restricted to members of respective CIGRE WGs, Study Committee and Invitee only							

## About Technical Visit

**Technical Visit 1 : National Capital Power Station (NCPS) Or NTPC Dadri**, is the power project to meet the power demand of National Capital Region (India). It has a huge coal-fired thermal power plant and a gas-fired plant and has a small township located in Uttar Pradesh, India for its employees. It is located in Gautam Budh Nagar district of Uttar Pradesh about 25 km from Ghaziabad and about 9 km from Dadri. It is nearly 48 km from New Delhi towards Hapur. The township has an area of about 500 acres over all. NTPC Dadri is a branch of National Thermal Power Corporation, which is a public sector now. It is about 20 km from Ghaziabad via Badalpur, Mahawar, Bamabawar, and Akilpur Jagir.



**Technical Visit 2 : 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.

## Participation

Participation in the Study Committee/Working Groups Meetings is restricted to its members only. Invitees in the form of observers can also be allowed on specific invitation from Secretary, CIGRE-India with the permission of Chairman of CIGRE Study Committee.

The colloquium participants will include top experts in the field. The colloquium will be informative and beneficial for generating companies, system planners, designers, operators, asset owners and managers, equipment developers and manufacturers, research institutions and universities and policy makers and regulators.

Participation in the Tutorials and Colloquium is open on payment of prescribed registration fee.

## Registration

The registration fee payable by the delegates, including authors of papers, for participation in the Tutorial and Colloquium is as follows:

Sl. No.	Event	Fee payable per participants from SAARC countries in Rs.			Sl. No.	Event	Fee payable by WGs & Study Committee Members & other foreign participants in USD	
		Participants	Companion	Students/ Faculty			Participants	Companion
1	Tutorial	6,000/-	1,000/-	1,000/-	1	Meeting of Working Groups, Study Committee, Tutorial & Colloquium	300	150
2	Colloquium	18,000/-	2,500/-	2,500/-				
3	Tutorial & Colloquium	20,000/-	3,500/-	3,500/-				
4	Technical Visit 2	10,000/- per participant			2	Technical Visit 2	150	150

### Important:

- 18% GST will be extra for the payment in INR.
- 10% discount in registration fee to CBIP, CIGRE-India and IEEMA members
- Companions are immediate relative or one normally residing with the participant. The companion fee includes lunches, tea coffee etc. during the events from 22-27 Sept. 2019 and Welcome Gala Dinner.
- The fee for technical visit covers to & fro travel by AC deluxe bus, refreshment & Lunch during visit, Entry Tickets at Taj Mahal etc.
- However the spot registration is available to a limited extent, it is advisable to register well in advance.

The registration fee covers the cost of registration kit, Tutorial and Colloquium proceedings, and lunch and tea in-between technical sessions. The participants will have to make their own arrangements for travel, boarding and lodging.

## Programme for Accompanying Persons

The separate programme including local sightseeing can be organized for accompanying persons through official travel partner, on payment. The details of the programme will be made available at the time of registration.

## Sponsorship Opportunities

The Colloquium provides an effective opportunity for sponsoring companies to promote their products/services to a focused audience, besides networking with engineers of utility, manufacturers and academic institutions during tea/coffee and lunch intervals. Sponsors are assured of full visibility with printing of their names on proceedings, banners and other publicity material related to Colloquium and will have the privilege of distribution of their product's pamphlets/catalogues during the Colloquium. Sponsors will also have the privilege of sending delegates exempted from payment of registration fee as indicated hereunder:

Category of Sponsorship	Fee in Rs.	Free Delegates in Tutorial & Colloquium	Free editorial in the proceedings
Platinum	5,00,000	10	2 pages
Gold	3,00,000	5	1 pages
Silver	2,00,000	3	1 pages

For further details, please contact the Colloquium Secretariat.

## Call for Advertisements

A limited space for insertion of advertisements in the Colloquium proceedings is available at the following rates:

Position	Charges for Colour Advertisements	
	SAARC countries (Indian Rs.)	Other countries (US\$)
Back cover page	50,000	1000
Second or third cover page	30,000	600
Full page	15,000	300

### Payment and Correspondence

The payments for the event (registration fee, sponsorship & Advertisement are to be made to CIGRE India by the following methods:

- Banker's cheque payable to: Central Board of Irrigation and Power, New Delhi
- Bank transfer : Bank charges if any are to be borne by Participants

**Beneficiary Name** (Payee Name & address): Central Board of Irrigation & Power, Malcha Marg, Chanakyapuri, New Delhi 110021

**PAN No.** : AAAJC 0237F; **GST Number** : 07AAAJC0237F1ZU

**Complete Bank Details:** **Bank Name:** HDFC Bank; **Saving Bank Account Number** : 00031110004411

**Branch & Address** : 209-214, Kailash Building, 26, Kasturba Gandhi Marg, New Delhi 110001;

**Branch /RTG/NEFT IFSC** : HDFC00000003; **MICR Code** : 110240001; **Swift Code** : HDFCINBBDEL

All the payments details for the event to be furnished along with the registration form and Name of the event should be mentioned under subject in all the correspondence relating to this event.

**Note** : No other method of payments is acceptable.

## Accommodation

The official venue hotel for the Colloquium is: Hotel VIVANTA NEW DELHI DWARKA, Sector 21, Metro Station Complex, Dwarka, New Delhi -110075, India.

For the convenience of the participants, we have blocked the accommodation at the following (venue) hotel at a very special price.

Hotel Name	Room Category	Location	Single/ Double
			INR/ USD
Hotel VIVANTA Dwarka, New Delhi	Deluxe	Dwarka, New Delhi	105 US\$ or INR 6600+ GST

- The special rate is inclusive of complimentary buffet breakfast at the coffee shop.
- The check in & checkout time is 1400 Hrs. & 1200 Hrs. Noon respectively
- The special tariff is valid only during the event.

To avail the benefit, the Participants are requested to make reservation for accommodation well in advance. The payment for reservation is to be made online to Hotel directly. For any assistance in this regard you may contact our official travel partner.

### Official Travel Partner

For any enquiry related to Accommodation, Travel and City Tours please contact following person from Vedio Hi who is appointed as official travel partner for this event:

- Ms. Ritu Chopra – 9811548209 (E-mail – [ritu23chopra@gmail.com](mailto:ritu23chopra@gmail.com) OR
- Mr. Jatin Kamboj – 9555555636 (E-mail – [Sanjeevchopra@gmail.com](mailto:Sanjeevchopra@gmail.com))

## General Information

### Official Language

The official language of the Colloquium is English.

### Official Invitation

The invitation contained in this bulletin should generally suffice to plan travel formalities. However, should an official invitation be needed; the same can be sent by the organizers on request.

### Visa and Custom Requirement

All visitors to India require a visa, except visitors from Nepal and Bhutan. The best place to get your visa is at Indian Embassy and High Commissions in your country of residence. Please check your nearest Embassy, Consulate or High Commission for all the details for getting visa. Keep your passport with you at all the time

### Banking and Communication Facilities

Foreign exchange facilities fax and phone service is available at the venue hotels of the Colloquium.

### Climate

The maximum temperature at Delhi in October is around 35°C maximum and 18°C

## INDIA - THE HOST COUNTRY

India – The very name conjures images of vibrant colors, mysticism, royalty; an amalgam of religions, a kaleidoscope of art and culture, all of which find expression in the beautiful temples, sculptures and monuments. India's ancient and diverse culture, sweeping back at least 5000 years, with successive waves of migration absorbed into the fabric of Indian life, has enriched it time and again to make a multi-cultural nation with a rich diversity of languages, customs, cuisines, religions, literature and arts. Within this kaleidoscope of immense variety there is a thread of continuity that has determined Indian civilization and social structure. India, it is often said, is not a country but a continent. From north to south and east to west, the people are different, the languages are different, and the country is different. There are few countries on earth with the enormous variety that India has to offer. India is a land of romance and dreams, of splendor and extravagance, of forts and palaces, beaches and jungles, a kaleidoscope of vibrant colors and rituals. Explore the diversity of Northern India expressed by the mystic ambience in Varanasi, through the architectural magnificence of the Taj Mahal in Agra and the majestic forts and palaces of Gwalior and Rajasthan.



### Delhi - The Host City

Delhi is a place which has a high esteem history and culture to boast on, Historical monuments and ancient architecture makes the city a sought after destination for tourists and connoisseurs. The monuments in the city are very well preserved by the Archaeological Survey of India. Among the most popular monuments in Delhi are the Red Fort, Purana Quila, Qutab Minar, Iron Pillar, India Gate, Humayun's Tomb, Jantar Mantar and Lotus Temple.



## For more details please contact Event Secretariat

**V.K. Kanjlia**, Secretary CIGRE India & CBIP

**P.P. Wahi**, Director, CIGRE India & CBIP

### Contact Person:

**Vishan Dutt**, Chief Manager (CBIP) & CIGRE-India

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CIGRE SC A1 Meeting and  
International Tutorials & Colloquium on

# Rotating Electrical Machines

(Under the aegis of CIGRE Study Committee SC A1 on Rotating Electrical Machines)

25, 26 & 27 September 2019

Venue

**HOTEL VIVANTA, NEW DELHI, DWARKA**  
Metro Station Road, Sector 21, Dwarka, New Delhi (India)

## REGISTRATION FORM

(please send this form to CIGRE- India : Email : vishandutt@cbip.org : Fax : 91-11-26116347)

- Willing to attend Tutorial  ; Colloquium  or Both  (Pl. tick )
- Willing to join Technical Visits : .....
- Delegate Name & Designation : .....
- Organisation: .....
- Address for Correspondence.....
- Phone..... Fax..... E-mail : .....
- Companion person if any : .....

**For International participants and their companion guest, additional details are required apart from the above information:**

### Passport Details

Full Name : As Mentioned in the Passport	
Birth Date	
Place of Birth	
Passport No.	
Date and place of issue	
Expires	
Nationality	
Dates of stay in India	
Complete postal address to be mentioned on invitation letter	

### Arrival Details

Arrival date, Time & Flight Number	Departure date, Time & Flight Number

- Details of Registration fee Paid: