

10<sup>th</sup> National Conference  
**Earthing Systems**

21-22 September 2017

Venue : CBIP Conference Hall, Malcha Marg, Chanakyapuri, New Delhi



**Organised by**



Central Board of Irrigation & Power

**In association with**



CIGRE-India



AARO

International Association on Electricity Generation,  
Transmission and Distribution (Afro-Asian Region)

## INTRODUCTION

The Central Board of Irrigation & Power in association with CIGRE-India and International Association on Electricity Generation, Transmission and Distribution (Afro-Asian Region) is organizing 10<sup>th</sup> National Conference on “Earthing Systems” on 21-22 September 2017 at Conference Hall of Central Board of Irrigation & Power, Malcha Marg, Chanakyapuri, New Delhi 110021.

## AIMS AND OBJECTIVE

CBIP has been organising conferences on earthing of electric power stations every year now. The last one was held in Spetember 2016 which was much appreciated by delegates who had come from all over India and abroad. CBIP has now again taken initiative to organise this National Conference on “**Earthing Systems**” on **21-22 September 2017** with the aim to update the knowledge of professionals about the current techniques in Earthing Systems and to discuss the various problems related thereto. Proceedings of this conference will also help the professionals in improving the performance and reliability of electrical power system, which is the need of the hour.

It is pertinent to mention that Earthing plays an important role in proper operation of generation, transmission and distribution systems. The function of earthing in an electric power system is to (i) maintain the potential of current carrying as well as non-current carrying parts of equipment, apparatus and appliances connected to the system, and (ii) to ensure safety of equipment and personnel and correct operation of protective devices during earth faults. Earthing also provides safety during lightning strikes on equipment or structures and on occurrence of induced voltages and currents on equipments of an electric system. A proper earthing system provides easy and shortest path to the flow of earth fault current without adversely affecting the continuity of service. It also ensures that a person present in the station area is not exposed to danger of electric shock.

The efficacy of an earthing system depends on various factors like resistivity of general mass of earth in and around the area where earth grid is buried and also that of surface layer of soil, duration and magnitude of fault current and grid current, shock duration, the maximum safe current that a human body can tolerate and the permissible values of dangerous voltages that shall arise due to the flow of grid current. Earthing of fence is another issue of importance.

## TOPICS

Various topics of interest have been identified for deliberation during this conference.

- Types of earthing and design parameters
- Latest International concepts of Earthing
- New concepts of Earthing – SIGMA Earth; dissipating faults of variable frequencies
- IEEE 80 2000 (Grounding substation earthing)
- Earthing of generating plants, modern electric grid substations, transmission lines, distribution lines, generating plants, and load distribution centers
- Use of computer software for earthing design
- Current for design of earthing system
- Earthing of electronic equipment in power stations
- Role of earthing in protection of installations and equipment from lightening
- Soil resistivity measurements and interpretation
- Requirements of earthing in hilly, and corrosion prone areas
- Testing, installation, and inspection and maintenance together with their periodicity
- Case studies.

**Software for (i) computation of grid current and for (ii) evaluation of two layer soil model shall be included with the conference proceedings to be distributed to the participants. In order to make participants conversant with the use of software, practical sessions on the use of the software for evaluation of grid current and two layer soil model shall be held. The focus and the extent of these sessions will be adjusted depending on the need and interest of the participants.**

## FACULTY

Eminent experts from Utilities, Manufacturing organizations and Academic field shall be drawn as faculty. The following renowned experts in field of Earthing have confirmed to deliver the lecture during the Conference.

Shri Mata Prasad, Founder President CIGRE-India, Dr. Hans R. Seedher, Ex-Professor & Head, Electrical Engineering Deptt., PEC, Ms. Anjuli Chandra, Former Principal CE, CEA, Shri S.K. Ray Mohapatra, CE, CEA, Shri B.S. Bodh, GM, Electrical/TS, DFCCIL, Shri Sujeet Mishra, Director, RDSO, Shri Prashant Mishra, Director, National High Speed Rail Corpn. Ltd., Shri K.K. Sarkar, Asst. General Manager,

POWERGRID, Shri Nihar Raj, Business Head Power Consulting & Hub Manager-Asia, ABB Ltd., Shri Sonjib Banerjee, Manav Energy Pvt. Ltd. and Shri Rajesh Kumar Arora, DTL.

## DATES AND VENUE

The Conference will be held on 21-22 September 2017 in the Conference Hall of Central Board of Irrigation & Power, Malcha Marg, Chanakyapuri, New Delhi - 110 021.

The conference timing will be 9.30 am to 5.00 pm on both the days.

## CALL FOR PAPERS

Experts who desire to participate by delivering lectures on different aspects of Earthing including case studies are requested to furnish the write-ups to reach CBIP office latest by 31st August 2017.

## WHO SHOULD ATTEND

The conference will be of special interest to:

- Planners, Independent power producers, Operators, Consultants, Electrical Contractors
- Researchers / Academicians, Manufacturers, Power Utilities / Corporations, State Govt. / SEBs, etc.

## REGISTRATION

The perspective participants, desirous of attending the conference may register themselves by sending the following details to CBIP along with necessary payments:

Delegate Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Organisation: \_\_\_\_\_

Mailing address: \_\_\_\_\_

Phone/Fax/E-mail: \_\_\_\_\_

|        | Registration fee per participant | Discounted fee for      |             |
|--------|----------------------------------|-------------------------|-------------|
|        |                                  | CBIP/CIGRE/AARO Members | Students    |
| Amount | Rs. 12,000/-                     | Rs. 10,000/-            | Rs. 2,500/- |

**GST : 18% extra.**

The conference is non-residential.

The registration fees includes, working lunch, tea during the programme, a copy of the conference proceedings (including software for evaluation of grid current and two layer soil model). The participants will have to make their own arrangements for boarding and lodging, transport etc. at New Delhi.

## OTHER ATTRACTIONS

Scope exists for organizations to be sponsor on lump sum payment with following attendant benefits:

| Category   | Fee          | Delegates free | Coloured advt. |
|------------|--------------|----------------|----------------|
| Sponsor    | Rs. 2,00,000 | 8              | 2 pages        |
| Co-sponsor | Rs. 1,00,000 | 4              | 1 page         |

## PAYMENTS

All payments should be made by cheque at par/ Demand Draft drawn in favour of “**Central Board of Irrigation and Power**”, payable at New Delhi or by transfer the amount to HDFC Bank, 209-214, Kailash Building, 26 Kasturba Gandhi Marg, New Delhi 110 001

Saving Bank Account No. : 00031110004411

Swift Code: HDFCINBBDEL

IFSC: HDFC 0000003

MICR Code: 110240001

## ADDRESS FOR CORRESPONDENCE

All correspondences relating to event should be addressed to:

**V.K. Kanjlia**

*Secretary*

**Central Board of Irrigation & Power**

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E-Mail : batra@cbip.org; cbip.batra@yahoo.com, cbip@cbip.org

Contact Person : S.K. Batra - M : 9811943812

## EMINENT KEY SPEAKERS



**Shri Mata Prasad** is an Internationally known expert and recipient of prestigious Technical Committee award from CIGRE, Paris and also Founder President, CIGRE India. Shri Mata Prasad did his B. Sc (Engg) from BHU in 1954 and served UPSEB as Chief Engineer handling Hydro Generation Project and Thermal Power Plants. He was responsible for developing the 400 kV substations. From 1984 to 1993 he was with NTPC responsible for 400 kV network expansions interconnecting all the regions of India. He was also involved in bringing HVDC Back-to-Back and Bulk Power Long distance HVDC transmissions.



**Dr. H.R. Seedher** received the B.Sc. Engg., M.Sc. Engg., and Ph.D degrees in Electrical Eng. from Panjab University, Chandigarh. Dr Seedher, retired from Panjab Engineering College as Professor and Head of Electrical Engineering Department. The main area of research of Dr Seedher is Power System Grounding. He has published a number of research papers in this area in reputed national and international journals. He has worked as a consultant for design of grounding system for a number of power stations & made significant contribution in the preparing the 'Manual on Earthing of AC Power Systems' published by CBIP.



**Ms. Anjali Chandra**, is Former Principal Chief Engineer, CEA. She is B.E. Electrical and MBA from Punjab University, Patiala. She has work experience of over 30 years in different capacities in the various formations/ Divisions of CEA, DERC and PSEB. She has acquired technical expertise during her service in the field of planning, design, monitoring, supervision and administration. She is actively involved in the formulation of construction standards for lines of 33 kV and also involved in the field of Distribution for loss reduction, improvement in quality and reliability of power.



**Shri S.K. Ray Mohapatra** is the CE, CEA. He graduated in Electrical Engineering from Sambalpur University, Orissa in 1982 and had his Master's Degrees and MBA from IIT, Kharagpur and Faculty of Management Studies, University of Delhi in 1984 and 2003 respectively. His professional experience of more than 22 years includes Project appraisal, tendering & procurement, design and engineering of EHV substations etc. with the CEA.



**Shri Prashant Mishra** is presently Director, National High Speed Rail Corpn. Ltd. He is a Certified Energy Auditor and having vast experience of Railway Electrification projects and rolling stock design. This includes International and national Electrification Projects, EPC contracts with commensurate academic qualifications.



**Shri Bhupender Singh Bodh** is an IRSEE Officer of Indian Railway and presently working in Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL) as General Manager – Electrical/TS. He has nearly two decades of experience in Railway electrification and associated systems like SCADA, Protection & Earthing. He is a qualified Chartered Engineer (C Eng) from IET, UK and is a Senior Member of IEEE, USA.



**Shri Sujeet Mishra**, is an IRSEE and presently Director in the RDSO under the Ministry of Railways. He has been instrumental in assimilation and further development of new generation of motive power components and has had significant role in the development of two classes of electric locomotives-currently being the work horses of Indian Railways. He is an active contributor to the standardisation process through his association with BIS and IEEE.



**Shri K.K. Sarkar** is B. Tech (Hons.) in Electrical Engineering (1995) from IIT, Kharagpur. Since joining as executive trainee in 1995 he is with POWERGRID serving mostly in corporate substation engineering division and is presently Asst. General Manager at POWERGRID. He is mainly involved in design, engineering and standardization of substation layout & equipments of EHV substations at voltage levels of 132 kV, 220 kV, 400 kV and 765 kV. He has expertise in EHV substation engineering & Earthing Systems. He has wide experience in designing of earthing system at difficult conditions and has published papers and contributed in various manuals on substation layout & earthing systems.



**Shri Sonjib Banerjee** is Technical Director - Duval Messien known worldwide for hi-tech Earthing solutions & Lightning protection technologies. He has brought new innovative solutions on critical and sensitive electrical installations through his 2 companies-SGI Engineers (India) and Manav Energy Pvt. Ltd. He has been awarded the Man of The Year (2010) for Infrastructure Safety by US-Asia Business Forum in Los Angeles. He has successfully revamped and strengthened earthing systems for various Power, Oil & Gas and Defense organizations in India.



**Shri Nihar Raj** is the Business Head Power Consulting & Hub Manager-Asia, ABB Ltd. He received his engineering degree from M.S. University, Vadodara. Since then he has been working with ABB India Ltd. He has designed several air insulated substations from 11 kV to 765 kV and gas insulated substations ranging from 36 kV to 400 kV. He is also involved in the design of 800 kV Mixed Technology Switchgear and GIS solutions. Shri Nihar has presented several technical papers at various national & international level conferences.