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Revised Information Brochure

CBIP Offers

HANDS-ON TRAINING

In State of the Art Laboratory with Practical Demonstrations for Skill Development of Professionals and Utilities in the Power Sector

Venue : ABB Power TEC™, ABB India Ltd., Maneja, Vadodara

Topics for Hands-on Training

- HV Gas Insulated Switchgear
- HV and EHV Switchgear
- Distribution Transformer
- Power Transformer (Selection, Construction, O&M, Testing and Visit to Repair Workshop)
- Renewable Sources and its Integration to Grid including Micro Grid and Battery Energy Storage System
- Power System Protection
- Health / Condition Monitoring of Equipments
- Electrical/ Fire Safety and First Aid

New Delhi
ISO 9001:2015

Central Board of Irrigation & Power

Malcha Marg, Chanakyapuri, New Delhi 110 021, India
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BACKGROUND

- Central Board of Irrigation & Power (CBIP) a premier Institution, setup by GOI in 1927 is serving the nation in the disciplines of Power, Renewable Energy and Water Resources Sectors for more than 92 years.
- It is an exchange and knowledge bank for dissemination of technical knowledge & professional experience to help Engineers/ Professionals to update their knowledge and gain practical know-how.
- CBIP's main objective is:
  - to disseminate technical knowledge through various modes, e.g., publication of technical documents, organizing conferences /workshops
  - to provide specialized training to the professionals in the Power, Renewable Energy and Water Resources Sectors.
- CBIP realizing the importance of competency development and with the aim to create large reservoir of highly qualified manpower in all fields related to engineering, technology & technology management has recently signed an MoU with ABB India Limited for jointly providing hands on training to the professionals for skill development.

TRAINING ACTIVITIES OF CBIP

- CBIP has imparted trainings for more than 1,50,000 man-days to various professionals in the country
- Considering massive requirement of trained manpower in India, CBIP has established a Centre of Excellence at Gurugram (Haryana), in the year 2013, for imparting long/short term trainings
- CBIP has been recognized by Ministry of Power, Government of India, as Category-1 institute for providing training for skill upgrade in the field of Hydro, Thermal, Transmission & Distribution and Power Management, Renewable Energy, including Solar Power Development, in the recent years
- To fulfil the objective of Government of India for imparting skill development courses, CBIP has been recognized as a Training Provider by NSDC, PSSC, SCGJ and CBIP provides Post Graduate Diploma in Transmission and Distribution in Engineering and Post Graduate Diploma in Thermal Engineering to B. Tech. Engineers.
- CBIP has undertaken construction of another building as part of extension of its Centre of Excellence, in Gurugram (Haryana).
- In view of difficulties faced by power utilities, CBIP started Door Step Training at the project sites and already carried out training programs in various states like Chhattisgarh, Gujarat, Haryana, Kerala, Karnataka, Maharashtra, MP, Rajasthan, U.P., Uttarakhand and also for organisation like SJVNL, NHPC, BBMB etc.

WHY HANDS ON TRAINING?

As workshops with class room sessions help to understand the concepts, it is important to blend the practical demonstrations with theory for engineers to put the knowledge into practice. This is challenging as the equipment installed at working substations are not available for experimentation and exploring the same to test different concepts and theories learnt. Hands-on training will help participants to explore and see the concepts working in the field.

These workshops and trainings will help the participants to effectively perform with higher productivity and bridge the gap between today's industry demand of highly adaptive workforce and competency development needs thereby creating excellency in the industrial working.

BENEFITS OF HANDS ON TRAINING

- Accentuating the technical knowledge of Power Engineers in the organization resulting in lesser breakdowns in utilities.
- Create future engineers in the field of power system to handle classic and futuristic technology in the area of rapidly developing power system
- Avoid major failures of costly equipment's
- Lesser maintenance expenditure of the organization & Savings in revenue
- Improved efficiency
- Customized courses as per requirement
- One to one interaction with experts
- Networking with colleagues
- Develop Confidence and Build new skills
- Develop Group Dynamics

WHO SHOULD ATTEND?

The workshops and training programs are open to various utilities and industry organizations / individuals in the field of power system.

OUR FACULTY MEMBERS

- CBIP customizes all training programs with Utilities based on their specialized needs. CBIP associates highly experienced and renowned faculty members from industry & Power Sector Utilities to share best possible knowledge & experience sharing during such programs. Based on the training course selected we can arrange proficient faculty members.
- CBIP has in house team of Experts having indepth knowledge of conducting various training programmes.
- CBIP has membership of more than 200 organizations: Most of the organizations (Govt. & Private) of Indian Power Sector & Renewable Sector involved in generation, transmission & distribution of Power are the members of CBIP.
- Great networking and close relations with all reputed utilities of power & renewable sector of the country
- Easy access to the reputed and highly experienced experts through data base of Sr. experts in various areas of Power Sector and Renewable Sector

- Associated with 5 International organizations. CBIP pools technical knowledge available at International level with their help.

VENUE FOR THE COURSES

ABB Power TEC™, ABB India Limited, Maneja, Vadodara

COURSE FEE

- The duration for the training will be for 3 days.

(a) Without Accommodation and Transport

- The registration fee will be Rs 30,000/- per participant + 18% GST. It will cover the professional fees, working lunch, Tea / coffee/snacks during the course.

(b) With Accommodation and Transport

- In case of participants requiring hotel accommodation, the registration fee will be Rs. 40,000/- per participant + 18% GST. It will also cover the accommodation on twin sharing basis for 3 nights, dinner in hotel and local transport from place of stay to the venue.
- Accommodation on Single sharing basis or for additional nights can also be arranged on additional charges from the individual.

GST No. : 07AAAJC0237F1ZU

THE DETAILS ABOUT TOPICS, CONTENTS, AND DATES ARE AS GIVEN BELOW:

WS 1 : HV Gas Insulated Switchgear

Date : 27-29 May 2019

- Evolution, Basic Design, Basics of SF6.
- Comparison of different arc interrupting principles.
- Comparison of AIS V/s GIS.
- Specifications and standards
- Basic Concepts of GIS System Engineering.
- GIS Components - Circuit Breaker, Current Transformer,
- Voltage Transformer, Isolator, Fast acting earth Switch,
- Enclosures, and Insulators.
- Different Interconnection arrangements in GIS
- System engineering of GIS - layout, earthing, VFTO and scheme diagram etc.

WS 2 : HV and EHV Switchgear

Date : 12-14 June 2019

- Interrupting principles
- Breaker components: interrupters and operating mechanisms.
- SF6 properties, SF6 gas filling and handling.
- Overview of erection, commissioning,
- Operation, Maintenance and troubleshooting
- Role of instrument transformers,
- Design Parameters, Magnetization, Ferro resonance
- CT & CVT selection parameters
- Manufacturing & Testing
- Storage, Transport, Installation, operation – Do's & don't commissioning
- Maintenance & troubleshooting

WS 3 : Distribution Transformer, System and Automation

Date : 17-19 July 2019

- Basic Electrical Concepts regarding Transformers
- Working principles, core, winding, losses etc
- Introduction to Transformers –
- Construction, Operation, accessories, cooling methods, transformer connections
- On Load Tap Changer
- Transformer losses and failure reduction
- Dry type transformer

WS 4 : Power Transformer (Selection, Construction, O&M, Testing and Visit to Repair Workshop)

Date : 18-20 September 2019

- Basic Concepts regarding Transformers and Reactors, Working principles, core, winding, losses.
- Construction, Operation and maintenance, accessories, cooling methods
- Transformer connections – start, delta, Zigzag on Load Tap Changer
- Transformer losses and failure reduction
- Inspection and test procedures commonly performed on transformer
- Visit to Oil Lab for BDV, DGA test etc.
- Visit to Repair workshop for demostration of test like SFRA and others
- Test result analysis and interpretation
- Premature failure of Transformers
- Factory Visit to understand manufacturing process and Testing

WS 5 : Renewable Sources and its Integration to Grid Including Micro Grid and Battery Energy Storage System

Date : 20-22 November 2019

- Different types of renewable generation and their behaviour pattern
- Microgrid concepts
- Various types of controllers and its functions in Microgrids
- Energy storage, its role, type of storage and typical applications
- Grid Stabilization
- EV charging as Microgrid component
- Voltage Ride Through (LVRT & HVRT), Flicker, Sudden V Change, Protection Coordination
- Regulations and grid codes related to renewable energy
- Demonstration on live micro-grids, battery energy storage system.
- Visit of 10 MW renewable plant and SLDC Complex.

WS 6 : Power System Protection

Date : 18-20 December 2019

- Introduction to Protection System (General Protection, Distance, Differential and Bus Bar Protection covering basics, Application and Setting Calculations).
- Instrument Transformers and Applications.
- Feeder Protection covering Basics, Application, Settings, Backup O/C Protection & E/F.
- Transformer Protection covering Basics, Application, Settings, Differential Protection Philosophy, REF, Backup Protection.
- Feeder / Transformer relay Testing with testing kit for Settings, Fault Creation, Control of Breakers/Isolators).
- Visit of Relay Manufacturing Factory and Automated Testing Processes.
- Demonstration of Disturbance Recorder Upload, Sequence of Event upload and analysis of the Fault.
- User Experience sharing Sessions with IEC 61850 Communication with different make of relays.

WS 7 : Health / Condition Monitoring of Equipments

Date : 22-24 January 2020

- Concept of Condition monitoring
- Degradation of Insulation
- Significance of loss angle measurement
- SFRA fundamentals, concept, analysis & measurement
- Leakage current monitoring
- Contact resistance measurement & DCRM
- Introduction to Digitalization and recent trends in power system.
- Digitization of primary equipment such as circuit breaker, transformer etc. and its impact on system performance.
- Digitization of secondary equipment and understanding of merging units, IEDs and its impact on power system performance.
- Improved system performance through digitization and CSD, FACTS, STATCOM.

WS 8 : Electrical/ Fire Safety and First Aid

Date : 3-5 March 2020

- The Electrical Safety Rules
- Electrical Incidents and Common Themes and a Way Forward
- Defining Electrical Competency
- Assignment of Roles and Responsibilities
- Planning and Preparation – Risk Assessment/JHA/Method Statement
- 7 Steps to Safety
- Voltage Detectors – Ratings, Calibrations, etc.
- L.O.T.O, Group LOTO, Earthing/Grounding
- Standardized permit to work (PTW) and PTW process
- Hazards of Electricity (Shock, Arc Flash, Arc Blast) Arc Flash - Burns
- Insulated PPE and Arc-Flash Workwear/PPE
- New Arc Flash Clothing and PPE Matrix – Application of the Matrix
- HV and MV switching and switching scenarios and plans/Isolation and Control/Clearances/Industrial and Utility environments
- Single line diagrams, drawings, schematics, and safety signs/ barricades
- First aid and human factor training

TO REGISTER

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

Title of training _____

Name: _____ Designation: _____

Organization: _____ Mailing address: _____

Phone / Fax/E-mail: _____

PAYMENT

Payments of registration fee 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,

Address : 209-214, Kailash Building, 26 Kasturba Gandhi, Marg, New Delhi 110001

Saving Bank Account No. : 00031110004411; Swift Code: HDFCINBBDEL; IFSC: HDFC 0000003 MICR Code: 110240001

ADDRESS FOR CORRESPONDENCE

V.K. Kanjlia, *Secretary*, CBIP

P.P. Wahi, *Director*, CBIP

Nodal Officer: **Shri I.B. Srivastava**, *Adviser*, M : 8130759549, **Shri Vishan Dutt**, *Chief Manager,* M : 9841331554

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CBIP CENTRE OF EXCELLENCE AT GURGAON

Long Term Training Programs offered by CBIP Centre of Excellence at Gurugram

Sl. No	Program	Duration
1.	Post Graduate Diploma Course in Operation & Maintenance of Transmission & Distribution System as per CEA Regulation 2010	182 Days
2.	Post Graduate Diploma Course in Power Plant Engineering as per CEA Regulation 2010	365 Days
3.	Post Graduate Diploma Certificate on Distribution System Engineering as per CEA Regulation 2010	90 Days
4.	Post Graduate Diploma in Civil Construction, Planning & Designing	182 Days

For more Details Please Contact :

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ABOUT ABB POWERTEC™

ABB PowerTEC™ is India's leading technology and knowledge institute with state of art facility for practical training and learning in futuristic and current power engineering, power automation and digital technologies.

Designed to be India's leading technology and knowledge institute, ABB PowerTEC™ imparts training and learning in futuristic and current power engineering, power automation and digital technologies. Thus enabling a stronger, smarter and greener grid, industrial installations and urban transportation.

With decades of unparalleled domain knowledge and experience, ABB's expert team of trainers offer hands-on training across the value chain of generation, transmission, distribution, transportation, services and safety, under a single roof. This future-proof facility integrates best-in-class demonstrations and in-depth technical proficiency to upskill up engineers to make in India and neighbouring countries, all while optimizing your operations.

Training programmes conducted so far:

- 70000+ man days of training power system professionals completed so far
- Courses covering entire value chain with Expertise across generation, transmission, distribution and transportation
- Courses in the area of
  - Electrical Safety
  - High Voltage Switchgear (up to 1,200 kV), Transformers
  - Medium Voltage Switchgear and protection
  - Power system studies, Power system earthing
  - Condition monitoring of switchyard & asset performance management
  - Digitalization of Powergrids, Microgrids & BESS
  - HVDC & FACTS

Key Faculty Members for Training

We arrange Eminent & Proficient International/National level experts and consultants with their immense technical knowledge and expertise in the respective fields as faculty Members. Details of some of the senior experts are given below :

MR. P. RAMACHANDRAN

P Ramachandran started his career in transformer industry from 1966 at a Hitachi Joint venture in India-TELK, Kerala. He has been employed at ABB India since 1999 and currently works as Technical Advisor with Power Products Division of ABB. He received his Bachelor of Science in Electrical Engineering from the University of Kerala, India and Master of Business Administration from Cochin University, India. He is a Fellow of Institution of Engineers (India) and represented India in CIGRE Study Committee A2 for Transformers during 2002-2010.

MR. N.S. SODHA

- Former, ED, POWERGRID & Current Chairman of CIGRE National Study Committee on Information & Telecommunication
- Over 39 years of rich experience of in Indian Power Sector in Project Implementation of EHV Substations, Design and Engineering of Load Dispatch and Communication facilities
- Active Member of BIS committees. Chairman of ETDC, BIS and ETD 30 on SURGE ARRESTERS.
- Member of ISGFT (MoP)

MR. S.G. PATKI

- Former Chief- QA,I&T, The Tata Power Co. Ltd., current Chairman of CIGRE National Study Committee on Protection and automation;
- Over 37 years of professional experience Electrical Testing and Commissioning, Power system Protection and Automation, O&M of T & D, Engineering and procurement, IT services;
- Associated with several national and International committees/ working groups at national and international level in areas of Electrical condition monitoring, Power system protection and Automation, Metering;
- Represents India in CIGRE the Study Committee on Power System Protection and Automation.

MR. N.N. MISRA

- Former Director (Operations), NTPC Ltd.;
- Over 37 years of rich experience in NTPC as Power Engineer in various functional areas in Electrical Design of Project Engineering, Corporate Contracts & Materials, Human Resources and Operation Services;
- Actively associated with BIS and was a member of Electro Technical Divisional Council of BIS;
- Represented India in CIGRE study Committee on High Voltage Equipment

MR. A.K. SINHA

- Worked with Siemens in Germany and India in different capacities;
- Over 40 years of experience in the area of SCADA and Automation Systems, including, Design, Testing, Commissioning and Maintenance of these systems;
- Involved in SCADA System applications, Energy Management System & other applications relevant for Power Systems;
- An Independent Consultant, provided consultancy to premier institutions.

MR. M. VIJAYAKUMARAN

- Sr. Technical Expert, ALSTOM Ltd. & Current Chairman of CIGRE National Study Committee on Transformers;
- Over 40 years of experience in EHV Power Transformer & Reactor Technology.
- An active member of CIGRE and represents India in the Study Committee on Transformers
- Active Member in Indian Standardisation Committee (BIS); ETD 16 on Transformers and TC 3 on insulating materials; ETC

MR. NEERAJ KHARE

Mr. Neeraj Khare is a graduate Electrical Engineer, also having post graduate diploma in management. He is current managing director of Adishaktyai India, New Delhi and former G.M. and Head -Transformer Reconditioning Group, BSES Rajdhani Power Ltd, New Delhi. He is having 20 plus years experience, in the field of transformers and has worked with organizations like BSES Rajdhani Power Ltd., Crompton Greaves Ltd. and EMCO Ltd. He is member of CIGRE, IEEE, CBIP, SESI (Solar Energy Society of India) and QCFI (Quality Circle Forum of India). He is also associated with NPTI (National Power Trainer Institute) and PSSC (Power Sector Skill Council), as a trainer and resource person. He is Fellow of IEI (Institute of Engineers India) and Certified Charted Engineer. He is Fellow of IOV (Institution of Valuers) and approved valuer.

MR. MANAS KUNDU

Mr. Kundu is currently looking after Market Development Programs for power quality, transformer, sustainable development and electrical safety. He is country manager for Asia Power Quality Initiative (APQI) and responsible for growth of Copper Market in Utility and Building Domain of West Asia / SAARC Region. Manas comes with 30 plus years of application engineering, techno-commercial and business development experience in energy services consultancy, the utility sector and in electricity regulation. Manas earlier worked as Director (Technical) with the Maharashtra Electricity Regulatory Commission, Mumbai for 7 years. He was responsible for implementation of the Electricity Act 2003 in the State.

MR. NIHAR RAJ

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.