

CBIP Offers ONLINE PRACTICAL TRAINING

In collaboration with State of the Art Training Center
**ABB Power TEC for Skill Development of Professionals and
Utilities in the Power Sector**

Virtual Instructor led Training Program by CBIP in collaboration with
ABB PowerTEC, Vadodara



Topics for Online Practical Training

- Power System Earthing
- HV Gas insulated switchgear
- Substation engineering
- Electrical Safety
- Transformer
- HV and EHV Switchgear
- Power Quality Aspects in Industry and Utility
- Power System Protection
- Indian Grid Codes
- SCADA System



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 for providing online 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 ONLINE PRACTICAL TRAINING?

With COVID19, all are settling with "new normal" way of working. In this new situation, skill enhancement and training of professional has emerged as a very important aspect and a challenge. During 2019, CBIP has successfully completed many workshops for hands on training with excellent participation and feedback. Online training is our attempt to continue giving nearly hands on training experience to participants.

These online 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 ONLINE PRACTICAL 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
- Develop Confidence and Build new skills
- Develop Group Dynamics

UNIQUE FEATURES OF ON LINE PRACTICAL TRAININGS

- Training with high safety of participants w.r.t. COVID19 as no travel is involved
- No travel related costs
- Learning and working balance as our sessions are planned for half day
- Flexibility to join via android / ios mobile phones
- Well proven online platform with high cyber security.
- Live message chat, Live voice chat, polls and Quiz Real time engagement
- Virtual tour to Manufacturing shops
- Experts Panel discussions with Case studies
- Working Group Discussion within participants
- Demonstration of practical aspects through videos
- E-Certificates

Note :

- (a) Audio/video recording is prohibited however the presentations will be send to the mail of the participants
- (b) CBIP will not be responsible for any quality and interruption of audio/video due to poor internet connectivity at the customer end
- (c) Online training session link will be provided to the participants only. Forwarding the link to other person is strictly prohibited
- (d) The participants will be required to adhere the time schedule fixed for the training

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 programs.
- 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.

COURSES

Online courses conducted by CBIP in collaboration with ABB PowerTEC

COVID 19 SPECIAL REGISTRATION FEE

The duration for each on line training will be of 3 days (2 hrs on each day) out of which 1hr 30 minutes will be for technical session followed by 30 minutes for question/ answer session. The Registration fee for each training will be Rs. 5,000/- participant (for 3 days)

- 18% GST will be extra.

The program is limited to 200 participants. Which will be on First cum First serve basis.

THE DETAILS ABOUT TOPICS, CONTENTS, AND DATES ARE AS UNDER:

WS 1 : Power System Earthing

Date: 16-18 June 2020 (15.00 to 17.00 hrs daily)

- Basic concepts of earthing and disadvantage of poor earthing
- Electrical properties of soil and measurement
- Earth potential rise, step and touch potential concepts
- Fundamentals of overhead line earthing, Cable earthing, Equipment earthing
- Industrial earthing and safety
- Basics of Lightning and surge protection
- Overview of Earthing system design and case studies



WS 2 : HV Gas Insulated Switchgear

Date : 14-16 July 2020 (15.00 to 17.00 hrs daily)

- 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 3 : Substation Engineering

Date : 11-13 Aug 2020 (15.00 to 17.00 hrs daily)

- Switchyard Basics, various Switching configurations.
- Basics of protection philosophy for different bus configurations
- Layout engineering (Basic considerations)
- Overview of substation design calculations
- Statutory obligations and safety aspects in substation
- Equipment and accessories
- Optimization through technology development



WS 4: Electrical/ Fire Safety and First Aid

Date : 15-17 Sept 2020 (15.00 to 17.00 hrs daily)

- The Electrical Safety Rules
- Electrical Incidents, 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 Work wear/PPE
- New Arc Flash Clothing and PPE Matrix – Application of the Matrix
- HV and MV switching and switching scenarios
- Single line diagrams, drawings, schematics, and safety signs/barricades
- First aid and human factor training



WS 5 : Power Transformer

Date : 13-15 Oct 2020 (15.00 to 17.00 hrs daily)

- Basic Electrical Concepts regarding Transformers and Reactors
- Working principles, core, winding, losses etc
- Introduction to Transformers & reactors – Construction,
- Operation, accessories, cooling methods, transformer connections – start, delta, Zigzag
- Inspection and test procedures commonly performed on transformer
- Erection, testing and commissioning



WS 6 : HV and EHV Switchgear

Date : 17-19 Nov 2020 (15.00 to 17.00 hrs daily)

- 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 7 : Power Quality Aspects in Industry and Utility

Date : 15-17 Dec 2020 (15.00 to 17.00 hrs daily)

- Introduction to power quality
- Power quality parameters and causes of poor power quality
- Impact of new demand and new generation on power quality
- Economical impact
- Typical Harmonic and voltage sag issues for industries and utilities
- Power quality analysis and mitigation
- CEA Regulation on Power Quality
- Discussion on field issues



WS 8 : Power System Protection

Date : 19-21 Jan 2021 (15.00 to 17.00 hrs daily)

- Introduction to protection system
- Protective devices
- Line protection, Transformer protection, bus bar protection
- Analysis of disturbance recorder, sequence event and fault recorder for effective fault analysis
- Trouble shooting of protection relays



WS 9 : Indian Grid Codes

Date: 16-18 Feb 2021 (15.00 to 17.00 hrs daily)

- Overview of Indian grid codes and challenges
- Grid code impact on utility, developer and OEMs
- Main connections (general principles, connection process and technical requirements)
- Generating facilities (steady state and dynamic grid support, adaptation of active power, protective devices, verification of electrical properties, activation conditions and synchronization)
- Panel discussion: grid code requirement due to futuristic demand w.r.t. COVID19



WS 10 : Supervisory Control and Data Acquisition (SCADA)

Date: 16-18 March 2021 (15.00 to 17.00 hrs daily)

- SCADA and it's applications
- Drawback of conventional substation and use of Digital substation
- Sub - station Automation
- Different types of communication protocol
- Communication media and communication network
- Automation devices and their functioning: R.T.U, P.L.C, Distributed control system, I.E.D
- SCADA Software architecture and functions
- Process control system and security
- Role of SCADA in Power Sector: Energy Management System, Outage Management System, Distributed Management System etc.



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: _____

Note: After registration, the participants will be provided the link 1 day prior to the session to participate in the Technical session

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

G.P. Patel, Secretary, CBIP

A.K. Bhatnagar, Director, CBIP

Nodal Officer : Shri S.K. Batra, Chief Manager, M : 9811943812

E-mail : batra@cbip.org

Central Board of Irrigation & Power, Malcha Marg, Chanakyapuri, New Delhi - 110021

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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, APPSIL'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 ABB Power Products and Systems India Ltd. 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 CIGREtheStudy 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 Chartered 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. 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.