VIDYUT ANUSANDHAN SAMACHAR

QUARTERLY NEWSLETTER

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CENTRAL POWER RESEARCH INSTITUTE

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Contents

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Compiled and Edited by Business Development Division

ABOUT CPRI

Central Power Research Institute (CPRI) was established by the Government of India in 1960. It became an Autonomous Society in the year 1978 under the aegis of the Ministry of Power, Government of India. For the last six decades, CPRI has been rendering dedicated service to the Power Sector.

Over the years, CPRI has developed expertise in Generation, Transmission, Distribution Systems and has established world-class facilities for research and testing in the areas of High Voltage, High Power, Short Circuit, Power Capacitors, Power Cables, Solar PV, Smart Metering & AMI, Power System Studies, Energy Studies, Tower Design, Vibration Studies, Seismic Performance, Liquid Dielectrics, Diagnostics, Condition Monitoring, Cybersecurity, Smart Grid Systems, Energy Storage, RLA studies and development of newer materials for Power Sector.

Activities of CPRI

- Applied Research in Power Systems Engineering.
- Independent Third-Party National Laboratory for Testing & Certification
- Consultancy & Field-Testing Services

DIRECTOR GENERAL's MESSAGE

I deem it great privilege to accept the additional responsibility of Director General of CPRI and thank the Ministry for the same. I also take the opportunity to convey my best compliments to former DG Shri. B A Sawale for having steered the organization effectively with significant achievements to his credit during his tenure.

It also gives me pleasure to place before you the issue of 'Vidyut Anusandan Samachar' for the quarter April - June 2025. The period marks remarkable progress with regard to entering into MoUs with notable academic institutions namely with IIT Dharwad, Pondicherry University, IIT Ropar and regulatory body namely Madhya Pradesh Electricity Regulatory Commission (MPERC) for collaborative research.

Our officers continue to excel in publishing technical papers in peer reviewed reputed journals. The 134th Birth Anniversary of Bharat Ratna Dr. B.R. Ambedkar was celebrated meaningfully across the units of CPRI during the period.

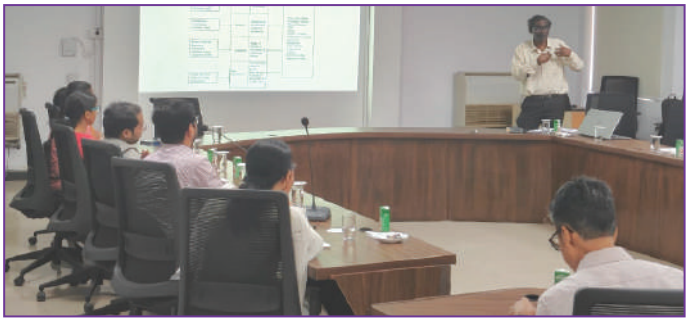
I wish all the best for the CPRI employees for their continued day to day efforts in upholding the goals and mission of CPRI.

Shri. Asit Singh,
Director General, CPRI

RESEARCH HIGHLIGHTS

Key Research Highlights

- The second open seminar of Shri. Shivakumar V (Joint Director & HoD, SGRL), Ph.D. Scholar (Engg.) of CPRI, VTU Research Centre was conducted on 22nd April, 2025 at CRTL Committee Room.



- Dr. Sukumar Kamalasadan, Professor of Electrical Engineering in the Department of Electrical and Computer Engineering at University of North Carolina at, Charlotte, NC, USA has been appointed as visiting Chair Professor of CPRI at IISc, Bengaluru. During his visit to CPRI Prof. Kamalasadan interacted with the scientists and engineers and provided valuable inputs for the ongoing research projects. He also delivered a technical talk on "Inverter Based Resources: Challenges, Opportunities and Modeling Methods".

- The '19th meeting of the Technical Committee on Thermal Research' was conducted on 29th April 2025 through virtual mode. The agenda included review of seven ongoing projects. The meeting was chaired by Prof. Gautam Biswas from IIT Kanpur and attended by representatives from CEA, BHEL, the SAMARTH Mission Directorate and CPRI.
- The '19th meeting of the Technical Committee on Transmission Research' was conducted on 23rd June 2025 through virtual mode. The meeting was chaired by Prof. Shanti Swarup from IIT Madras and attended by representatives from CEA, POWERGRID and CPRI.
- The '32nd meeting of the Standing Committee on R&D (SCRD)' was conducted on 28th June 2025 through virtual mode. The meeting was chaired by Chairperson CEA and attended by representatives from CEA, POWERGRID, IITs, NHPC and CPRI.
- A series of meetings pertaining to SAMARTH Mission were conducted. This included a meeting on 'Semi-torrefied biomass pellets' conducted by CEA on 23rd April 2025 through virtual mode. The special meetings of Sub-Group -1 (SG-1) of SAMARTH mission were conducted on 15th May 2025, 17th June 2025, Executive Committee meeting on 18th June 2025 and the Steering Committee meeting on 20th June 2025.

Project under focus

Project Investigator: Dr. V. Saravanan, Additional Director

Project Title: Study on combustion kinetics of biomass/torrified biomass-coal blend through experiments and predictions on the combustion behaviour of biomass/torrified -coal blends in the pulverized coal boilers.

Objectives

- Study on the combustion kinetics of biomass/torrified biomass-coal blend for application in the pulverized coal boilers through advanced techniques.
- Predictions of the combustion behaviour of biomass/torrified coal blends in large scale utility boilers through CFD modelling.

Key Findings

- The biomass and the torrified biomass burn at a faster rate compared to coal. The raw biomass is more reactive compared to torrified biomass and coal. This is attributable to the higher volatile content in the case of raw biomass compared to torrified biomass and coal.
- CFD modelling was carried out up to 30 % of rice husk with the experimentally obtained kinetic parameters for 210 MW Boiler.
- Up to 5% rice husk (30 MWt energy equivalence), there is no significant variation in the combustion profile in the boiler compared to coal firing. One elevation firing with single mill can be used without retrofitting. In case of higher proportions, more than one elevation (one mill) needs to be used and for 30 % (180 MWt energy equivalence), all the mills need to be used for avoiding localized higher temperatures.
- The increase of rice husk in the range of 30 % increases the concentration of volatile release near burner ports this causes localised increase in temperature aids in the faster ignition of fuel particles, however may lead to NOx formation, chances of burner component failure.
- Retrofitting like Low NOx burner and high temperature coating on the burners are essential when the biomass proportion is increased in the range of 30%
- The torrified rice husk has lower reactivity compared to biomass but higher reactivity compared to raw biomass. This is basically due to the reduction in volatile content from raw biomass to coal. There is a delayed combustion observed in respect of torrified rice husk compared to raw rice husk. This is due to the low reactivity of torrified rice husk due to reduced volatile content.
- The reactivity has significant impact on the burning profile in the boiler. The temperature near goose neck region has got increased due to the delayed combustion of terrified rice husk.

As the density of torrified biomass is very less compared to coal, if the volatile content of the terrified biomass reduced below 50%, it may increase the unburnts in the fly ash.

VIPs VISIT to CPRI

- Shri. Pankaj Agarwal, IAS, Secretary (Ministry of Power) and Shri. Mahabir Prasad, IRAS, Joint Secretary & Financial Advisor (Ministry of Power) visited CPRI, Bengaluru on 22nd May 2025. Shri. S. Sudhakara Reddy, Director CPRI welcomed the dignitaries.

Director CPRI welcomes Secretary, MoP

Secretary at High Power Laboratory

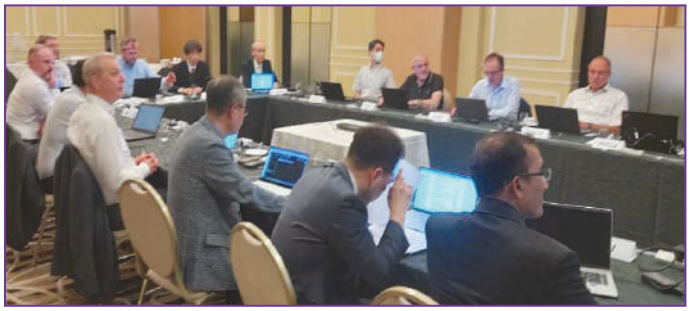
Tree plantation - Go Green Initiative

Tree plantation by Secretary Power

Tree plantation by Joint Secretary MoP

TECHNICAL SPOTLIGHT

- Short Circuit Testing Liaison (STL) Management Committee Meeting held on 21st to 22nd May, 2025 at Kyoto, Japan. Shri B.A. Sawale, Director General and Smt. Sumbul Munshi, Additional Director, CPRI attended the 51st Short Circuit Testing Liaison (STL) Management Committee Meeting



- CPRI has entered into an MoU with IIT Dharwad on 11.04.2025 for fostering academic and research collaboration.

- CPRI has entered into an MoU with Pondicherry University on 24.04.2025 for fostering academic and research collaboration especially in the area of energy storage.

- CPRI has entered into an MoU with IIT Ropar on 30.04.2025 for fostering academic and research collaboration.

- Central Power Research Institute (CPRI) and Madhya Pradesh Electricity Regulatory Commission (MPERC) entered into a Memorandum of Understanding to jointly conduct research on technical challenges, share best practices, and capacity-building for the state's Power Utilities. The MoU was signed in the presence of Hon'ble Chairman, MPERC, Shri Gopal Shrivastava and Director General, CPRI, Shri B.A. Sawale. The officials present during the MoU are Dr. Umakanta Panda, Secretary-MPERC, Shri P.K. Chaturvedi, Member (Technical)-MPERC, Shri Manu Shrivastava, IAS (ACS-NERD), Dr. Venkateswara Rao M., Additional Director (CPRI) and Dr. Sreedevi J., Additional Director (CPRI).

- Mrs. Meena K.P., Additional Director, CPRI, participated in the Electrical Fire Safety Conclave 2025, organized by IEEMA in Bengaluru on 06 June 2025, as a panelist on the topic 'Regulatory Framework: Provisions,Challenges, and Opportunities'."

Special Tests

- Switchgear Testing & Development Station, CPRI Bhopal has carried out 'Ability to withstand dynamic effects of short circuit test as per IEC 60076-5 on 13.36/16.67MVA, 220/√3/66/√3/11kV Power Transformer for M/s. Technical Associates Ltd., Uttarakhand

- Electrical Appliances Technology Division, CPRI Bengaluru has carried out IP 53 category 2 test in Switch ON condition in static mode for LOGISTIC DRONE, 58.8V, 10kW, 200A manufactured by to M/s. SMAC E MOBILITY LLP, Chennai. The IP test has conducted for drone for the 1st time in CPRI. The test is witnessed by Mr. Hrushikesha.K. Mr.Rakshith.L.U (TUV) and Mr. Aniket Patil-EncoComp Solutions Pvt Ltd. Ahamedabad.

OVERSEAS CUSTOMERS

Testing for overseas customers

CPRI is rendering testing services to many overseas customers. Few of the services rendered are listed below;

- Cables & Diagnostics Division, CPRI Bengaluru has successfully carried out type testing on LV Cold pour resin branch joint mounted on 4CX300 Sq.mm XLPE insulated cable with 1.1 kV, 4C X 185 Sq.mm, XLPE Insulated Cable with WT HENLEY resin compound as per BS EN 50393-2015 was conducted for M/s. REPL International Limited., United Kingdom

- Electrical Appliances Technology Division, CPRI Bengaluru has carried out for IP 65 category 1 test on LV CABLE BOX ASSEMBLY,12kV/2406A was conducted for M/s. VOLTAMP POWER SAOC, OMAN, the sample was manufactured by M/s. MPP Technologies Pvt. Ltd., Bengaluru. The test witnessed by Mr. Shashank Kulkarni, Design Head and Mr. Shameer Khan, Design Manager, M/s. Oman transformers India Private Limited.

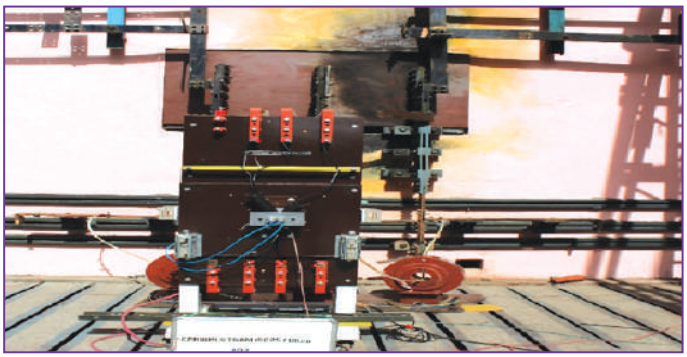
- Cables & Diagnostics Division, CPRI Bengaluru has successfully carried out type testing of 3X 300 sq.mm 19/33 kV XLPE Cable as per IEC 60502-2 was conducted for M/s Doha Cables WLL, Mesaieed Industrial City, P.O. Box 22487, Doha, Quatar for acceptance of the M/s Abu Dhabi National Energy company, TAQA , UAE.

- High Voltage Division CPRI Bengaluru has successfully conducted the Temperature Cycle Test on 170kV,4kVN Solid Core Post Insulator, manufactured by M/s. Insulators and Electrical Company, Mandideep, INDIA. These insulators are intended to be used in Turkish Electricity Transmission Company and the test was witnessed by the officials from M/s. Turkish Electricity Transmission Company and Europower Energy and Automation Technologies San. A.S.

- High Voltage Division, CPRI, Bengaluru has carried out Heat dissipation behavior for 120kV, 10kA, Porcelain Surge Arrester for M/s. McAllen Energy, USA

- Switchgear Testing & Development Station, CPRI Bhopal has carried out short circuit withstand capability test as per IEC 61869-3 on 11kV Resin Cast Voltage Transformer for M/s. Reverie Power & Automation Engineering, Bangladesh

- High Voltage Division, CPRI, Bengaluru has carried out Lightning Impulse Voltage withstand test, Power Frequency Voltage withstand test (dry), Power Frequency Voltage withstand test (wet) for 36kV, 2500A, single phase Neutral Earthing Disconnector for M/s. Any Ohm Sdn., Bhd., Malaysia.
- Switchgear Testing & Development Station, CPRI Bhopal has carried out O-CO shot as per customer requirement on 690V, 100kA LT MPCB for M/s. Schnieder Electric Thailand Ltd., Thailand

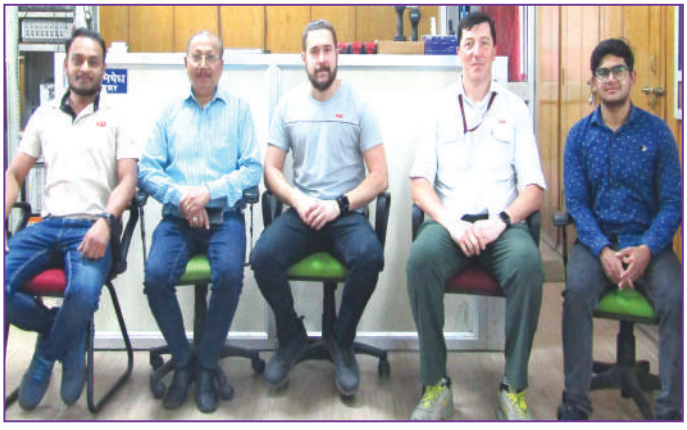


- Switchgear Testing & Development Station, CPRI Bhopal has carried out O-CO shot as per customer requirement on 690V, 100kA LT MPCB for M/s. Schnieder Electric France Ltd., France.
- Switchgear Testing & Development Station, CPRI Bhopal has carried out O-CO shot as per customer requirement on 690V, 85 kA LT MPCB for M/s. Siemens Ltd., Czech Republic.

Visit of Overseas Customers/Important Customers to CPRI:

- Mr. Dorington Omondi Sadia, Mrs. Alice Kabura Theuri, Mr. Walter Oyal Oloo, Mr. Paul Waithaka Mungai & Mrs. Chitra Sampath Narasimhan from M/s. Elemech Engineering, Nairobi, Kenya visited CPRI for witnessing the tower testing of 220 kV D/C Tension Tower Type "H/T" (60-90D) Dev.) with +15M BE during 3rd & 4th April 2025. The test was carried out at Mechanical Engineering Division, CPRI Bengaluru.

- Mr. Andrea D'adda & Mr. Carlo Ghisalberti from M/s. ABB, Italy have visited CPRI for witnessing Test Sequence II, III & IV on MCCB along with representatives from M/s. ABB India Ltd., Bengaluru during 18th March to 20th April 2025. The test was conducted at Switchgear Testing & Development Station, CPRI, Bhopal.



- Mr. Roberto, Mr. Diego Desirello & Mr. Mauro Gamba from M/s. ABB, Italy visited CPRI for witnessing Test Sequence II, III & IV on MCCB for M/s. ABB India Ltd., Bengaluru during 5th to 31st May 2025. The test was carried out at Switchgear Testing & Development Station, CPRI, Bhopal.

- Mr. Alain Colombe Icyuzuzo and Mr. Philippe Nsengiyumva from/s. Energy Development Corporation Ltd. (EDCL), Rwanda, East Africa visited CPRI for witnessing Tower testing of 110 kV D/C Angle Tower Type (Long Span)-" LST (0-10D)" with +8M LE during 2nd June 2025. The test was carried out at Mechanical Engineering Division, CPRI, Bengaluru

- Mr. Mattia Simone from M/s. ABB, Italy visited CPRI for witnessing of Test Sequence II, III & IV on MCCB for M/s. ABB India Ltd., Bengaluru during 9th to 20th June 2025. The test was carried out at Switchgear Testing & Development Station (STDS), CPRI, Bhopal.

INDUSTRY TRENDS

Technical Article

Hardware-in-the-Loop Testing of Power Plant Controller for Renewable Energy Systems Using RTDS

Abstract

With the increasing integration of renewable energy sources (RES) like solar photovoltaic (PV) and wind power, the role of centralized Power Plant Controllers (PPCs) has become critical for maintaining grid stability. PPCs must ensure compliance with grid codes by coordinating the active and reactive power outputs of multiple inverters or static VAR generators (SVG). Due to safety, cost, and scalability concerns, testing these controllers in actual grid environments is impractical. Real-Time Digital Simulation (RTDS) platforms offer a high-fidelity, hardware-in-the-loop (HIL) environment that allows thorough evaluation of PPC functionalities under various dynamic scenarios. This article presents a comprehensive methodology for testing PPCs using RTDS, including voltage and frequency disturbance responses, active/reactive power set point tracking, ramp-rate control, and communication robustness.

Keywords

RTDS, Power Plant Controller, HIL, Renewable Energy, Grid Code

1. Introduction

The rapid penetration of inverter-based renewable energy resources has led to the necessity of advanced control and coordination schemes. Centralized PPCs are mandated by grid codes to respond effectively to system disturbances and ensure proper dispatch of active/reactive power. Real-time testing using RTDS offers a safe, repeatable, and scalable approach to verify PPC functionalities before field deployment. The testing of PPC helps to maintain the voltage and frequency stability within grid. PPC is tested as per requirement under clause 40 of IEGC 2023 regulations and applicable CEA technical standards for connectivity of non-synchronous Generators (Solar/Wind).

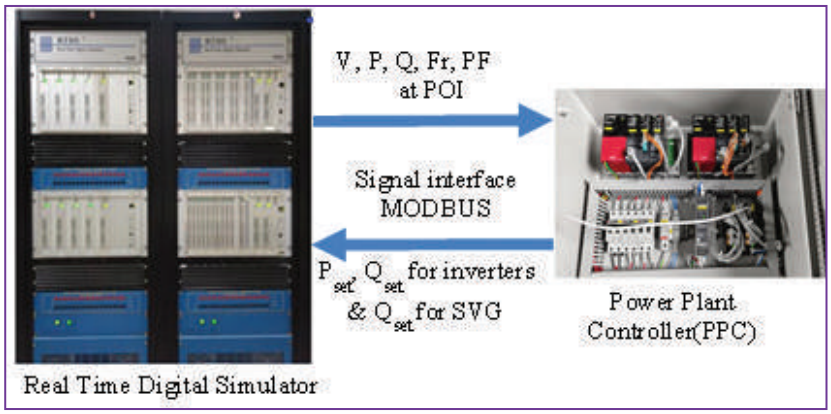
2. Role of Power Plant Controller (PPC)

- Coordination of active and reactive power outputs from multiple units
- Grid code compliance (e.g., FRT, ramp rate limits, voltage control)
- Interface between RES plant and grid operator
- Control strategies:
  - Active power curtailment
  - Volt-VAR control
  - Frequency-watt droop control
  - Dynamic set point tracking

3. RTDS-Based HIL Testing Framework

The 200MW solar plant network includes PV panels connected to a boost converter for Maximum Power Point Tracking (MPPT), followed by a voltage source inverter (VSI). The inverter output is stepped up through a scaling transformer and a main power transformer to reach 220 kV, enabling grid interconnection via a transmission line. A SVG is installed at the plant's Point of Interconnection (POI) to support reactive power compensation and voltage regulation. The grid is modelled as a voltage source behind an impedance, representing the short-circuit strength. Short Circuit Ratio (SCR) at the PCC, which is key indicator of the grid's strength and influence the dynamic performance of the converter-based generation. This model provides a comprehensive platform to test the plant's control and protection schemes under a variety of grid events in a real-time simulation environment.

4. Testing Methodology

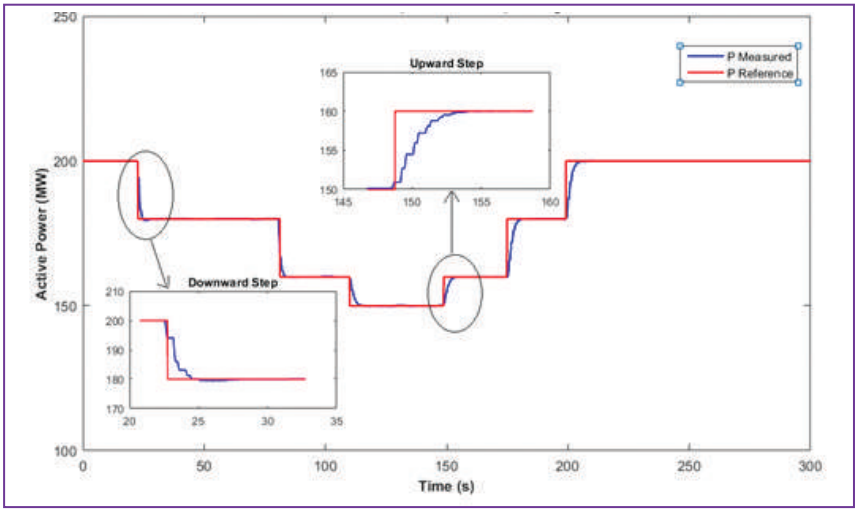


The GTNET communication card of the Real-Time Digital Simulator supports standard protocols such as IEC 61850, Distributed Network Protocol, and Modbus. In this setup, Modbus over Transmission Control Protocol is used to establish communication between the simulator and the Power Plant Controller. This allows real-time exchange of signals between the two systems for accurate closed-loop testing and performance validation. The RMS (Root Mean Square) values of Voltage, Active Power, Reactive Power, Grid frequency & Power factor at POI are continuously measured and transmitted to the PPC. Active power & Reactive power set points of each inverter and Reactive power set point for the SVG are send from the PPC to RTDS. These signals provide a detailed view of the plant's electrical performance, enabling precise monitoring and control.

5. Case Studies

As per the requirements of M/s EIT Automation, extensive testing was carried out on the PPC model to evaluate its dynamic performance and functionality under various grid operating scenarios. The testing covered a wide range of control modes and was executed for two different grid conditions characterized by SCR of 5 and 10, enabling assessment under both weak and strong grid scenarios. The different test cases conducted are (i)Increase and decrease in Grid Voltage Reference (ii) Increase and decrease in Grid frequency Reference (iii) Increase and decrease in Active Power Set Point (iv) Increase and decrease in Reactive Power Set Point (v) Increase and decrease in voltage Set Point at Point of Intersection (POI).

Case of Step Change in Active Power Set points



This case evaluates the PPC ability to track dynamic active power references. The active power set point was varied in multiple steps as shown in the Figure below. The test aims to assess the PPC's control performance during both decreasing and increasing active power set point. The active power (P) reference provided by PPC is going to inverter control and the Power output at the POI is maintained to reference and same is measured and plotted in graph below. Every test case is conducted by CPRI and reviewed for designed operation of the PPC by M/s EIT. For all test cases the action taken by PPC is recorded and detailed draft report is prepared.

6. Conclusion

RTDS-based real-time testing provides a safe and efficient platform to validate PPC performance under varied grid conditions. It enables precise assessment of PPC control functions such as active/reactive power, voltage and frequency droop, power factor, and redundancy, while ensuring compliance and stability. Field testing is often limited by cost, risk, and lack of controllability, creating a gap in fully evaluating PPC behaviour before deployment. RTDS testing bridges this gap by allowing repeatable, risk-free analysis, streamlining tuning, detecting issues early, and ensuring reliable integration of inverter-based renewables.

7. References

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[2] RTDS Technologies Inc., Real-Time Digital Simulator: Applications in Power System Protection and Control, RTDS Technologies White Paper, 2022. [Online]. Available: https://www.rtds.com

[3] Grid-India (formerly POSOCO), Guidelines for Periodic Testing of Power Plant Controller (PPC) of Renewable Energy Plants, Version 1.0, National Load Despatch Centre, New Delhi, April 2021. [Online]. Available: https://grid-india.in

Authors:

Dr. J. Sreedevi,
Shri. Pola Soma Sekhar Reddy

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EXHIBITION PARTICIPATION

Middle East Energy 2025 (MEE-2025)

CPRI has participated in the 49th Middle East Energy Exhibition 2025 (MEE-2025), organized by Informa Markets at the Dubai World Trade Centre from 7th to 9th April 2025. The event was officially inaugurated by Mr. H.H. Sheikh Ahmed bin Saeed Al Maktoum, Chairman of the Dubai Supreme Council of Energy, on 7th April 2025. CPRI showcased its credentials, test facilities and other activities at the exhibition.

The exhibition is a major global event spread across 16 halls, including 17 international pavilions that showcased cutting-edge innovations in the energy sector, primarily focusing on sustainable technologies and the energy transition. This exhibition, saw participation from over 1,600 exhibitors (including CPRI) from more than 90 countries. It has also provided a platform for industry leaders, policymakers, investors, to connect, learn, and collaborate on future energy solutions.

Visitors at CPRI stall, MEE-2025, Dubai

EVENTS

Bharat Ratna Dr. B.R. Ambedkar Day Celebration:

The 134th Birth Anniversary of Bharat Ratna Dr. B.R. Ambedkar was celebrated by Central Power Research Institute, on 23rd April 2025. The Chief Guest for the event was Prof. (Dr.) Sudhir Krishnaswamy, Hon'ble Vice Chancellor, National Law School of India University. Shri B.A Sawale, Director General, CPRI presided over the program.

Prof. (Dr.) Sudhir Krishnaswamy and dignitaries inaugurated the program by lighting the lamp and offering floral tributes to Dr. Ambedkar's portrait. Dr. B. R. Ambedkar Merit Awards were distributed to the children of CPRI employees and outsourced employees of the Institute who have passed 10th/ 12th standard examinations during the year 2023-24.

Inauguration of Newly established EMI-EMC Laboratory at CPRI, Bhopal.

The EMI-EMC laboratory was inaugurated by Shri B. A. Sawale, Director General CPRI on 30th June 2025 in virtual mode. The laboratory has a 3M size Semi Anechoic Chamber with an amplifier room and a control room.

The laboratory will cater EMI-EMC testing comprising of Radiated Immunity, Radiated Emission, Conducted Immunity and Conducted Emission tests for certification of commercial equipment's as per latest National and International standards.

The products that are to be tested in the laboratory are : Communication Networks and Systems in Substations ,Smart Meters, Conventional Electronic Energy Meters, RCBO, MCCB/ACB (up to 200A test current), IT equipment, electronic appliances, Medical equipments, Substation Electronic and IT equipment, Electronic relays, SCADA equipment and other IT / electronic/ Electrical equipment as per IEC 61850-3, IEC 62052-11,IS 14697, IS 16444, IS 15884, IEC 62055-31, 60255-22-3, IEC 60947 series , IEC 61008-1 / IEC 61009-1 , EN55014-2, EN55024 , EN61547 .

Inugaration of new Reception Centre

- The new reception centre at the main gate, of CPRI Bengaluru was inaugurated by Shri. B. A Sawale, Director General, CPRI on 27th June 2025. Officials of CPRI were present during the inauguration.

Swachhta Pakhawada - 2025

'Swachhta Pakhwada – 2025' was observed by CPRI during 16th to 31st May 2025. During this programme, activities like cleaning of CPRI campus, CPRI staff colony, laboratories and office buildings, scrap disposal, recycling of waste paper into value added green products such as file covers, file boards, envelopes, etc., were taken up. Awareness mural painting on the road face of compound wall of CPRI staff colony, Bengaluru, tree plantation, awareness lectures, display of awareness posters, drawing competition, Swachhta Quiz, installation of colour coded dustbins, fogging etc., were also carried out.

Swachhta Pledge administered to staff by the Director General, at CPRI Head Office, Bengaluru

Shramdaan (Group cleaning activity) as part of Swachhta Pakhwada 2025

Officials of CPRI, Bengaluru participating In Shramdaan at Head Quarters, CPRI, Bengaluru

Shramdaan (Group cleaning activity) as part of Swachhta Pakhwada 2025

CPRI Bhopal

CPRI Nioda

CPRI Nagpur

- Switchgear Testing & Development Station, CPRI Bhopal had organized Hindi workshop on "Application of e-Office in Hindi." during 19th June 2025. Shri Dharmendra Jain, Senior Director (IT), NIC, Bhopal had delivered the lecture on application of e-Office in Hindi for day-to-day office work.

- Switchgear Testing & Development Station, CPRI Bhopal condected a TOLIC meeting on 12th June 2025. The Chief Guest of the meeting was Shri Narendra Singh Mehra, Deputy Director, Regional Implementation Office, Bhopal.

ACCOLADES

➢ **Ph.D. Award:** Shri. Somala Arjuna Rao, Joint Director, STDS, Bhopal, has been awarded Doctor of Philosophy (Ph.D.) by Bengaluru University, Bengaluru for the thesis, titled "Investigation on Enhancement of Voltage Regulation in Micro Grid Systems," which presents an intelligent control-based strategy for improving voltage regulation in a 4-bus micro grid. The study employs a Quadratic Boost Converter integrated with advanced controllers and soft computing techniques to optimize the dynamic performance of system. CPRI fraternity heartily congratulates Dr. Somala Arjuna Rao on his accomplishment.

➢ Central Power Research Institute (CPRI), Bengaluru was awarded the "Rajbhasha Jyoti Shield – First Prize" for its outstanding performance in the implementation of the Official Language during 2023–24 under Region 'C'. The award was presented at the Hindi Advisory Committee Meeting organized by the Ministry of Power, Government of India, held at Hotel Ashok, New Delhi on Thursday, 19th June 2025.

The prestigious award was presented to Shri B. A. Sawale, Director General of the Institute by the Hon'ble Minister of Power, Housing and Urban Affairs, Shri Manohar Lal Khattar. Smt. Vidya L. N., Senior Hindi Officer, received the certificate of merit on behalf of the Institute.

The occasion was graced by the presence of Hon'ble Minister of State for Power, Shri Shripad Naik, Secretary (Power), Shri Pankaj Agarwal (IAS), Shri Dheeraj Kumar, Shri. Vastava, Chief Engineer (I/C - Official Language), along with Heads and Representatives of all offices and public sector undertakings under the Ministry of Power, esteemed members of the Hindi Advisory Committee and several distinguished guests.

This recognition is a matter of great pride for the Institute and reflects our unwavering commitment to the promotion and effective implementation of the Official Language – Hindi.

Power Research – A Journal of CPRI is a biannual publication by the Central Power Research Institute, Bangalore, India. The journal focuses on research and innovative applications in the generation, transmission, distribution, utilization, and conservation of electric power within the power and energy sectors. It serves as a platform for technical and managerial professionals across utilities, R&D institutions, planners, industries, and academia.

The journal invites authors to contribute original, high-quality research papers addressing current or futuristic topics of relevance to the power and energy sector, spanning concepts to practical field applications.

All submissions undergo a rigorous peer review process by subject experts. Detailed instructions for authors are available on the journal's official website.

https://cprijournal.in/index.php/pr