



January- March 2026  
Issue No. : 10

## VIDYUT ANUSANDHAN SAMACHAR

### QUARTERLY NEWSLETTER



**CENTRAL POWER RESEARCH INSTITUTE**  
(Ministry of Power, Govt. of India)  
Prof. Sir C V Raman Road  
Sadashivanagar Post Office  
P B No. 8066, Bengaluru- 560080, India  
Website : [www.cpri.res.in](http://www.cpri.res.in)

# Contents

1.	About CPRI	1
2	In The News	2
3.	Research Highlights	3
4.	Technical Spotlight	6
5.	Overseas Customers	8
6.	Industry Trends	9
7.	Exhibition Participation	11
8.	Conference/ Seminar/ Workshop/ Training	12
9.	Events	16
10.	Accolades	17

## CENTRAL POWER RESEARCH INSTITUTE

(Ministry of Power, Govt. of India)

Prof. Sir C.V. Raman Road. Post Box No: 8066,  
Sadashivanagar (P.O), Bengaluru, India, Pincode: 560 080

www.cpri.res.in Ph: 080 2207 2201

Bengaluru|Bhopal|Hyderabad|Noida|Nagpur|Guwahati|Kolkata |Nashik |Raipur



cprimop



cprimop

Compiled & 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 1978 under the aegis of the Ministry of Power, Government of India. For the past six decades, CPRI has rendered dedicated service to the power sector.

Over the years, CPRI has developed expertise in generation, transmission, and distribution systems. It has established world-class facilities for research and testing in the following areas:



*Regional Testing Lab-Noida*

- High Voltage, High Power, and Short Circuit Testing
- Power Capacitors and Cables
- Solar PV, Smart Metering, and AMI
- Power System and Energy Studies
- Tower Design, Vibration Studies, and Seismic Performance
- Liquid Dielectrics, Diagnostics, and Condition Monitoring
- Cybersecurity, Smart Grid Systems, and Energy Storage
- RLA studies and the Development of Newer Materials for the Power Sector

### Key Activities:

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

## Director General's Message

With great pleasure, I wish to place before you the latest issue of 'Vidyut Anusandhan Samachar' for the quarter January- March 2026. This edition highlights the key developments and significant events during the period.

CPRI fraternity celebrated the 66th Institute Day Celebration on 16th January 2026 and the event was graced by Smt Reetu Jain, IES, Economic Advisor, MoP, GoI. CPRI published a Technical Report titled "Glimpses of Power Sector Research – Volume 2", which is a comprehensive compilation of patents granted to CPRI. CPRI participated in the Bharat Electricity Summit 2026 (BES 2026), held under the patronage of the Ministry of Power and successfully organized the 13th International Conference on Power Cables – "CABLETECH 2026" during the event held at Yashobhoomi, New Delhi.

I am also happy to place on record that CPRI excelled in its performance by earning the highest revenue since its inception. I again whole heartedly commend all CPRI employees for their continued dedication and perseverance in contributing to the aims and objectives of the Institute



**Dr. J. Sreedevi**  
**Director General, CPRI**

## IN THE NEWS



### ● Meeting with Hon'ble Minister, New Delhi

Director General attended meeting under the chairmanship of Hon'ble Minister of Power and Housing & Urban Affairs on 08.01.2026 in Conference Hall, Shram Shakti Bhawan, New Delhi, to discuss issues related to testing facilities in CPRI.

### ● Institute Day Celebration - 2026

The Central Power Research Institute (CPRI) celebrated its Institute Day on January 16, 2026, with great enthusiasm across its units country wide. The occasion was graced by Smt. Reetu Jain, IES Economic Advisor, Ministry of Power, Government of India, as the Chief Guest. The key highlight of the celebration was the delivery of the 36th Jawaharlal Nehru Memorial Lecture by Shri D. K. Singh, Distinguished Scientist and Director, HSFC, ISRO. The programme was presided over by Dr. J. Sreedevi, Director General, CPRI.



*Lighting the Lamp by Dignitaries*

The event reflected the Institute's continued commitment to excellence and its significant contributions to the power sector.

### “Glimpses of Power Sector Research” Vol-2.



*Release of Technical Report*

CPRI has published a Technical Report titled “Glimpses of Power Sector Research – Volume 2”, which presents a comprehensive compilation of patents granted to CPRI. The report was formally released during the 66th Institute Day celebrations held on January 16, 2026, at CPRI, Bengaluru by Smt. Reetu Jain, IES, Economic Advisor, Ministry of Power along with Dr. J. Sreedevi, Director General, CPRI; Shri D. K. Singh, Director, HSFC, ISRO; and Dr. T.

M. Rao, Director, CPRI. The publication underscores CPRI's continued contributions to innovation in research in the power sector.

## RESEARCH HIGHLIGHTS

### R&D Schemes of the Ministry of Power

- CPRI facilitated the successful completion of multiple R&D projects in key areas such as biomass utilization, coal–biomass co-firing, combustion behaviour, corrosion mitigation, advanced insulation diagnostics, and EV-integrated microgrid systems, demonstrating significant progress in sustainable and next-generation energy technologies.
- To enhance research visibility and knowledge dissemination, CPRI initiated the publication of outcomes from completed R&D projects on its website for wider stakeholder access.
- CPRI contributed to national R&D governance by organizing and supporting high-level technical and standing committee meetings, leading to the evaluation, approval, and ratification of several research proposals. During the quarter, 13 new projects were approved with a total outlay of approximately ₹14.98 crores, further strengthening industry–academia collaboration.
- CPRI actively supported national energy planning initiatives, including its engagement in the development of the National Electricity Plan.
- The Institute participated in key national missions and strategic forums, such as the SAMARTH National Biomass Mission, as well as technical committees on transmission, grid systems, and energy conservation, reflecting its leadership in the power sector innovation ecosystem.
- An institute-level innovation contest was organized during Institute Day to promote an innovation-driven culture. Five teams participated in the finals, with Shri Jeykishan K, EO2 (ERED), securing first place for the project titled “Indigenous Smart Control Strategy for Enhanced Performance and Grid Resilience in Hybrid PV Systems.”

- Dr. Ramesh Babu P., EO3 (R&DM), received the Best Paper Award at ODICON 2026, earning national recognition for his research in innovative LED driver technology.

### Project in Focus

#### Composition analysis of different types of pellets/briquettes received from unknown sources

by

**Dr. Vandit Vijay**

**Sardar Swaran Singh National Institute of Bio-Energy, Kapurthala**

#### Aim / Objectives

- To collect and analyse raw agro residue viz. paddy straw and other residual biomass, of northern India (Punjab and Haryana) for composition analysis (proximate and ultimate analysis).
- To prepare and analyse pellets generated with varying composition, % of paddy straw content varying from 0-100%.
- To identify compositional arrangement of pellets using database generated from raw agro waste using proximate, ultimate and thermo gravimetric analysis.
- To analyse the database by using appropriate software and development of a methodology for estimation of paddy content in unknown pellets by curve fitting and linear equations.

### Methodology Overview

Consider a mixture of three components A, B, and C, with their proportions summing to 100%. The biomarker concentrations of pure A, B, and C are known, and the biomarker concentration of the mixture is experimentally measured. The goal is to determine the percentage of A in the mixture.

Relationship Formulation:

$$S_m = y_A \cdot S_A + y_B \cdot S_B + y_C \cdot S_C \quad (1)$$

where  $y_A$ ,  $y_B$  and  $y_C$  represent the fractional contents of A, B, and C in the mixture, respectively.

The constraint is  $yA+yB+yC=1$

Regression Model Setup:

Data is generated using:

- a) Synthetic mixtures or
- b) Experimental mixtures

Biomarker concentrations are either calculated using the above equation or determined experimentally. A linear regression of the form  $yA=\beta_0+\beta_1 \cdot Sm$  where  $\beta_0$  is the intercept,  $\beta_1$  is the slope, is then fitted to predict the paddy content from measured biomarker values.

### Challenges Faced during the study

Initially, 108 experiments were performed using mixtures such as PR126+mustard+sawdust, PR126+wheat+mustard+maize+sweet sorghum, and PR126+mustard+pressmud. However:

- Pressmud, a common pellet ingredient, has extremely high ash content (>40%), rendering ash an unreliable biomarker for detecting paddy straw when it is mixed with paddy straw for making mixed pellets supplied to thermal power plants. Other potential biomarkers such as fluoride, bromide, and phosphate were tested, but they were more influenced by soil and water quality than by the intrinsic characteristics of paddy straw. A second round of 126 experiments involving R126+wheat+mustard+maize+pressmud mixtures yielded inconsistent and region-specific results.
- The addition of any new biomass type required a complete re-evaluation of existing mixtures, leading to a rapid increase in the number of possible combinations. As more biomass types would be introduced by vendors, the experimental workload would grow substantially, making it impractical to test every combination individually. Proportionate Study and Silica as a Biomarker

### Proportionate Study and Identification of Silica as a Biomarker

To overcome the limitations, a proportionate analysis approach was adopted. This assumes that

the properties (biomarker concentrations) of a pellet are linearly additive based on composition—reasonable since pelletization is a physical process and does not alter chemical properties.

This approach used vendor-declared biomass compositions and bypassed the need for exhaustive experimental mixing. Silica emerged as a promising biomarker—present in paddy straw at 120–140 g/kg, which is 4–5 times higher than in other residues and additives like pressmud.

### Observations and Inter-Laboratory Validation

An inter-lab validation exercise was conducted between CIRCOT Mumbai, NIBE Kapurthala, and PAU Ludhiana. Unknown pellet and powder samples were exchanged. NIBE used silica, while CIRCOT used biomarkers like manganese to estimate paddy content.

For pellet samples received by NIBE from PAU and CIRCOT, three replicates testing were performed. For pellets received from CIRCOT, the % difference (error) between actual value of paddy % and calculated value of paddy % is low for lower paddy % and higher for higher paddy %. For paddy % of 0, 20, 70, 80, 90 and 100, the % change was 7, 32, 32.26, 38.16, 55.52% and 56.1%. For pellets received from PAU, the trend was opposite as for paddy % of 60, 80 and 90, the % difference was 87.13, 54.93, and 43.38.

For powdered samples received from CIRCOT, the % difference (error) between actual value of paddy % and calculated value of paddy % is low for middle paddy % and higher for higher/lower paddy %. For paddy % of 30, 50, 60, 75 and 85, the % change was 57.77, 19.08, 2.79, 9.03, and 24.77

For powdered samples received from PAU, for mixtures containing paddy straw and mustard straw, the % difference was very low i.e. ~5-6%. However, for powdered samples received from PAU that was a mixture of paddy straw and cotton stalk was extremely high i.e. 33 - 100%.

For powdered samples received from NETRA, the % percentage difference between actual and calculated paddy straw % was <5%. Inter-Laboratory Validation and

## Limitations Key issues observed

### Pellets

- Biomass input during palletization varies widely across pellets due to nonhomogeneous nature of the powdered samples.
- To counter non-uniformity, multiple pellets were ground and sampled. Still, 0.5 g sample size in IC (ion chromatography) limited representativeness.
- Dust and sand contamination, both rich in silica, could artificially inflate silica readings, skewing paddy estimates.

### Powdered Samples

- More controlled than pellets, but still prone to sampling errors.
- Sand/dust contamination again distorted silica levels.
- Inaccurate paddy estimates could result from poor sample representativeness.

### Benefits and Key Outcomes

- Silica, while effective, is sensitive to environmental contamination and should be used in conjunction with other parameters like ash content, manganese, and heating value.
- Vendors could manipulate silica or other biomarkers (e.g., by adding sand), so cross checking multiple parameters is essential. Therefore, it is suggested that in addition to silica, other parameters should also be observed and taken into consideration such as ash content, Manganese (or any other biomarker concentration), heating value, etc. A Specific limit may be set for pellets with more than 50% paddy contents with respect to the stated limit of these parameters.

### Future Scope

A project has been submitted to CPRI titled "Comprehensive biomass collection and analysis from selective paddy-growing regions of India and quantification of paddy straw content in mixed

feed biomass pellets" covering the future scope of work and it has undergone presentation to the SCRD.

The proposed project aims to enhance the accuracy and reliability of paddy straw quantification in biomass pellets through region-specific investigations, advanced biomarker studies, model development, and validation. The future work will focus on:

- Collection & Analysis of samples from more regions: Sample raw agro-residues from major paddy-producing states (Punjab, Haryana, UP, Rajasthan, Uttarakhand, HP, MP, Chhattisgarh, Odisha, Andhra Pradesh). Analyse for proximate values, anions ( $F^-$ ,  $Br^-$ ,  $SO_4^{2-}$ ,  $Cl^-$ ,  $PO_4^{3-}$ ), cations ( $K^+$ ,  $Na^+$ ,  $Mg^{2+}$ ), transition metals (Cu, Ni, Zn), and silicates, total ash, moisture content, volatile matter and heating values.
- Biomarker Identification for a specific region: Identify region-specific biomarkers with significantly higher levels in paddy straw compared to other residues.
- Proportionate Study: Conduct proportionate studies using selected biomarkers with 4–5 biomass species to understand concentration behaviour in mixtures.
- Database & Model Development: Analyze data to derive linear equations for estimating paddy content based on biomarker concentration.
- Testing & Validation: Interlaboratory validation of results will be done to test the efficacy of the model wherein representative biomass and pellet samples will be shared with laboratories to cross-check results, ensuring reproducibility and robustness.
- Benefits visualized A validated region-specific biomass database. Predictive models and SOPs for paddy quantification. Mixture Composition Recommendations - %Mix with different biomass in different regions to resemble coal Technical recommendations for policy and industry.

## TECHNICAL SPOTLIGHTS

### First Time Test

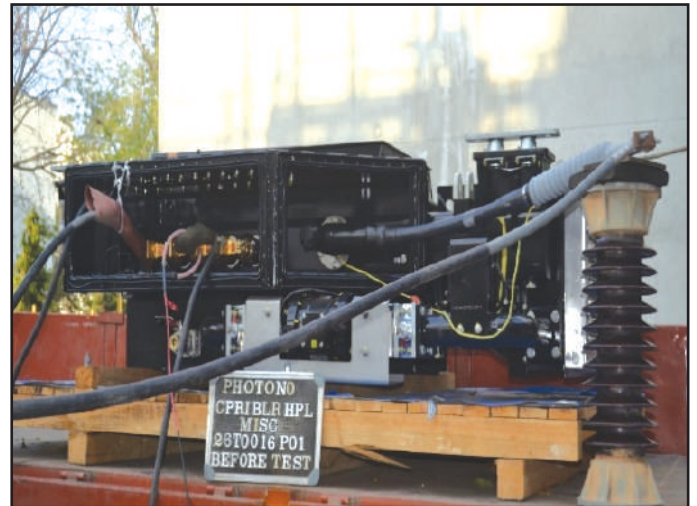
- The Switchgear Testing & Development Station (STDS), Bhopal, successfully carried out, for the first time, a Control/Electronic Elements Surge Withstand Capability (SWC) test, along with Damped Oscillatory Wave Immunity and Fast Transient Burst tests, in accordance with IEC 62271-111:2019 standards. These tests were conducted on a control panel for Automatic Circuit Recloser for M/s. Nikum Energy Control India Ltd., Ghaziabad, Uttar Pradesh, marking a significant milestone for the Energy Meter Test Laboratory.



- The UHV Research Laboratory (UHVRL), CPRI Hyderabad, successfully conducted, for the first time, a Temperature Rise Test on an 800 kV, 2500 A OIP Bushing for M/s. Bharat Heavy Electricals Limited, Bhopal, at its indoor test laboratory facility.



- The High Power Lab, CPRI, Bengaluru, successfully carried out Dynamic SC test on 1250 KVA, Single phase, 22.5/2\*0.855 kV, Traction transformer for M/s. Hitachi Energy for the first time.



- The High Power Lab, CPRI, Bengaluru, successfully carried out Arc test on 25 KVA, 1- Phase, Distribution transformer for M/s. Toshiba Transmission & Distribution Systems for the first time.



## Field Work

The Thermal Research Centre, CPRI Nagpur, carried out a comprehensive condition assessment of various steel structures at CHP-A of 210 MW units at M/s. MSPGCL, CSTPS, Chandrapur, Maharashtra. The scope of the study included detailed inspection, non-destructive testing (NDT), evaluation, and formulation of recommendations for repair and retrofitting of belt conveyor steel structures (7 A/B/C, 9 A/B/C, 13 A/B, 14 A/B) as well as the steel structure of the DRCC Wing Tripper.



## Memorandum of Understanding (MoU)

CPRI signed a MoU with NHPTL, Bina regard to acquisition of MVTR equipment on 06.03.2026 in the presence of Director General, CPRI and Shri R K Arora, Chief Executive Officer, NHPTL in CPRI, Bengaluru.



## OVERSEAS CUSTOMERS

### Testing for overseas customers

CPRI continues to extend its testing services to a wide range of overseas customers. A few of the services rendered are highlighted below:

- The Mechanical Engineering Division, CPRI Bengaluru, conducted tower testing on a 132 kV D/C tension tower type DC (15–30 Deg.) with +9 m BE and +9 m LE during January 29–30, 2026.



The test was witnessed by Mr. Devkota Bishnu Prasad and Mr. Neupane Prabeshchandra from M/s. Nepal Electricity Authority, Nepal.

- Deputation of CPRI officer to Dubai, UAE: Dr. Somala Arjuna Rao, Joint Director, CPRI Bhopal, was deputed to Dubai, UAE, from January 19–22, 2026, for witnessing post short-circuit tests on a 3150 kVA, 33/0.433 kV resin cast transformer manufactured by M/s. Emirates Transformer & Switchgear Limited, Dubai.



- The Switchgear Testing & Development Station (STDS), CPRI Bhopal, carried out a short-circuit withstand time test on a 6.6 MVA, 33/(2 × 0.8) kV transformer for M/s. LTL Transformer Pvt. Ltd., Sri Lanka.



- Switchgear Testing & Development Station (STDS), CPRI Bhopal, has carried out Test Sequence II, III on Air Circuit Breaker & Molded Case Circuit Breaker for M/s. ABB, Italy.



- Overseas delegates Dr. Tepe Johanna, Project Coordinator, International Cooperation in Asia, PTB and Dr. Strater Hendrik, Senior Scientist, PTB, Germany visited Energy Efficiency & Renewable Energy Division, CPRI Bengaluru.



## INDUSTRY TRENDS

### Industry Trends in cyber security in OT and testing

As industries accelerate toward digital transformation, Operational Technology (OT) systems, once isolated and proprietary are now deeply interconnected with IT networks and the Industrial Internet of Things (IIoT). While this convergence improves efficiency and visibility, it also introduces significant cybersecurity risks. Addressing these challenges requires more than traditional IT security practices. This is where IEC 62443 stands out as a technically robust and industry-specific cybersecurity framework for Industrial Automation and Control Systems (IACS). At its core, IEC 62443 provides a defence-in-depth architecture combined with a lifecycle-based security model. Unlike conventional standards, it recognizes that industrial environments demand continuous availability, deterministic performance, and safety-critical operations. As a result, its controls are designed to minimize disruption while ensuring strong protection against cyber threats.



*Advanced Metering Infrastructure System  
Demonstration Testing*

One of the most technically significant aspects of IEC 62443 is its structured segmentation model based on zones and conduits. Systems are divided into zones according to their criticality and required Security Levels (SL1 to SL4). Communication between zones is strictly controlled through conduits, enabling granular enforcement of

security policies such as firewall rules, deep packet inspection, and protocol whitelisting. This architecture significantly reduces the attack surface and limits lateral movement within OT networks.

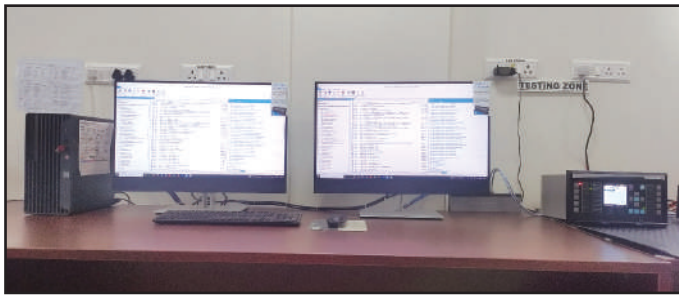
From a product security standpoint, the IEC 62443-4 series introduce rigorous requirements for both development processes and technical capabilities. The IEC 62443-4-1 mandates a Secure Development Lifecycle (SDL), including threat modelling, secure coding practices, static and dynamic code analysis, and vulnerability management. It also requires vendors to establish a Product Security Incident Response Team (PSIRT) for handling post-deployment vulnerabilities. The IEC 62443-4-2, on the other hand, defines technical security requirements for industrial components such as PLCs, RTUs, HMIs, and embedded controllers. These technical requirements are organized into seven Foundational Requirements (FRs), each addressing a critical security domain:

- (1) Identification and Authentication Control (IAC): Strong identity management, multi-factor authentication, and credential protection.
- (2) Use Control (UC): Role-Based Access Control (RBAC), least privilege enforcement,
- (3) System Integrity (SI): Secure boot, firmware validation, code signing, and protection against unauthorized modifications.
- (4) Data Confidentiality (DC): Encryption mechanisms such as TLS for data-in-transit,
- (5) Restricted Data Flow (RDF): Network segmentation, firewall enforcement, and protocol filtering,
- (6) Timely Response to Events (TRE): Logging, alerting, and integration with SIEM systems.
- (7) Resource Availability (RA): Protection against Denial-of-Service (DoS) and resource exhaustion attacks

Testing under IEC 62443-4-2 is not limited to functional validation but extends into advanced security assurance techniques. This includes: (1) Protocol fuzzing for industrial protocols like Modbus, DNP3, OPC UA, and communication

protocols like IEC--60870-5-104, and IEC-61850 (2) Penetration testing simulating real-world attack scenarios, (3) Cryptographic validation for TLS configurations, certificate chains, and key management, (4) Firmware security testing, including secure boot verification and binary integrity checks, (5) Hardening validation, ensuring unnecessary services, ports, and default credentials are eliminated

A notable technical shift is the adoption of risk-based Security Level validation, where testing depth and rigor increase with higher SL targets. For example, achieving SL3 or SL4 requires resistance against sophisticated attackers, including advanced persistent threats (APTs), demanding more exhaustive testing methodologies and stronger cryptographic controls.



*Conformance Testing Setup of IEC 61850*

Another emerging trend is the integration of DevSecOps practices in OT product development. Vendors are embedding automated security testing into CI/CD pipelines, enabling continuous integration of security checks such as static application security testing (SAST), dynamic testing (DAST), and software composition analysis (SCA). Additionally, the use of Software Bill of Materials (SBOM) is gaining traction to ensure transparency and traceability in supply chain components.

Given the operational constraints of OT systems; such as real-time requirements and limited downtime, testing is increasingly conducted in cyber-physical testbeds and digital twin

environments. These controlled setups allow organizations to simulate attacks and validate defences without impacting live operations.

Today, IEC 62443 is not merely a compliance framework but a technical benchmark for secure industrial systems. Governments and regulatory bodies are aligning with it, and industries are embedding its requirements into procurement and certification processes. For vendors, compliance demonstrates product robustness; for asset owners, it ensures operational resilience.

As cyber threats continue to evolve in sophistication and scale, adopting IEC 62443 is becoming essential for safeguarding critical infrastructure. By combining architectural principles, secure development practices, and rigorous testing methodologies, it provides a comprehensive and technically sound approach to OT cybersecurity; ensuring that the engines of modern industry remain both connected and secure.

The IEC 62351 series of standards defines technological implementations in achieving secure communications for protocols used in the power sector. CPRI has already established testing of RTU/FRTU security requirements as per IEC 62351 series of standards. Some of the requirements like authentication, encryption defined in the IEC 62443 series of standards are explained in IEC 62351.

CPRI is building facilities to test and certify devices based on IEC 62443 standards; this would help vendors to build secure products for modern smart grid under one roof for all the security requirements.

#### **Authors:**

Dinesh J,  
Arun Babu Puthuparambil,  
Pradish M,  
Shailesh Kapoor,  
Shivendra Sinha,  
Shivakumar V

## EXHIBITION PARTICIPATION

CPRI participated in the Bharat Electricity Summit 2026 (BES 2026), held under the patronage of the Ministry of Power, Government of India, at Yashobhoomi, New Delhi, during March 18–22, 2026. The four-day global conference-cum-exhibition for the power sector was inaugurated by the Union Minister of Power and Housing & Urban Affairs, Shri Manohar Lal Khattar.

CPRI showcased its capabilities, including test facilities and allied activities, at the exhibition. CPRI stall attracted significant interest from manufacturers, utilities, industries, and institutions, who interacted with CPRI officials with regard to testing services and facilities.

The stall was managed by officers deputed from the Business Development Division and RTL Noida.



*Visitors & Sr. Official of CPRI at the stall*

The Smart Grid Research Laboratory (SGRL), CPRI, organized a National Conference on Emerging Trends in Smart Grid and Cyber Security during February 26–27, 2026, at CPRI, Bengaluru. An exhibition was held alongside the conference, in which the Business Development & Capacity Building Services Division (BD&CBSD) participated. The exhibition was inaugurated by Dr. J. Sreedevi, Director General, CPRI, on February 26, 2026. CPRI’s testing facilities and related activities were showcased during the exhibition. The stall witnessed active engagement from conference delegates representing various organizations, utilities, and manufacturers.



*DG CPRI with Sr. Officials at CPRI stall*

## Conference/Seminar/Workshop/Training

### ● International Conference on Power Cables “CABLETECH 2026”

The Cables and Diagnostics Division, Central Power Research Institute (CPRI), Bengaluru, successfully organized the 13th International Conference on Power Cables – “CABLETECH 2026” on March 21, 2026, at Yashobhoomi Convention Centre, as part of the Bharat Electricity Summit 2026.

Since its inception in 1983, the CABLETECH conference series has served as a premier platform for stakeholders in the power cable industry to exchange knowledge and share advancements.

The conference was inaugurated by Smt. Reetu Jain, IES, Economic Adviser, Ministry of Power, Government of India, who delivered the keynote address. The inaugural session commenced with welcome address by Dr. J. Sreedevi, Director General, CPRI, followed by an overview of the conference objectives by Dr. T. Mallikarjuna Rao, Director, CPRI. Smt. K. P. Meena, Additional Director, presented the state-of-the-art testing facilities at CPRI’s Cables Laboratory. The session concluded with a formal vote of thanks by Dr. M. Venkateshwara Rao, Director, CPRI



The event witnessed participation of about 350 delegates representing utilities, manufacturing industries, and academic institutions. The conference also had international delegates from USA and Singapore, highlighting its global relevance. The technical program comprised of three focused sessions, addressing key areas such as Condition monitoring of cable System, Installation practices, new material development in cables and cable accessories, Studies on

materials & System, Ampacity Computations of cables, Failure analysis and short-circuit studies.



A total of 19 technical papers were presented by experts from India and abroad, reflecting diverse research and practical insights in power cable technology. In connection with the conference, distinguished expert Sheri Dhalke, Vice President – R&D, Polywater Corporation, delivered an insightful key note address on “Global Best Practices in Cable Installation.” The session provided valuable perspectives and practical guidance, and was highly beneficial to participants from both manufacturing organizations and power utilities.

### ● National Conference on “Emerging Trends in Smart Grid and Cyber Security”.

The Smart Grid Research Laboratory (SGRL), CPRI, organized a National Conference on “Emerging Trends in Smart Grid and Cyber Security” during February 26–27, 2026, at CPRI, Bengaluru. The conference received overwhelming response, with around 140 participants from utilities, industries, academia, and other organizations attending this event of national importance.

As part of the conference, an exhibition by sponsors was also arranged. The technical programme comprised six sessions covering key domains, including cybersecurity, standards, renewable energy and battery energy management systems, SAS and DAS/ADMS, advanced metering infrastructure and regulatory aspects, as well as AI and synchrophasor applications.

A total of 29 technical papers were presented during the conference. In addition, four keynote presentations by domain experts from leading organizations and a panel discussion on smart

grid and cybersecurity were organized, providing valuable insights and fostering knowledge exchange among participants.

### National Conference on Emerging Trends in Smart Grid and Cyber Security - 26-27 February 2026



Smart Grid Research Laboratory (SGRL), CPRI organized a National Conference on Emerging Trends in Smart Grid and Cyber Security on 26 and 27 February 2026 at CPRI, Bengaluru. As part of the conference, an exhibition was organized in which the Business Development & Capacity Building Services Division (BD&CBSD) participated.

February 2026. CPRI’s testing facilities and other key activities were showcased during the exhibition.

- The Power Systems Division, CPRI, Bengaluru, successfully conducted three workshops on “Generator Protection,” “Substation Protection,” and “Testing of Numerical Relays” during February 9–11, 2026, for engineers from M/s. IOCL.



*DG CPRI inaugurated the exhibition*

The exhibition was inaugurated by Dr. J Sreedevi, Director General, CPRI on 26th



- The Energy Efficiency & Renewable Energy Division, CPRI, organized a half-day short-term training programme on “Solar Photovoltaic (SPV) Power Plant Integration with Grid and Storage Batteries” on March 12, 2026, for trainees from the National Power Training Institute (NPTI).



### Training Programs on ISO/IEC 17025:2017

The Quality Assurance Division, CPRI Bengaluru, in alignment with the requirements of ISO/IEC 17025:2017, successfully organized a series of training programmes during March 2026, aimed at strengthening the competence of laboratory personnel, enhancing understanding of standard requirements, and improving overall quality management practices.

#### Objectives of the Training Programs

- To enhance awareness of ISO/IEC 17025:2017 requirements
- To build competency in internal auditing and laboratory systems
- To provide practical understanding of measurement uncertainty and decision rules
- To introduce risk-based thinking and its implementation in laboratories
- To ensure continual improvement in laboratory operations

Officers from all the units of Central Power Research Institute attended these four programs.

The details of the programs are given below:

1. Laboratory System and Internal Audit
2. Measurement Uncertainty and Decision Rule
3. Measurement Uncertainty and Decision Rule (Repeat Program)
4. Risk Management in Laboratories



The successful completion of these training programs marks an important step towards building a robust quality culture within the organization. The Quality Assurance Division remains committed to organizing such knowledge-driven initiatives to support accreditation readiness, ensure operational excellence, and promote continual improvement across all laboratories.

## Official Language Activities

### 1. Online Workshop:

A workshop was conducted on 25.02.2026 through online mode for all subordinate units, namely Noida, Hyderabad, and Nagpur, regarding the filling up of the Quarterly Progress Report. The Official Language Section shared the workshop link with the nominated officers/employees of all subordinate units. During the session, key aspects of the Official Language Policy were explained, along with detailed guidance on filling the Quarterly Progress Report. Participants were also apprised of the measures to be adopted at the unit level to ensure effective compliance with the Official Language Policy.

### 2. Official Language Orientation Programme:

An Official Language Orientation Programme was organized on 26.03.2026 for Official Language

Officers/In-charges of member offices under TOLIC-4. The programme was presided over by Dr. M. V. Rao, Director and Officer-in-Charge (OLS), who emphasized effective implementation of the Official Language Policy and increased use of Hindi in official work.

About 50 participants from various central government offices attended the programme. Key topics included the procedure for filling the quarterly progress report, timely submission of reports and measures for personality development and work efficiency. Participants were also guided on effective communication, confidence building, and office etiquette.

The programme included interactive sessions for clarifying queries and sharing experiences, and proved useful in strengthening coordination among member offices and promoting the effective use of Official Language Hindi.



*Participants of Orientation Programme*

## EVENTS

- The CPRI Women's Group organized a celebration of International Women's Day on March 13, 2026. The programme commenced with an audio-visual presentation honouring Dr. J. Sreedevi, recognizing her achievement as the first woman Director General of CPRI.

The event was graced by the Chief Guest, Smt. Vasanthi Hariprakash, who introduced the theme "Give to Gain" and delivered an address emphasizing the importance of mentorship, sharing, and collective progress in building an inclusive society. Her address highlighted the resilience and achievements of Indian women, inspiring meaningful engagement among participants.

The celebration also featured an interactive session, encouraging discussions on shared pathways to growth and empowerment. The programme concluded with a special lunch in recognition of the contributions of women employees at CPRI.



*Interaction during the IWD 2026*



*Group photo with chief Guest during IWD 2026*

- The Evaluation Committee of the Central Boilers Board (CBB) visited CPRI, TRC Nagpur on 06.03.2026 for an on-the-spot assessment for renewal of recognition as a "Well Known Remnant Life Assessment Organisation (RLAO)" under the Indian Boiler Regulations,

1950. The visit involved evaluation of the laboratory facilities, testing capabilities, and technical expertise related to residual life assessment of boiler components.



- Business Development & Capacity Building Services Division (BD&CBSD) introduced hospitality services for customers and visitors at the main gate reception with effect from January 1, 2026. Drinking water and tea are now being provided to visitors upon arrival, enhancing visitor experience and service standards.



- Shri Shivakumar V, Joint Director & HoD participated as a Panellist for the session on "Standards for Artificial Intelligence and Cybersecurity for Smart Energy Systems", part of 12th edition of the India Smart Utility Week (ISUW 2026) International Conference on 10.03.2026 organized by ISGF at New Delhi.



## ACCOLADES

### Awards and Achievements

- Shri Jeykishan Kumar K, Engineering Officer Grade 2, and Shri Vinodkumar J, Technician Grade 2, were awarded the First Prize in the Innovation Contest 2025, held on January 16, 2026, by the R&DM Division, CPRI, Bengaluru.

The award was conferred for their project titled "ISCC-HPVS: Indigenous Development of Fuzzy Logic Control for Solar Battery Hybrid Energy Systems."



- Shri Shailesh Kapoor, EO-2 and Shri Dinesh J, EO-1 has demonstrated innovation contest project on "Development of Smart Dashboard to automate testing schedule for CPRI Laboratories" to the Innovation Contest Review committee on 15.01.2026 and Chief Guest of Institute Day Celebrations 2026 and CPRI officials on 16.01.2026. This innovation contest project has received third prize.



- Shri Jeykishan Kumar K, Engineering Officer Grade 2, was awarded the IOP Trusted Reviewer status on January 5, 2026, in recognition of his exceptionally high level of peer review competency.



- STDS, Bhopal office received the Regional Official Language Award for the year 2024-25 (Category 'A' Region, Offices with more than 50 employees – Second Prize). The award was presented at the Joint Regional Official Language Conference held on January 20, 2026, at Devi Ahilya University, Indore.

On this occasion, Shri B. Radhakrishnan, Administrative Officer, and Dr. Vidya Raj, Junior Hindi Translator, received the Rajbhasha Shield and Certificate on behalf of the office.

