IEEE Power and Energy Society Power System Relaying and Control Committee 2024 PSRC Annual Report



Chair: Michael Thompson Vice-Chair: Gene Henneberg Secretary: Jim Niemira Interim Standards Coordinator: Erin Jessup

# SIGNIFICANT ACCOMPLISHMENTS IN 2024

- Standards, Guides Published by SA in 2024 (PSRC Committee maintains 65 IEEE standards, guides, and recommended practice documents)
  - 1613 Standard for Environmental and Testing Requirements for Devices with Communications Functions Used with Electric Power Apparatus.
  - C37.109 Guide for the Protection of Shunt Reactors.
  - C37.102 Guide for AC Generator Protection.
  - C37.252 Guide for Testing Automatic Voltage Control Systems in Regional Power Grids.
  - C37.90.1 Standard for Relays, Relay Systems and Control Devices used for Protection and Control of Electric Power Apparatus Surge Withstand Capability (SWC) and Electrical Fast Transient (EFT) Requirements and Tests.
- Technical Report and Papers
  - Summary Paper, "Exploring IEEE Standard C37.120-2021 Guide for Protection System Redundancy for Power System Reliability".
  - Technical Report, "Practices for Generator Synchronizing Systems". PES TR121.
  - Summary Paper for IEEE C37.109-2023 Guide for Protection of Shunt Reactors.
- Presentations made at PES General Meeting; JTCM; CIGRE; Western, Georgia Tech, and Texas A&M Protective Relay Conferences:
  - "Summary Paper for IEEE C37.104-2022 Guide for Automatic Reclosing on AC Distribution and Transmission Lines" by Manish Patel.
  - "Protection of Wind Electric Plants" by Ritwik Chowdhury.
  - "Introduction to Voltage Ride-Through Capability and Performance Requirements in the IEEE Standard 2800-2022" by Manish Patel and William Baker.
  - "Summary Paper for IEEE C37.109-2023 Guide for Protection of Shunt Reactors" by Kamal Garg and Pratap Mysore.
  - "Exploring IEEE Standard C37.120-2021 Guide for Protection system Redundancy for Power System Reliability" by Roger Whittaker and Melvin Joseph.

# Supported PES meetings

- PES General Meeting 20 papers given; PSRC sponsored 4 panel sessions, and support 4 GM Super Sessions.
- PES JTCM meeting: 2 presentations given.









- PES T & D 2024: 5 conference papers given; PSRC conducted one tutorial and 5 panel sessions.
- PES GRID EDGE 2025 2 papers accepted, and 1 panel session scheduled.
- New Linkedin Page: "IEEE PES PSRC"
- Pac World Magazine
  - Cathy Dalton authored four articles.

### **BENEFITS TO INDUSTRY AND PES MEMBERS**

- These activities keep our industry up to date with technology, improve power system reliability, and help solve protective relaying problems.
  - We are working on cybersecurity and standards with NERC, PES and IEC.
  - We are addressing grid stability with technical reports, guides and standards in protection, control, and communication.
  - Our meetings allow significant interaction between the PSRC, NERC, PSCCC, CIGRE, IEC and PES to share our interest, knowledge, and accomplishments.

### **BENEFITS TO VOLUTEER PARTICIPANTS**

Approximately 100 Working Groups and Task Forces provide fertile ground for participants to increase their personal knowledge. Their companies enjoy more personal productivity from their employees and contribute to the standards and practices of our industry.

#### **OUTSTANDING PERFORMANCE RECOGNITION**

- Class of 2025 Fellow Awards to PSRC Members:
  - Michael Thompson
  - Chris Huntley
- Class of 2025 Fellow Awards with PSRC Involvement:
  - Nirmal Nair
- PSRC Outstanding Standards
  - IEEE C37.109
- PES Outstanding Standards
  - C37.102
  - C37.233
  - C37.92
  - 1613
- PSRC Distinguished Service Award: Donald G. Lukach
- PSRC Outgoing Chair: Michael Thompson 2023-2024.
- CIGRE Medal 2024: Dr. Mladen Kezunovic





# **COORDINATION WITH OTHER ENTITIES**

- IEEE Standards Association Board of Governors: Phil Winston serving.
- IEC TC 95: Murty Yalla served as Chair until February 2024.
- IEC TC 95: Eric Udren is Technical Advisor and Normann Fischer is Deputy Technical Advisor to USNC.
- IEC TC 95 Financial and Administrative Support: US DOE Pacific Northwest National Laboratories, Jeff Dagle TAG Administrator.
- IEC TC 95, IEC standard 60255-187-3 development supported by PSRC WG D34, Normann Fischer, Chair.
- IEC TC 95: IEC Standards 68255-1 Ed 2; 60255-26 Ed4; 60255 Ed 3; 60255 Ed 3 AMD 1-US are approved and published.
- IEC TC 95: IEC Standard 60255-216-1 supported by PSRC WG H47, Mital Karabar, Chair.
- IEC TC 95, IEC Standard 60255-24/JWG with PSRC C37.111 COMTRADE dual logo revision project underway, Mark Adamiak, Chair.
- IEC TC 95: Functional and Product Design Standards 60255-21, 60255-27, 60255-132, 60255-167 and 60255-216-3: PSRC WG's and experts coordinate IEEE and IEC content and contribute to IEC drafts for consistent requirements.
- IEC TC 57: WG 10 continues to develop IEC 61850 Edition 2.1. Convenor is Christoph Brunner.
- PES Renewable Systems Integration Coordinating Committee, Kamal Garg is Liaison.
- CIGRE WG B5, Automation and Control: Jonathan Sykes is the US Regular Member.
- CIGRE WG B5.55 "Application of Travelling Wave Technology for Protection and Automation," Convener is Armando Guzman.
- CIGRE Technical Brochure 926 "Methods for Specification of Functional Requirements of Protection, Automation, and Control." (Published).
- CIGRE WG B5.69 "Experience Gained and Recommendations for Implementation of Process Bus in Protection, Automation and Control Systems," Convenor is Alex Apostolov.
- CIGRE WG B5.82 "Education, Qualification and Continuing Professional Development of Engineers in Protection, Automation and Control," Convenor is Mladen Kezunovic.
- CIGRE WG B5.86 "Protection Automation and Control System Interfaced Asset Management and Condition Monitoring Using Innovative Technologies", Convener Alex Apostolov.
- PSRC regularly met during 2024 with several subcommittees of Substation and with the Power Systems Communications and Cyber Security committees.
- PSRC participated in the PES JTCM for the 17th year.







- PSRC is in consistent liaison with NERC, IEC, EPRI, CIGRE and IAS.
- Joint Committee Standards that PSRC Supports:
  - P2800.2 Recommended Practice for Test and Verification Procedures for Inverterbased Resources (IBRs) Interconnecting with Bulk Power Systems.
  - P1854 Guide for Smart Distribution Applications
  - P2004 (HIL) Simulation Based Testing of Electric Power Apparatus.
  - PC37.431.20 Guide for Modern Protection System for Static Var Compensators.
  - IEEE 1547 Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces. (Joint Sponsor)
  - IEEE 1547.10 Recommended Practice for Distributed Energy Resources (DER) Gateway Platforms.
  - EPM P1952 Standard for Resilient Positioning Navigation and Timing End User Equipment.
  - EPM P3416 Guide for Test Sets and Tools for Testing Protective Relays.
- Industry Technical Support Leadership Committee (ITSLC) support.
  - Murty Yalla is a member of the ITSLC and a liaison between PES and NERC.

#### **GLOBAL INVOLVEMENT**

Regions 8,9 & 10	Total Number
Attendees	18
Main Committee Members	2
Officers	0
Subcommittee Officers	0
Subcommittee Members	2

# **NEW TECHNOLOGIES OF INTEREST**

- Cybersecurity
- Wide area grid data collection with Synchrophasors
- Smart Grid Initiatives
- Grid stability under stressed conditions
- Inverter based resources





- Power Line induced wildfire ignitions
- Centralized Protection and Control Technology

# SIGNIFICANT PLANS FOR 2025

- Support three meetings per year.
  - One hybrid JTCM January 12-16, Garden Grove CA
  - Two in-person meetings:
    - May 12-15, Portland, OR
    - September 8-11, Richmond, VA
- Improve the meeting experience for first time attendees and young professionals.
- Support the Power System Communications and Cybersecurity Committee with meeting planning.
- Improve the PSRC/PSCCC meetings with enrichment activities such as technical tours, lunch, and learn events.

#### **PROBLEMS/CONCERNS**

 Developing expertise in the area of DC transmission and distribution system protection technologies.

#### Submitted by: Michael Thompson

January 30, 2025