



PAC World Conference 2025

Presentation Schedule

Raleigh, NC, USA, August 12-14, 2025

Last Updated: August 7, 2025

Tuesday Morning

TUM01	PW04	Lessons Learned from a Virtual Protection Relay (VPR) System Proof-of-Concept (PoC) Implementation - N. Rexwinkel, SCE, USA; C. Garcia, E. Colmenares, ABB, USA
TUM02	PW53	Virtual 86 Lockout – Considerations and Applications in Digital Substations - W. Hartmann, C. Wester, GE Vernova, USA
TUM03	PW14	Leveraging 5G URLLC for Protection and Control Operations in Transmission and Distribution Networks - M. Subieta, Nokia, USA
TUM04	PW16	Enabling Full Integration of Ethernet Networks into IEC 61850 Systems: The First Steps Towards a Unified PACS Framework - G. Lisboa, Belden, Brazil
TUM05	PW45	How to Troubleshoot a Network Incident in IEC61850 Digital Substation - S. Jose, ASE & Kalkitech, USA & India
TUM06	PW33	Protection Schemes for Inverter-Dominated Transmission Systems: First Experiences from Hardware Testbed of Hawai'i Island - U. Muenz, A. Stinskiy, E. Oliveira, A. Banerjee - Siemens US, USA; S. Sano, A. Li, M. Chee - Hawaiian Electric Company, USA; T. Barik, D. Ramasubramanian, E. Farantatos, S. Das - EPRI, USA
TUM07	PW37	The IEC 61850 Engineering Process from an Eagle's View - F. Steinhauser, OMICRON, Austria
TUM08	PW20	An Introduction to Harmonics on the Power Grid - T. Laughner, Lifescale Analytics, USA; B. Warmack, Oak Ridge National Labs, USA
TUM09	PW26	Updating LUMA Energy's Protection Philosophies, Settings Criteria, Short Circuit Modeling, Protection Coordination Practices, and System-wide Settings Deployment - K. Judd, M. Malki, J. Li—Quanta Technology, LLC, USA; P. Wang, LUMA Energy, USA
TUM10	PW39	Benefits of Implementing Control Authority in Substation Automation Systems - R. Corna, W. Oliveira, Schweitzer Engineering Laboratories, Inc., USA

Tuesday Afternoon

Utility Panels - After Lunch

- * IBR Integration and the Impacts on P&C and the Grid
 - Jonathan Sykes, Quanta Technology (panel moderator)
 - Jason Eruneo, Duke Energy
 - Zheyuan Cheng, Quanta Technology
 - Bogdan Kasztenny, Schweitzer Engineering Laboratories (SEL)
- * Microgrids in Crisis: Lessons from Hurricane Helene and the Hot Springs Response
 - Patrick Louka, Duke Energy (panel moderator)
 - B. Bryan Hosseini, Duke Energy
 - Junior Hatcher, Duke Energy
 - Wahiduddin ("Dean") Qaemi, Duke Energy

* Paper was not available at time of publishing

TUA01	PW28	Practical Use of AI to Configure Relays and Automate Protection Studies - S. McGuinness, EPRI Europe DAC, Ireland; T. Kumar Barik, Electric Power Research Institute, USA
TUA02	PW50	Essentials of Renewable Energy Protection and Monitoring - D. Ransom, GE Vernova, USA
TUA03	PW09	Update on UCA - H. Falk - UCAIug, USA
TUA04	PW11	Enhancing Critical Infrastructure Resilience with vPRTC and APTS - J. Parrilli, H. Alves, J. Olsen, Microchip Technology Inc, USA
TUA05	PW42	Modular Substation Construction Enabled by Digital Substations - R. Hunt, Quanta Technology LLC, USA
TUA06	PW24	The Benefits & Challenges of 87L over Ethernet - A. Freeman-Scott, SCI Networks, USA; D. Dietmeyer, San Diego Gas & Electric, USA

Wednesday Morning

WEM01	PW22	Tradeoffs of Layer 3 Communications on the Process Bus - K. Gray, C. Dyer, POWER Engineers, USA; S. Karimi, POWER Engineers, Canada
WEM02	PW23	Using 61850 Data Streams for Condition Based Monitoring - G. Wilson, Southern Company, USA
WEM03	PW52	Impact of Sampled Analog Values on Time Synchronization of Line Current Differential Relays - T. Bains, I. Voloh, E. Bencz, S. Mutnuri, S. Gargaritano, J. Theron, GE Vernova, USA
WEM04	PW10	Virtualization Maintenance and Testing - H. Falk - Outside the Box Consulting Services, USA; P. Myrda - Electric Power Research Institute, USA
WEM05	PW43	Improving Time Synchronization Stability in Process Bus Applications via Seamless Changeover - J. Brandao, E. de Oliveira, R. Peres, Siemens, USA
WEM06	PW27	NEMA Basic Application Profiles for Digital Substations - E Keller, G&W Electric, USA; B Marchionini, National Electrical Manufacturers Association, USA; A Stinskiy, Siemens, USA

Utility Panels - After the Break

* Challenges and Opportunities in Adopting Virtual Protection

- David G. Hart, Quanta Technology (panel moderator)
- Brant Heap, Salt River Project
- John Archer, RedHat
- Jonathan Sykes, Quanta Technology
- Cristian Garcia, ABB

* Drivers and Benefits in Adopting Digital Substations

- Jonathan Sykes, Quanta Technology (panel moderator)
- John Bettler, ComEd retired
- Rick Tuck, Dominion

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Wednesday Afternoon

WEA01	PW30	Digital Twin: The Revolution In Electrical System Protection Maintenance - A. I. Ferreira Neto, G. M. Bardocha Rezende, PSI Energy, Brazil
WEA02	PW34	Real-life Implementation, Testing and Validation of Routable-GOOSE over MPLS-TP: Case Tele-protection Santa Rosa-Carapongo 220 kV line in Perú - J. Márcio Jorge, OMICRON electronics, Brazil; Y. Machuca Huamani, ISA ENERGÍA, Perú; J. Velarde, Siemens, Perú; F. Gonzalez-Longatt, Loughborough University, United Kingdom
WEA03	PW01	5G URLLC for Wide-Area Protection in an Active Distribution System - P. Raghuraman, NC State University & Siemens Industry, USA; I. Guvenc, M. E. Baran, NC State University, USA; D. Maas, University of Utah, USA
WEA04	PW12	The Role of a Robust Communications Infrastructure for Time Synchronization supporting the Electric Utility Protection and Control Infrastructure - M. Subieta, Nokia, USA; R. Wright, Nokia, Canada
WEA05	PW08	A Bus Cleared and a Hidden Breaker Insulation Failure Revealed - R. Roman, K. Damron, Avista Utilities, USA; E. Clawson, Schweitzer Engineering Laboratories, Inc., USA
WEA06	PW02	A Real-World Application of Lossy Modal Analysis for Power Line Carrier Protection Channels - C. Palmer, PowerComm Solutions, USA; E. Louis Seiter, S. Slaski, National Grid, USA
WEA07	PW31	Virtualization of Protection Systems in Distribution Substations: Design, Implementation, and Performance Testing - N. Rexwinkel, F. Khalilpour, J. Silva; Southern California Edison, USA; A. Stinskiy, S. Talwar, M. Stollfuss, E. De Oliveira, Siemens, USA
WEA08	PW55	Experience and Challenges in the Practical Implementation of Four Digital Substations in Brazil - D. Lellys, GE Vernova, USA; P. Humeres, Eletrobras, Brazil; J. Lima, PUC Minas University, Brazil
WEA09	PW29	Modernizing Teleprotection: Migrating from SONET/SDH and TDM to IP/MPLS for Reliable Protection and Control in Electric Utilities - M. Subieta, Nokia, USA
WEA10	PW35	Secondary Injection Testing Technology in Merging Units applications with Low Power Instrument Transformers - P. Junior, CONPROVE, Brazil; A. Furlani Rosa, SecuControl, Brazil; R. Bernardino, G. Salge, C. Martins, CONPROVE, Brazil; A. Rios, L. Varela, SecuControl, Brazil;
WEA11	PW03	Engineering and Testing Insights into Centralized PAC Systems - D. Mani, Megger, USA
WEA12	PW40	Advanced Recloser-Fuse Protection Coordination Strategies for Wildfire Mitigation - A. Venkataramanan, S. Talukder, S. Chandra, D. Ishchenko, Eaton Corp, USA; T. Chow, Exelon - ComEd, USA

Thursday Morning

THM01	PW05	Automated Testing of SCADA Systems at Electric Utilities - B. Smith, R. Barton, Southern California Edison, USA; D. Goughnour, Triangle Microworks Inc., USA
THM02	PW61	Leveraging Private LTE Networks for Direct Transfer Trip (DTT) Systems - B. Dob, RFL, USA

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THM03	PW51	Comparative Analysis of Transmission Lines Falling Conductor Protection Methods - C. Adewole, C. Aguilar, GE Vernova, USA; A. Marquez, A. Torres, E. Wong, N. Abed, Southern California Edison, USA
THM04	PW21	Quantum-Safe Grid Communications with MACsec - H. Chan, Z. Majzoub, Nokia, Canada
THM05	PW44	Enhancing Availability in Process Bus Applications Through Redundant Merging Units and Sampled Value Streams - R. Peres, J. Brandao, E. de Oliveira, SIEMENS, USA
THM06	PW62	A New Approach for Communication Cyber Security: Managing Authorisation, Not Keys - Andrew West, Integral SCADA Pty Ltd, Australia

Expert Panel will be before lunch

Thursday Afternoon

THA01	PW36	Wide-Area Terrestrial Time-Distribution System for Resilient Process Bus Based Line Current Differential Protection - A. Shrestha, M. Elshafi, A. Hoorjandi, A. Shetty, Schweitzer Engineering Laboratories, Inc., USA
THA02	PW15	Simplifying the Configuration Process for IEC61850-based Systems Through Generative AI Technology - G. Fernandes, A. Oliveira Pires, H. León, H. de Lemos, GE Vernova, Brazil; R. Ramlachan, GE Vernova, USA
THA03	PW25	A Retrospective on Los Angeles Fires From IOT Network - J. Anderson, Whisker Labs, USA; T. Laughner, Lifescale Analytics, USA; B. Marshall, Whisker Labs, USA
THA04	PW41	Root Cause Analysis of Misoperation of Line Differential Protection Based on CT Saturation and Its Mitigation - M. Bin Gani, J. Holbach, Quanta Technology LLC, USA; N. M. Skoff, M. J. Till, Dominion Energy, USA
THA05	PW56	Graph-based Federated Learning for Fault Detection in Power Distribution Systems - D. Bandurin, N. Matevosyan, ComEd, USA
THA06	PW60	UCA IEC61850 Interop Time Synchronization Testing Takeaways and Conclusions - G. Wrosinghert, W. Abt, Meinberg USA, USA
THA07	PW59	State of Cybersecurity in IEC 61850 - H. Falk, Outside the Box Consulting, USA; G. Godlevski, J. Moore, Triangle MicroWorks, USA
THA08	PW06	Developing an Electric Power Utility Business Case for Deployment of Digital Substations - C. Dyer, K. Gray, POWER Engineers, USA
THA09	PW32	Protection Applications with Low-Power instrument Transformers (LPIT) - Proof of Interoperability Under Operating Conditions - L. Schulz, P. Schuhmann, J. Sanchez, Siemens Germany, Germany; D. Sheth, Google, USA; A. Stinskiy, O. Hartmann, M. Rabinovich, Siemens US, USA
THA10	PW17	LUMA Energy Distribution Protection Methods Review for Large-Scale Reclosers Deployment - C. T. Ocasio Rodriguez, J. N. Morales Morales, LUMA Energy, Puerto Rico; H. Self, M. Ng, B. Zarovniaev, A. Chandel, M. Baviskar, J. Wagner, R. Karandeh, K. Whelan, Quanta Technology, LLC, USA
THA11	PW48	Time Out - A Simple Review of PTP for Relay & SCADA Engineers - Pascal Francis-Metzer, OMICRON electronics, USA; John Bettler, ComEd, USA
THA12	PW58	The Role of IEC 61850 in the Digital Transformation of Electric Power Grids - A. Apostolov, PAC World, USA

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