

78th Annual Georgia Tech Protective Relaying Conference

May 7-9, 2025 - Georgia Tech Hotel and Conference Center, Atlanta, GA

Tuesday May 6, 2025

4:30 - 6:30 PM EST	Registration - Salon 1-2-3-4-5-6
5:00 - 9:00 PM EST	Vendor Exhibits Open

Wednesday May 7, 2025

Session WA-0 Salon 1-2-3-4-5-6	Session Moderator: Murty Yalla , Hubbell Backup: David Busot , Sargent & Lundy
7:00 - 8:00 AM EST	Registration
7:45 - 8:00 AM EST	<i>Conference Opening - Welcoming Remarks & Conference Awards</i> Sakis Meliopoulos Professor, School of Electrical and Computer Engineering
8:00 - 8:30 AM EST	<i>Keynote Speech</i> Keynote Speaker Name (TBD) , Keynote Speaker Company (TBD)
8:30 - 9:00 AM EST WA-0-P1	<i>Exploring IEEE Std. C37.120-2021 Guide for Protection System Redundancy for Power System Reliability</i> Alla Deronja , IEEE PES Power System Relaying Committee
9:00 - 9:30 AM EST WA-0-P2	<i>Investigating a Transmission Line Misoperation Caused by IBR Penetration</i> Tin Nguyen, Brady Alexander, Patrick Doss , Dominion Energy
9:30 - 9:45 AM EST	Break

Wednesday May 7, 2025

Session WA-1 Salon 4-5-6	Session Moderator: Ed Chen , Consolidated Edison of New York Backup: Craig Black , Duke Energy	Session WA-2 Salon 1-2-3	Session Moderator: Michael Perez , POWER Engineers, Inc. Backup: Steven Kunsman , Hitachi Energy
9:45 - 10:15 AM EST WA-1-P1	<i>Using Discrete Wavelet Transform Technique to Investigate High Impedance Fault and Protection Application Strategy at National Grid</i> Song Ji, Yujie-Irene Lu , National Grid USA	9:45 - 10:15 AM EST WA-2-P1	<i>LUMA Energy Distribution Protection Methods Review for Large Scale Reclosers Deployment</i> Camille T Ocasio Rodriguez , LUMA Energy Howard Self, Vladimir Zarovniaev, Mathias Ng, Ayush Chandel Quanta Technology LLC
10:20 - 10:50 AM EST WA-1-P2	<i>Challenges and Solutions for Distance Elements Protecting Transmission Lines With Tapped Loads</i> Yash Shah, Ryan McDaniel, Josh LaBlanc Schweitzer Engineering Laboratories, Inc.	10:20 - 10:50 AM EST WA-2-P2	<i>De-energized Lines Can Still Start Fires - Understanding the Risks and the Effects of Grounding</i> Robert James, Scott Hayes , Pacific Gas & Electric Company
10:55 - 11:25 AM EST WA-1-P3	<i>System-Wide Dynamic Protection Settings for Transmission Systems</i> Kevin Judd, Majida Malki, Emmett Carpenter, Sagar Karki Quanta Technology LLC Peter Wang , LUMA Energy	10:55 - 11:25 AM EST WA-2-P3	<i>Methods and Techniques for the Protection of Microgrid Systems</i> Hany Habib, Lionel Brookins, Jacob Midkiff, Ethan Lupinek, Micah Till Dominion Energy
11:30 AM - 12:00 PM EST WA-1-P4	<i>NERC PRC-027-1 Compliance and Lessons Learned</i> Glenn Callaghan, Zach Johnson , Power Relaying Solutions	11:30 AM - 12:00 PM EST WA-2-P4	<i>A New Ground Fault Detection Method in Three-Wire Distribution Systems to Reduce Fire Hazards</i> Gandhali Juvekar, Yanfeng Gong, Bill Glennon Schweitzer Engineering Laboratories, Inc.
12:00 - 1:15 PM EST	Lunch - Vendor Exhibits Open Lunch provided (1st floor main dining room, 2nd floor areas)	12:00 - 1:15 PM EST	Lunch - Vendor Exhibits Open Lunch provided (1st floor main dining room, 2nd floor areas)

Session WP-1 Salon 4-5-6	Session Moderator: Alexandr Stinskiy , Siemens Backup: Mostafa Shamsuddin , Nashville Electric Service
1:15 - 1:45 PM EST WP-1-P1	<i>Protection Schemes for Inverter-Dominated Transmission Systems: First Experiences from Hardware Testbed of Hawai'i Island</i> Steve Sano, Addison Li, Meredith Chee , Hawaiian Electric Company Ulrich Muenz, Alexandr Stinskiy, Abhishek Banerjee, Evandro Oliveira Siemens Tapas Barik, Deepak Ramasubramanian, Evangelos Farantatos, Shuvangkar Das Electric Power Research Institute
1:50 - 2:20 PM EST WP-1-P2	<i>Line Protection Solutions for Multiple IBR Interconnections in an Incumbent Utility Infrastructure</i> Jeremy Blair , Schweitzer Engineering Laboratories, Inc. Ram Viswanathan, Tu Nguyen, Keith Gaffney , Entergy Services LLC
2:25 - 2:55 PM EST WP-1-P3	<i>Coordination of Voltage Protection Settings within Inverter-Based Resource</i> Kevin Dowling, Wes Baker , Silicon Ranch Corporation Manish Patel , Electric Power Research Institute
2:55 - 3:10 PM EST	Break
3:10 - 3:40 PM EST WP-1-P4	<i>Fault Location for Two- And Three-Ended and Mixed Lines using Synchronized Measurements</i> Mike Kockott, O.D. Naidu, Neethu George, Sinisa Zubić Hitachi Energy
3:45 - 4:15 PM EST WP-1-P5	<i>Circuit Breaker Failure Protection: A Logical Design Path</i> Sam Hogue , GE Vernova
4:20 - 4:50 PM EST WP-1-P6	<i>A Bus Cleared and a Hidden Breaker Insulation Failure Revealed</i> Emma Clawson , Schweitzer Engineering Laboratories, Inc. Kevin Damron, Robert Roman , Avista Utilities
4:50 PM EST	Adjourn
5:00 - 8:00 PM EST	Vendor Exhibits Open

Session WP-2 Salon 1-2-3	Session Moderator: Rick Gamble , Tennessee Valley Authority Backup: Andre Smit , Quanta Technology, LLC
1:15 - 1:45 PM EST WP-2-P1	<i>The Impact of IEC 61850 on the Digital Transformation of Protection and Control Systems</i> Alexander Apostolov , OMICRON electronics
1:50 - 2:20 PM EST WP-2-P2	<i>Virtual 86 Lockout - Considerations and Applications in Digital Substations</i> Wayne Hartmann, Craig Wester , GE Vernova
2:25 - 2:55 PM EST WP-2-P3	<i>Point-to-Point-Based Centralized Protection and Control System Design for a Two-Transformer Distribution Substation</i> Arun Shrestha, Jackson Fultz, Arunabha Chatterjee Schweitzer Engineering Laboratories, Inc. Stephen Ladd, Ethan Haithcox, Taylor Raffield , Duke Energy Chris Little, Tasha Asyiqin, Nathan Urquhart, Thomas Senecal University of North Carolina at Charlotte
2:55 - 3:10 PM EST	Break
3:10 - 3:40 PM EST WP-2-P4	<i>Considerations for Applying Distance Elements near Inverter Based Resources</i> Ram Palaniappan, Eli Walker , GE Vernova Nibrass Almansouri , Texas-New Mexico Power
3:45 - 4:15 PM EST WP-2-P5	<i>Lessons Learned: Protecting Lines without Communication-Assisted Tripping</i> Stephen Marx , Bonneville Power Administration Brianne Young , ICF
4:20 - 4:50 PM EST WP-2-P6	<i>An EXTRA High Voltage TVA Event!</i> Gary Kobet , Tennessee Valley Authority
4:50 PM EST	Adjourn
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Thursday May 8, 2025

Session TA-1 Salon 4-5-6	Session Moderator: Will Beasley, Santee Cooper Backup: Craig Wester, GE Vernova	Session TA-2 Salon 1-2-3	Session Moderator: Tyler Young, Tampa Electric Company Backup: Stephen Ladd, Duke Energy
8:00 - 8:30 AM EST TA-1-P1	<i>The Business Case for IEC 61850-Based Digital Substations</i> Alexander Apostolov, OMICRON electronics	8:00 - 8:30 AM EST TA-2-P1	<i>Comparing Ride-through Requirements for Inverter-Based Resources in NERC Reliability Standard PRC-029 and IEEE Std 2800-2022</i> Manish Patel, Electric Power Research Institute Wes Baker, Silicon Ranch Corporation Rajat Majumder, Invenergy
8:35 - 9:05 AM EST TA-1-P2	<i>Experience and Challenges in the Practical Implementation of Four Digital Substations in Brazil</i> Denys Lellys, Christine Crites, GE Vernova Pablo Humeres, Eletrobras CGTEletrosul Brazil Júlio Cesar Lima, PUC Minas University Brazil	8:35 - 9:05 AM EST TA-2-P2	<i>Educational Insights into Short-Circuit Calculations: Iterative Methods for Inverter-Based Fault Response</i> Chris Culpepper, Yazid Alkraimeen, Siemens Industry, Inc. Russell Patterson, Qualus
9:10 - 9:40 AM EST TA-1-P3	<i>Comparative Performance Analysis of Identical Protection Functions in the Same IED Fed by Conventional and Process Bus Connected Analog Quantities</i> Mike Kockott, Galina Antonova, Hitachi Energy	9:10 - 9:40 AM EST TA-2-P3	<i>Protection Strategies for Integrating Battery Energy Storage Systems in Transmission Networks</i> John Town, Mukesk Nagpal, Karl Stefanski, Arun Chanda Burns & McDonnell
9:40 - 9:55 AM EST	Break	9:40 - 9:55 AM EST	Break
9:55 - 10:25 AM EST TA-1-P4	<i>Assessment of Hot and Flaming Particles and Fire Risk from High Current Faults</i> Scott Hayes, Robert James, Pacific Gas & Electric Company	9:55 - 10:25 AM EST TA-2-P4	<i>Understanding Dynamic Performance of Power Line Carrier Protection Channels: A Real-World Application of Lossy Modal Analysis</i> Craig Palmer, PowerComm Solutions E. Louis Seiter, Scott Slaski, National Grid
10:30 - 11:00 AM EST TA-1-P5	<i>Case Study: A Subtransmission-Level Fault Location, Isolation, and Service Restoration (FLISR) Scheme</i> Konrad Schmitt, Trent Bridges, Matthew Bult Schweitzer Engineering Laboratories, Inc. Jeremy Smith, Corey Dean, John Mayer, Huntsville Utilities Jerick Rowell, Redstone Arsenal	10:30 - 11:00 AM EST TA-2-P5	<i>A Case Study of a Shunt and Preexisting Series Simultaneous Fault</i> Luke Booth, Joe Perigo, Schweitzer Engineering Laboratories, Inc. Eric Johnson, Dominion Energy (South Carolina)
11:05 - 11:35 AM EST TA-1-P6	<i>Recloser with Integrated Grounding - Alternative to Direct Transfer Trip for DER</i> Aadityaa Padmanabhan, Van Holsomback, Tapas Kumar Barik Electric Power Research Institute Richard LaVigne, Gerald Warchol, Mamadou Diong Dominion Energy	11:05 - 11:35 AM EST TA-2-P6	<i>Application Strategy of Distance Protections on Transmission Lines with IBR Connections</i> Fenghai Sui, Hydro One Networks Inc.
11:40 AM - 12:10 PM EST TA-1-P7	<i>Virtualization of Protection Systems in Distribution Substations: Design, Implementation, and Performance Testing</i> Nicole Rexwinkel, Farzad Khalilpour, Jesse Silva Southern California Edison Alexandr Stinskiy, Saurabh Talwar, Marcus Stofffuss, Evandro Oliveira Siemens	11:40 AM - 12:10 PM EST TA-2-P7	<i>Teleprotection with MPLS Ethernet Communications - Testing and Experience with Practical Installations</i> Kawika Lawlor, Dan Dietmeyer, Kourosh Allemeh San Diego Gas & Electric Company Eric Udren, Quanta Technology, LLC Kamal Garg, Ken Fodero, Schweitzer Engineering Laboratories, Inc.
12:10 - 1:25 PM EST	Lunch - Vendor Exhibits Open Lunch provided (1st floor main dining room, 2nd floor areas)	12:10 - 1:25 PM EST	Lunch - Vendor Exhibits Open Lunch provided (1st floor main dining room, 2nd floor areas)

Session TP-1 Salon 4-5-6	Session Moderator: Russ Patterson, Qualus Backup: Chris Jones, Southern Company
1:25 - 1:55 PM EST TP-1-P1	<i>Summary Paper for IEEE C37.109-2023 Guide for Protection of Shunt Reactors</i> Gary Kobet, IEEE PES Power System Relaying Committee
2:00 - 2:30 PM EST TP-1-P2	<i>A Collection of Bedtime Stories for Protection Engineers - Volume 1</i> Ed Chen, Jianzhuang Huang, Pallavi Kuchikulla, Naresh Malla, Khawla Munawwer, Lizhong Situ, Dan Taft Consolidated Edison of New York
2:35 - 3:05 PM EST TP-1-P3	<i>Comparative Analysis of Transmission Lines Falling Conductor Protection Methods</i> Charles Adewole, Carlos Aguilar, Mike Ramlachan, GE Vernova Alfredo Marquez, Arturo Torres, Ed Wong, Nagy Abed Southern California Edison
3:05 - 3:20 PM EST	Break
3:20 - 3:50 PM EST TP-1-P4	<i>Transformer Differential Protection Revisited</i> Bogdan Kasztenny, Satish Samineni Schweitzer Engineering Laboratories, Inc.
3:55 - 4:25 PM EST TP-1-P5	<i>Transient Induced Loss of Protection during Fault</i> John Babu, Paul Melzen, Craig Marien, Eversource Energy
4:30 - 5:00 PM EST TP-1-P6	<i>EHV Reactor Protection: A Utility's Perspective</i> Michael Thompson, Schweitzer Engineering Laboratories, Inc. Steven Mueller, Ameren Services
5:00 PM EST	Adjourn
5:00 - 8:00 PM EST	Vendor Exhibits Open

Session TP-2 Salon 1-2-3	Session Moderator: Rick Tuck, Dominion Energy Backup: Joe Schaefer, Florida Power & Light
1:25 - 1:55 PM EST TP-2-P1	<i>Essentials of Renewable Energy Protection and Monitoring</i> Dan Ransom, GE Vernova
2:00 - 2:30 PM EST TP-2-P2	<i>Updating LUMA Energy's Protection Philosophies, Settings Criteria, Short Circuit Modeling, Protection Coordination Practices, and System-Wide Settings Deployment</i> Kevin Judd, Majida Malki, Jinrong Li, Quanta Technology LLC Peter Wang, LUMA Energy
2:35 - 3:05 PM EST TP-2-P3	<i>Leveraging Private LTE Networks for Direct Transfer Trip (DTT) Systems</i> Jason Mills, Anterix Brian Dob, Hubbell Power Systems
3:05 - 3:20 PM EST	Break
3:20 - 3:50 PM EST TP-2-P4	<i>Synchronizing Phasor Measurements Using Symmetrical Impedance Matching for Transmission Line Model Validation</i> Ricardo Rangel, Pacific Gas & Electric Company
3:55 - 4:25 PM EST TP-2-P5	<i>Setting Load Encroachment and Power Swing Blocking Functions to Comply with PRC-026-1</i> Bharat Vasudevan, Mike Kockott, Hitachi Energy
4:30 - 5:00 PM EST TP-2-P6	<i>Blackbox Modeling of Inverter-Based Resources: Lessons Learned</i> Dol Kunwar, Mohammad Zadeh, Yuhao Zhou, ETAP
5:00 PM EST	Adjourn
5:00 - 8:00 PM EST	Vendor Exhibits Open

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Friday May 9, 2025	
Session FA-1 Salon 4-5-6	Session Moderator: Yanfeng Gong , Schweitzer Engineering Laboratories Backup: Andre Smit , Quanta Technology, LLC
8:00 - 8:30 AM EST FA-1-P1	<i>Protection System Redundancy Criteria for NERC TPL-001.5 Footnote 13</i> Scott Hayes , Davis Erwin, Pacific Gas & Electric Company
8:35 - 9:05 AM EST FA-1-P2	<i>Useful Applications for Differential Relays With Both KCL and ATB 87 Elements</i> John Hostetler , Ariana Hargrave , Michael Thompson Schweitzer Engineering Laboratories, Inc.
9:10 - 9:40 AM EST FA-1-P3	<i>Assessing Inverter-Based Resources Modeling Gaps in Commonly Used Short-Circuit Programs</i> Zheyuan Cheng , Juergen Holbach , Quanta Technology LLC Trupal Patel , Matthew Reno , Sandia National Laboratories Christopher Weldy , Thanh Nguyen , ASPEN Yazid Alkraimeen , Siemens Industry, Inc.
9:40 - 10:00 AM EST	Break
Session FA-2 Salon 1-2-3	Session Moderator: Alexander Apostolov , OMICRON electronics Backup: Stephen Ladd , Duke Energy
8:00 - 8:30 AM EST FA-2-P1	<i>Analysis of a Transformer Neutral Resistor Damage on an 11kV Bus Fault at National Grid</i> Yujie-Irene Lu , Song Ji , National Grid USA
8:35 - 9:05 AM EST FA-2-P2	<i>Field Experience Commissioning Reactor Projects</i> Kamal Garg , Schweitzer Engineering Laboratories, Inc. Kawika Lawlor , San Diego Gas & Electric Company Bill Cook , Consultant
9:10 - 9:40 AM EST FA-2-P3	<i>Inrush Detection Through Current Wave Shape Analysis - Advanced Transformer Protection for Power Grids with IBRs</i> Alexandr Stinskiy , Sebastian Schneider , Frank Mieske Siemens
9:40 - 10:00 AM EST	Break
Salon 1-2-3-4-5-6	Session Moderator: David Busot , Sargent & Lundy Backup: Manish Patel , Electric Power Research Institute
10:00 - 10:30 AM EST FA-STUDENT	<i>Student Paper Title (TBD)</i> Authors (TBD) , Author University (TBD)
10:30 AM - 12:00 PM EST FA-RWE	<i>Real World Experiences</i> This session provides a forum for short presentations on "real life" experiences. Presenters will share protection related events in areas of operations, lessons learned, best practices and/or information on unique events.
12:00 PM EST	Conference Ends