IEEE Task Force on Big Data Analytics for Synchro-Waveform Measurements

Webinar Series

Measurement, Network Transport and Analysis of High-Resolution Substation Data

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Dominion Energy

Thursday December 4th, 2025, 9am Pacific/12pm Eastern

This webinar is free, but **registration** is **required**. Register here:
https://llnlfed.webex.com/weblink/register/r861cd85b29d4bb060f949c290e4cc7f9

Abstract: The rate of abnormal grid events has been increasing due to the evolving dynamics of the power grid. Specifically, power electronics now constitute a larger portion of both load and generation. Traditionally, utilities have addressed abnormal events (voltage abnormalities, faults and equipment failure) retrospectively. However, the availability of continuous high-resolution data from substations presents new opportunities to address such events proactively. While the analytical use cases have been validated using high-resolution data, proactive implementation has remained challenging due to various factors. This presentation outlines a successfully implemented plan to overcome these challenges and enable feasible proactive solutions.

Bio: Thomas J. (T.J.) Purcell IV, P.E. is a Consulting Engineer in Electric Transmission System Protection Automation & Analysis at Dominion, reviewing abnormal system operations and working to implement automated detection. He received a BS degree in electrical engineering from Virginia Polytechnic in Blacksburg, VA in 2010 and an MS degree in Systems Engineering from Old Dominion University in Norfolk, VA in 2017. He has 13 years of utility experience in nuclear electrical design and test engineering, transmission system protection, and automated analysis. He is a member of the Transient Recorders User Council and has been a Licensed Professional Engineer in Virginia since 2015.

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