|  |  |
| --- | --- |
|  | **RICHMOND CHAPTER OF IEEE PES****PES OFFICERS****Alan Ott – (804)257-4823 Brian King – (804) 320-8005 Dev Walia – (804) 928-8095 Hung-Ming Chou – (804) 418-0598** **Tin Nguyen – (804) 257-4999****Mahesh Karki – (804) 801-3955** |

***Data Analytics from the Application of Smart Meters (AMI)***

**Date: THURSDAY, June 9th, 2022**

**Place: WEB - ON-LINE TECHNICAL SEMINAR – See Link on Page 2**

**Abstract:**

Smart meters, also known as Advanced Metering Infrastructure or AMI, have been installed across most of the distribution networks in the United States. There is a tremendous amount of available data collected through this metering network. However, distilling this data into useful information and insights is a tremendous challenge. Without a way to get information out of the data, there would be little added value to installing smart meters and the associated capital investment. In this webinar, three industry experts will talk about how they apply automation processes and data analysis techniques to get useful information for a variety of power system applications including issue identification, voltage analysis, load modeling, and transformer health monitoring.

**Seminar Outline:**

9:30 am to 9:40 am           Opening Remarks

9:40 am to 10:10 am Identifying Issues from AMI Meters’ Instrumentation Profiles

10:10 am to 10:40 am AMI Data for Voltage Analysis and Load Modeling in Distribution Planning

10:40 am to 10:50 am Break

10:50 am to 11:00 am         Chapter Announcement
11:00 am to 12:00 am         Big Data Analytics for Transformer Health at Oncor

**Instructors:**

* Mark Hubbard, Dominion Energy, USA
* Melissa Peskin, Dominion Energy, USA
* Dr. Yannan Sun, Oncor Electric Delivery, USA

**Seminar Cost: Free**IEEE membership is not required to attend this seminar.

**Registration:** Please Register on the IEEE Website at the link below. This allows us to inform speakers ahead of time what sort of participation they may expect. It also helps us report on IEEE membership participation and also lets us know who to contact in case of any last-minute issues. As we all know, technology can be fickle when we need it most!

[**https://events.vtools.ieee.org/m/315592**](https://events.vtools.ieee.org/m/315592)

**PDH Certificate:** A PDF Certificate will be sent out for all attendees following the seminar.

**PDHs: 2** professional development hours (PDHs) may be issued to those completing this course.

|  |
| --- |
| **Questions? Contact the following:** |
| PESRichmond@ieee.orgalan.ott@dominionenergy.com |
|

|  |
| --- |
| **Webex Meeting Link:** |
|  |

 |

<https://dominionenergy.webex.com/dominionenergy/j.php?MTID=m0186f5b36a17af4325b5e81a27073578>

Thursday, Jun 9, 2022 9:00 am | 4 hours | (UTC-04:00) Eastern Time (US & Canada)

Meeting number: 2349 833 4634

Password: JAaHcX8uA46

Join by video system

Dial 23498334634@dominionenergy.webex.com

You can also dial 173.243.2.68 and enter your meeting number.

Join by phone

+1-415-655-0002 United States Toll

Access code: 234 983 34634

**Presentation Abstracts and Speaker Bios:**

**Presentation title**: Identifying Issues from AMI Meters’ Instrumentation Profiles

**Abstract**:  AMI meters are capable of reporting a complete instrumentation profile of their service characteristics remotely.  Using this data, service issues are identified, and field personnel can be dispatched to perform maintenance.  This presentation will review the process for the automation of this analysis and some examples of service issues identified.

**Mark Hubbard** has worked in metering for Dominion Energy for more than 14 years.  After his internship, he was hired as the metering engineer responsible for evaluating new metering technology and capabilities.  Today, Mark supervises the Metering Engineering & Planning group.

**Presentation title**: AMI Data for Voltage Analysis and Load Modeling in Distribution Planning

**Abstract**: Voltage data was one of Dominion’s early drivers for AMI meters, and it will be key to the rollout of Voltage Optimization (VO) through the Grid Transformation Plan and Demand-Side Management programs. Real-world examples of AMI voltage will be shown to demonstrate how service issues and inadequate facilities are identified and upgraded to improve customer power quality. The presentation will also touch on how interval load data from AMI meters is used to improve load models in Distribution Planning. Continued enhancement of the load model will be a key driver of Integrated Distribution Planning to respond to an evolving distribution grid.

**Melissa Peskin**, P.E., has worked on Dominion Energy’s Conservation Voltage Reduction and Voltage Optimization programs since their inception in 2009. She started with the company in 2005 as an intern and worked in Electric Distribution Planning until 2011. She joined Dominion Voltage Inc., where she delivered Dominion’s patented CVR solution to utilities across the United States and Canada, as well as leading the product management team. She returned to Electric Distribution Grid Planning in 2018, where she works on building and maintaining the distribution system electric model and performing system-wide planning and reliability analyses.

**Presentation tile**: Big Data Analytics for Transformer Health at Oncor

**Abstract**: As the largest utility company in the state of Texas (USA), Oncor provides power to more than 3.7 million customers. Monitoring and maintaining the assets in Oncor’s system is a crucial task that improves system reliability and customer satisfaction. We apply powerful computing platforms and advanced analytics to data collected from over 3.6 million smart meters at 15 minute intervals; this is truly big data analytics. This talk will present a few use cases using AMS data for transformer health at Oncor. In distribution systems, transformer failures could be caused by, for example coil damage or overload issues. Reactive replacements may take 4-5 hours, but proactive replacements usually take less than one hour. We use 15-minute voltage data collected from AMS meters to detect pre-fault signatures so that the transformers can be replaced proactively before failure. Load data is also analyzed to discover overloaded transformers. We developed a ranking system to prioritize all the distribution transformers in Oncor’s system. The impact of these projects will also be shared.

**Yannan Sun** is a data scientist at Oncor Electric Delivery. She is currently in Distribution Operation Center Technical Support Group, and previously in Maintenance Strategy and Transmission Planning. She has contributions in many data analytics use cases at Oncor by providing insights, designing data-driven approaches and implementing machine learning algorithms. She is also an expert on process improvement using Lean Six Sigma tools. Prior to Oncor, she was a Senior Scientist at Pacific Northwest National Laboratory in the Electricity Infrastructure group for 7 years.