Electric Power and Power Electronics Institute

INVITED SEMINAR

Wednesday November 12, 2014, 3:15pm – 4:05pm, ETB 1037

Power Quality Disturbances on the Distribution System Due to Power Electronics and PV Prevention: Two Case Studies

Paul A. Thomas
Oncor Electric Delivery, LLC

Abstract
Power Quality studies are time-consuming and very involved for utility personnel to perform on the over 1,700 distribution feeders. However, with the advent of distributed generation and the increase in non-linear loads on the distribution system, detailed analyses will be required to protect customer reliability. Two case studies were performed by personnel in the Distribution Standards and System Planning groups. The first, a case involving a customer interruption due to harmonic distortion, demonstrates the need of additional considerations when siting, sizing, and setting capacitors. The second, a case involving a large PV generation unit, illustrates the power quality issues surrounding high-penetration solar units on distribution feeders and their impact on customers in the surrounding area.

Biography
Paul Thomas is an engineer in System Planning at Oncor Electric Delivery. Paul graduated from the University of Texas at Austin in December 2013. In addition to System Planning, Paul performs special projects for some of the larger engineering problems within Oncor. Paul's research interests include the impact of renewable energy sources on grid stability, power quality studies involving distributed generation (DG) and power electronics, and fault location within a secondary mesh-configured network.