

THE LOG PERIODIC

www.scvemc.org Santa Clara Valley Chapter of IEEE Electromagnetic Compatibility Society

IEEE SCV EMC Society Meeting: Tuesday, April 12, 2011

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Time: Social 5:30 p.m. Presentation 6:30 p.m.

Place: Applied Materials Bowers Cafeteria
3090 Bowers Ave., Santa Clara, CA 95051-0804

Subject: EMI in Electric Power Substations

Speaker: John T. Tengdin, Senior Partner & Cofounder, OPUS Consulting Group;
IEEE Life Fellow

Abstract: How the IEEE PES Substations Committee WG C2 built on that history to create IEEE 1613-2003 in eleven months - from a blank page to a balloted "IEEE 1613 - Standard Environmental and Testing Requirements for Communication Networking Devices in Electric Power Substations".

What was new then? Required serial and Ethernet communication (via copper and/or fiber - depending on the ports provided in the device) per prescribed communication profiles, and the added pass/fail criteria for loss of communication.

What's new now - A PAR to extend the scope to "In Electric Power Facilities" - AND Add a communication profile for communications via RF to be underway during each of the four transient tests, and - if necessary - tweaks to the pass/fail criteria.

Speaker Bio:

John T. Tengdin, P.E (IEEE LF' 2007) received US Navy training as a radio technician, then served about the USS Kern (AOG-2) at the end of WWII. He worked summers as a "grunt" in Espanola, NM for Inland Utilities Company during his Purdue years. He graduated from Purdue University, West Lafayette, Indiana in 1949 with a BSEE degree (Power Major - Tau Beta Pi, Eta Kappa Nu). His post college employment experience began with Dayton Power and Light Company in their Cadet Engineering Program. That was interrupted by a recall to active duty in the U.S. Navy during the Korean War as an Electronic Technician. At NAS San Diego, he developed a jeep mounted radio relay unit that automatically linked communications between HF and VHF voice channels - for use during front line close air support, and improved the design during field tests in North Korea. Upon return to civilian life, he joined General Electric Company as a field service engineer, later as an application engineer serving electric utilities and their consulting engineering firms. He worked for GE's Computer Department for three years until it was sold to Honeywell Information Systems in Wellesley, MA where he worked for two years. He returned to GE in 1972 as Manager of Product Planning for GE's protective relay business located in Philadelphia, PA. Under his direction, GE's PROBE Project installed a minicomputer (Varian V72) in a Commonwealth Edison substation to explore the limits to pure digital solutions. In 1980, he was one of the founders of GE's Digital Systems Operation in King of Prussia, PA. He began work as an independent consultant in 1986, and formed OPUS Publishing as a two man partnership specializing in substation automation and cyber security in 1999. It was the predecessor to OPUS Consulting Group, formed in 2007, where he is a Senior Partner and Co-Founder. He was one of the US members of IEC TC57 WG 10-11-12 that developed IEC 61850. He has received numerous awards from the PES Substations Committee and the PES Power System Relaying Committee for his work on technical papers and standards, and from the IEEE SA for rapid standard development. He chaired the IEEE PES Substations Committee Working Group C2 that developed IEEE 1613-2003 in eleven months. His 2007 Fellow citation was "for leadership in Ethernet local area network based protective relaying and control in electric power substations". He can be reached at j.t.tengdin@ieee.org.

Refreshments:

Light Dinner and beverages will be served for a fee. Coffee, tea, and snacks are served free of charge.

$$\begin{aligned}\nabla \times \vec{E} &= -\frac{\partial \vec{B}}{\partial t} \\ \nabla \times \vec{H} &= \frac{\partial \vec{D}}{\partial t} + \vec{J} \\ \nabla \cdot \vec{D} &= \rho \\ \nabla \cdot \vec{B} &= 0\end{aligned}$$



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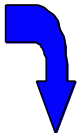
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