



**POWER & ENERGY SOCIETY
INDUSTRY APPLICATIONS SOCIETY
LIFE MEMBERS AFFINITY GROUP
NEW YORK SECTION**



You are invited to a meeting of the PES & IAS NY Chapter and the NY LMAG on

Reinventing the Electric Power Grid

Tuesday, May 29th, 2018

THE PRESENTATION:

Renewable energy will provide more than 50% of the electrical energy consumed in the U. S by 2050. To accommodate renewable energy power sources and changing customer loads, electric power grids will be reinvented. Transmission lines will be converted to transmission conduits with dynamically adjusted impedances to optimize power transfer capability; distribution lines will be converted to distribution conduits enabling bidirectional power transfers; substations will be converted to electric warehouses with energy storage capability and dynamic var sources; fault induced voltage dips, that lead to wide area blackouts, will be minimized with the installation of differential coil, solenoid type, series reactors at the terminals of high voltage transmission lines. These series reactors, when actuated by short circuit current, will reduce short circuit current from more than 100,000 amps to less than 20,000 amps in less than 16 milliseconds. Protective relay scheme misoperations will be reduced from 1 in 10 challenges to 1 in 10,000 challenges when voting logic is utilized to eliminate misoperations caused by single failures. Degraded voltage relays with inverse characteristics and power factor bias will be utilized as a backstop to prevent wide area blackouts. Traditional load flow studies will be upgraded and bifurcated to accurately reflect post fault power system recovery. These bifurcated studies will be used to identify optimum locations for system enhancements that facilitate post fault voltage recovery.

THE SPEAKER: Tony Sleva, Director of Engineering, Prescient Transmission Systems, Beaverton, OR



Tony is a Life Senior Member of IEEE, member of IEEE's Power System Relaying Committee (PSRC), former member of IEEE's Nuclear Power Engineering Committee (NPEC), graduate of Penn State University, licensed professional engineer in Pennsylvania and Maryland, and an instructor at University of Wisconsin – Milwaukee's School of Continuing Education. His experience includes design and analysis of transmission and distribution substations, switchyards, transmission lines, distribution lines, power plant electrical systems, railway electrical systems, electric dredges, and industrial plant electrical systems with an emphasis on protective relaying, power system transient analysis, short circuit analysis and arc flash considerations, electrical system operations, cold load inrush phenomena, aging of electrical equipment, and security of substation hardware. Tony authored the textbook "Protective Relay Principles". The second edition will be available in the 4th quarter of 2018.

ALL ARE INVITED – PLEASE POST

RSVP: <https://meetings.vtools.ieee.org/m/172408>

Chair Programs: Arnold Wong

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FOR SECURITY REASONS: NO WALK-INS!

When: 5:00 pm — Starts-Refreshments & Program

7:00 pm — Program Ends

Where: Con Edison

Edison Room

4 Irving Place, New York, NY 10003

Nearest Subway: 14th St/Union Sq

This program will be awarded IEEE Continuing Education Units.

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