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**TVPPA**

**08/09/2017**

10:00 am - 4:00 pm

**ENGINEERING & OPERATIONS CONFERENCE**

No location

Engineering & Operations Conference

**PRE-CONFERENCE OPTION: Basic Distribution System Operations and Equipotential Grounding**

Meeting Rooms 20-21

Rocky Sease P.E., Owner/CEO, SOS International

Steve Blume NCSO, Training Advisor, SOS International

Philip Lim P.E., Director, Engineering, Murfreesboro Electric Department

This session will cover: Radial WYE and Delta Configurations Voltage Regulation and Control Regulator Settings Loading and Voltage Drop Capacitor Allocation Stray Voltages and Currents Equipotential Grounding

4:00 pm - 5:30 pm

**PRE-CONFERENCE OPTION: NESC Updates**

Meeting Rooms 18-19

Tom Wyatt P.E., Instructor, Electrical Computer Engineering, University of Memphis

NESC 2017 Updates to include several definitions revisions, section revisions related to grounding methods for electric supply and communications facilities, revisions concerning clearances, work rules, and more.

3:00 pm

Solution Centers Open

Exhibit Hall A

There's something new in the exhibit hall this year! TVPPA presents to you "Solution Centers" where subject matter experts will give short presentations (20 minutes long) on a large variety of topics. Be sure to check out the conference page or app for a listing and check out one or many during this year's E&O conference!

3:00 pm - 3:30 pm

***Solution Center: sUAS Techniques in Surveying***

3:00 pm - 3:30 pm	<p>Solution Center No. 1 Chris Conrad, Power Consulting Associates, LLC</p> <p><b><i>Solution Center: Innovative Oil Containment and Engineered Safety Solutions</i></b></p> <p>Solution Center No. 2 Tom Downs, C.I.Agent Solutions</p>
3:30 pm - 4:00 pm	<p><b><i>Solution Center: GIS Meets Design</i></b></p> <p>Solution Center No. 1 Pat Reid, SBS</p>
3:30 pm - 4:00 pm	<p><b><i>Solution Center: Retro Filling with Natural Esters</i></b></p> <p>Solution Center No. 2 Larry Christodoulou, Electric Power Systems</p>
4:00 pm - 4:30 pm	<p><b><i>Solution Center: GIS Meets Design</i></b></p> <p>Solution Center No. 2 Pat Reid, SBS</p>
4:00 pm - 4:30 pm	<p><b><i>Solution Center: Tracking Your System with Distribution Inspection</i></b></p> <p>Solution Center No. 1 Roger Brock, Partner Software</p>
4:30 pm - 5:00 pm	<p><b><i>Solution Center: Data Synergy for the Informed Utility</i></b></p> <p>Solution Center No. 1 Josh Crozier, Futura Systems, Inc.</p>
4:30 pm - 5:00 pm	<p><b><i>Solution Center: Reliability of Pole Restoration</i></b></p> <p>Solution Center No. 2 Osmose wood pole-restoration systems are designed to restore poles weakened by decay or other damage so they exceed NESC requirements. Osmose systems restore the required strength in the ground line section of a pole usually for one-third or one-fourth of the cost of pole replacement. A video will be shown to demonstrate process, along with presentation discussing details and benefits of this alternative to wood pole replacement. <i>Patrick Kraft, Osmose</i></p>
5:00 pm - 5:30 pm	<p><b><i>Solution Center: Managing Field Inspections and Other Activities with iPads and iPhones</i></b></p> <p>Solution Center No. 1 Babu Krishnasamy, GISbiz</p>
5:00 pm - 5:30 pm	<p><b><i>Solution Center: TBD</i></b></p> <p>Solution Center No. 2 Cheryl Haney, Cooperative Response Center (CRC)</p>
5:30 pm - 6:00 pm	<p><b><i>Solution Center: VEE - SOS for Smart Meters</i></b></p> <p>Solution Center No. 1 Today, at the dawn of machine intelligence, automation realization and self-healing technology, VEE (Validation, Estimation &amp; Editing) can make your missing or bad data (almost) disappear. VEE's enabling technology is complex, but the VEE objective is simple and, oh so necessary. What's the big deal with VEE? What is VEE and what is its value to a utility?</p>

5:30 pm - 6:00 pm

5:30 pm - 6:30 pm

**08/10/2017**

7:30 am

7:30 am - 8:30 am

8:00 am - 8:30 am

8:00 am - 8:30 am

8:30 am

8:30 am - 8:35 am

8:35 am - 9:30 am

9:30 am - 10:15 am

9:30 am - 10:00 am

9:30 am - 10:00 am

10:00 am - 10:30 am

*Presented by J. Skip Hall, Central Service Association*

***Solution Center: Aerial Saw Use and Acceptance***

Solution Center No. 2

Steve Bostock, Rotor Blade

*Welcome Reception*

Exhibit Hall A

*Registration Open*

Registration Desk

*Breakfast with the Sponsors*

Exhibit Hall A

***Solution Center: Overhead System Comparison: Bare Wire vs. Tree Wire vs. Spacer Cable***

Solution Center No. 1

This session will include a look at the pro and cons of bare wire, tree wire and spacer cable systems. Comparisons will include overall reliability, costs and system applications.

*Presented by Jason Smolco, Hendrix ACS*

***Solution Center: Fusing***

Solution Center No. 2

Mike Quay, Thomas & Betts

**FIRST GENERAL SESSION**

Exhibit Hall B

***Welcome***

Exhibit Hall B

***Keynote Presentation***

Exhibit Hall B

Jack McCall, Keynote Speaker, Jack McCall & Associates

***Rate Evolution***

Exhibit Hall B

Chris Mitchell, President, Chris Mitchell Management Consultants

Chris Mitchell of Chris Mitchell Management Associates will provide a relevant look at how rates are evolving in the Tennessee Valley as TVA and local power companies continue to adapt to new technology and changes in energy consumption.

***Solution Center: Driving the Future of Infrastructure Lighting***

Solution Center No. 2

Doug Stewart, Ruffin & Associates

***Solution Center: Testing of Recloser Controls***

Solution Center No. 1

Will Knapek, OMICRON

***Solution Center: Non-Interrupting Regulator Bypass Switch***

	<p>Solution Center No. 1 DeWayne Ginn, Intertia Engineering</p>
<p>10:00 am - 10:30 am</p>	<p><b>Solution Center: The Lighter Alternative to Line Posts for Utilities</b> Solution Center No. 2 HDPE Line Post Insulators- A lighter, stronger alternative to traditional porcelain. Enhance the integrity of your system while providing beneficial ergonomics to your crews. <i>Scott Graves, Hendrix Molded Products</i></p>
<p>10:15 am - 10:45 am</p>	<p><i>Meet the Sponsors Break</i> Exhibit Hall A</p>
<p>10:30 am - 11:00 am</p>	<p><b>Solution Center: Time Synchronization to Substation Devices</b> Solution Center No. 1 Join in on a discussion of different methods and how to synchronize time to a variety of substation devices. <i>Presented by Terry Gibson, Schweitzer Engineering Laboratories</i></p>
<p>10:30 am - 11:00 am</p>	<p><b>Solution Center: Advancements in Underground Switchgear Technology for Long-Term System Reliability</b> Solution Center No. 2 Jeff McCammon, G&amp;W Electric Company</p>
<p>10:45 am - 11:15 am</p>	<p><b>R&amp;D Update</b> Exhibit Hall B Rody Blevins, President/CEO, Volunteer Energy Cooperative Hear what your TVPPA Research and Development Committee has accomplished in the past year and what's in the works now that affects and benefits you!</p>
<p>11:00 am - 11:30 am</p>	<p><b>Solution Center: TBD</b> Solution Center No. 2 Cheryl Haney, Cooperative Response Center (CRC)</p>
<p>11:00 am - 11:30 am</p>	<p><b>Solution Center: sUAS Techniques in Surveying</b> Solution Center No. 1 Chris Conrad, Power Consulting Associates, LLC</p>
<p>11:15 am - 11:45 am</p>	<p><b>TVA Power Supply Update</b> Exhibit Hall B Aaron Melda, Vice President, Transmission Operations and Power Supply, TVA TVA's VP of Transmission Operations and Power Supply will provide an update on fiber infrastructure, summer peak, fleet status, coal, gas and more.</p>
<p>11:45 am - 1:30 pm</p>	<p><i>Lunch with Friends and Colleagues (on your own)</i> No location</p>
<p>1:30 pm</p>	<p><b>SECOND GENERAL SESSION</b> No location</p>
<p>1:30 pm - 2:30 pm</p>	<p><b>(ENG) Open Forum: Power System Design Best Practices</b> Exhibit Hall B Billy Gordon P.E., VP, Engineering, Southwest TN EMC Philip Lim P.E., Director, Engineering, Murfreesboro Electric Department</p>

Brian Hudson P.E., CPE, Electrical Engineer, City of Oxford Electric Department  
Three of your peers will spend a few minutes each sharing their own best practices and the floor will open for attendees to share as well and ask questions of the panelists and each other. Come with questions or information or just come soak up in this open forum format!

1:30 pm - 2:30 pm

***(OPS) System Operator Succession Planning***

Meeting Rooms 18-19

Don Nanney, Sr. Manager, System Analysis & Control, EPB of Chattanooga

Don will share successes and lessons learned for recruiting, training and preparing staff for this highly skilled position.

1:30 pm - 2:30 pm

***(TECH) PV Adoption Tool***

Meeting Rooms 20-21

Steven Coley, Senior Project Engineer, EPRI

This presentation will give an overview of EPRI's residential PV adoption tool (PVAT). The tool uses customer preference information collected from surveys to predict how many residential customers prefer rooftop solar and community solar, and where those customers are located. The presentation will provide context to the development of the PVAT and conclude with a demonstration of its capabilities.

1:30 pm - 2:00 pm

***Solution Center: Vegetation Management***

Solution Center No. 1

Bethany Iverson, Partner Software

1:30 pm - 2:00 pm

***Solution Center: Reduce Errors: 3 Keys to Human Performance***

Solution Center No. 2

Incorporating human performance into all aspects of your operations is critical for improving reliability and reducing errors. Join us to discuss three keys to improving your organization's performance and ensuring reliability.

*Rocky Sease, SOS, Intl.*

2:00 pm - 2:30 pm

***Solution Center: Data Synergy for the Informed Utility***

Solution Center No. 1

Josh Crozier, Futura Systems, Inc.

2:00 pm - 2:30 pm

***Solution Center: Managing Field Inspections and Other Activities with iPads and iPhones***

Solution Center No. 2

Babu Krishnasamy, GISbiz

2:30 pm - 3:00 pm

*Meet the Sponsors Break*

Exhibit Hall A

2:30 pm - 3:00 pm

***Solution Center: Asset Management***

Solution Center No. 2

Will Knapek, OMICRON

2:30 pm - 3:00 pm

***Solution Center: Retro Filling with Natural Esters***

Solution Center No. 1

Larry Christodoulou, Electric Power Systems

3:00 pm - 4:00 pm

***(ENG/OPS) Mitigating Arc Flash Risk***

Meeting Rooms 20-21

Ray Urbanic, Development Engineer, Southwest Electric

An arc flash event poses tremendous risk toward safety of personnel, damage of property, and extended loss of productivity. Agencies like NFPA and OSHA have instituted means to raise awareness of these risks to personnel, but quite often the means to overcome or mitigate these risks remain unaddressed. As a result, the higher the potential arc flash energies remain, the greater repeated investment of personal protective equipment (PPE), safety procedures and training, and backup system procedures and infrastructure are required. We will highlight strategies and methods that help reduce the potential arc flash energy levels, and thereby reduce the amount of PPE and long-term infrastructure investment, as well as reduce further risk to loss of production time. These strategies and methods may require one-time investments in equipment modifications, but yield continual benefits year-over-year. 1) Recognize the potential dangers and risks of arc flash 2) Understand the basic approach for lessening incident energy levels 3) Review three primary methods for mitigating arc flash This presentation would benefit all with responsibility for safety and welfare of any personnel with direct or indirect access to electrical equipment within the workplace (240 volts and above), as well as those with responsibility over the maintenance and productivity of electrical equipment.

3:00 pm - 4:00 pm

***(OPS) Open Forum: System Operation Best Practices***

Exhibit Hall B

Steven Williams, Superintendent, Electric Operations, Decatur Utilities

Richard Kelley CPE, President/CEO, PES Energize

Joe McCarter P.E., VP, Engineering & Operations, Appalachian Electric Cooperative

Three of your peers will spend a few minutes each sharing their own best practices and the floor will open for attendees to share as well and ask questions of the panelists and each other. Come with questions or information or just come soak up in this open forum format!

3:00 pm - 4:00 pm

***(TECH) Interconnecting with One Another***

Meeting Rooms 18-19

Charles Phillips P.E., VP, Engineering & Technical Services, Gibson EMC

Erik Brinke, Director of Economic Development, Blue Ridge Mountain EMC

You will hear how several LPCs are working together for potential interconnection of fiber networks to maximize broadband for their customers.

3:00 pm - 3:30 pm

***Solution Center: Train for the Unexpected: Distribution Operations Training***

Solution Center No. 2

Well-trained employees are better performing employees, helping reduce events on the system. In our discussion, we will demonstrate interactive, engaging training designed specifically for distribution operations to prepare your employees for the unexpected.

*Steve Blume, SOS, Intl.*

3:00 pm - 3:30 pm

***Solution Center: Utilizing Drones (UAS) for Electric Systems Inspection***

Solution Center No. 1

<p>3:30 pm - 4:00 pm</p>	<p>Carolyn Polito, Reliapole Inspection Services Corp.  <b>Solution Center: Milsoft Mobility and Analytics</b>  Solution Center No. 1  Milsoft has partnered with SUS to give your teams the ability to work outages using mobile devices. Field workers can now view and work outages that exist in the Milsoft DisSPatch® OMS on any mobile device.  <i>Brian Watson, Milsoft</i></p>
<p>3:30 pm - 4:00 pm</p>	<p><b>Solution Center: Pulseclosing Technology – The Distribution System Lifesaver</b>  Solution Center No. 2  Distribution faults damage your equipment, reliability, and bottom line. Your current fault management strategy may cause more damage than you realize by multiplying the force applied to your system when testing the line for faults after an event. PulseClosing(r) Technology dramatically reduces the amount of force used during fault testing and significantly lessens momentary outages for customers on the main feeder. Learn how this strategy can help improve your reliability and reduce costs for you and your customers.  <i>Presenter: Lea Maurer, Curtis H. Stout</i></p>
<p>4:00 pm - 5:00 pm</p>	<p><b>(ENG/OPS) Employee Performance Documentation</b>  Meeting Rooms 20-21  Stacie Caraway, Attorney, Miller &amp; Martin PLLC  Learn how to properly document employee performance to both help the employee succeed and to understand legal issues that can result in improper and incomplete documentation.</p>
<p>4:00 pm - 5:00 pm</p>	<p><b>(OPS) Underground Design/Tagging Procedures</b>  Meeting Rooms 18-19  Tony Brown, Contractor Inspector, Murfreesboro Electric Department  Ron Davidson, Network &amp; Standards Engineering Supervisor, Nashville Electric Service  Jackie Whitaker, Director of Operations, Murfreesboro Electric Department  Best practices shared for underground design and tagging.</p>
<p>4:00 pm - 5:00 pm</p>	<p><b>(TECH) Open Forum: Integrating Technology into Your Work</b>  Exhibit Hall B  Nikki Townsend CPSv, Manager, Engineering, North Georgia EMC  Larry Taylor P.E., Supervisor, Engineering Technology, Middle TN EMC  Jason Grisham CPE, CPSv, Chief Operations Officer, Alcorn County EPA  Three of your peers will spend a few minutes each sharing their own best practices and the floor will open for attendees to share as well and ask questions of the panelists and each other. Come with questions or information or just come soak up in this open forum format!</p>
<p>4:00 pm - 4:30 pm</p>	<p><b>Solution Center: Reliability of Wood Pole Restoration - Restore / Re-Use vs. Replace</b>  Solution Center No. 1  Osmose wood pole-restoration systems are designed to restore poles weakened by decay or other damage so they exceed NESC requirements. Osmose systems restore the</p>

	required strength in the ground line section of a pole usually for one-third or one-fourth of the cost of pole replacement. A video will be shown to demonstrate process, along with presentation discussing details and benefits of this alternative to wood pole replacement. <i>Patrick Kraft, Osmose</i>
4:00 pm - 4:30 pm	<b>Solution Center: TIGER Pad: The New Multi-Tool for Electric Utilities</b> Solution Center No. 2 Travis Baldwin, ERMCO Transformers
4:30 pm - 5:00 pm	<b>Solution Center: Mobile Apps</b> Solution Center No. 1 Ron Aiken, dataVoice International, Inc.
4:30 pm - 5:00 pm	<b>Solution Center: Internal Fault Detection in Distribution Transformers</b> Solution Center No. 2 Paul Henault, IFD Corporation
5:00 pm - 6:30 pm	<b>Reception</b> Exhibit Hall A Come enjoy a snack, mingle with friends and make dinner plans!
5:00 pm - 5:30 pm	<b>Solution Center: Direct Transfer Trip for Distributed Generation Using Cellular Communications</b> Solution Center No. 2 Kevin Hapke, Siemens Industry, Inc.
5:00 pm - 5:30 pm	<b>Solution Center: Mobile Apps</b> Solution Center No. 1 Ron Aiken, dataVoice International, Inc.
5:30 pm - 6:00 pm	<b>Solution Center: Prioritizing Maintenance of Power System Assets</b> Solution Center No. 2 Marvel Davis, IPS Energy
5:30 pm - 6:00 pm	<b>Solution Center: Get a Grip On Your Fiber Network Before It Goes Dark</b> Solution Center No. 1 Did you hear about the utility that kept its fiber network documentation piecemeal in a CAD system, multiple spreadsheets and the head of one key employee? If that sounds too familiar, there is an alternative where the information for your fiber network, both inside and outside plant, can be consolidated into a single database with easy access to anyone that needs it. Where information is kept at the port/fiber level which gives a utility the ability to trace an entire circuit from port to port or run an OTDR trace based on distance. The benefits of consolidating the information for your utility's fiber network are enlightening. <i>Presented by Charles Huddleston, Central Service Association</i>
6:00 pm - 6:30 pm	<b>Solution Center: Advances in Wireless Communications</b> Solution Center No. 2 Dave Rumore, Future Technologies, LLC
6:00 pm - 6:30 pm	<b>Solution Center: Internal Fault Detection in Distribution Transformers</b> Solution Center No. 1 Paul Henault, IFD Corporation



**08/11/2017**

7:00 am

*Registration Open*

Registration Desk

7:00 am - 8:00 am

*Breakfast with the Sponsors*

Exhibit Hall A

7:30 am - 8:00 am

***Solution Center: TBD Available***

Solution Center No. 2

TBD

7:30 am - 8:00 am

***Solution Center: TBD Available***

Solution Center No. 1

TBD

8:00 am

**THIRD GENERAL SESSION**

Exhibit Hall B

8:00 am - 9:00 am

***Technology Case Studies***

Exhibit Hall B

Mike Collum P.E., Regional Technical Manager, Schweitzer Engineering Labs  
Kevin Hapke, Business Development Manager, Siemens Industry Inc  
Siemens' presentation will cover some of the issues and solutions now available to utilities as they try and add automation to their distribution systems. Case studies will be shared where Siemens integrated with different manufacturers products, and are able to add automation functionality to existing equipment. SEL's presentation will cover several solutions for automatic feeder restoration during power outages. These systems work with feeder fault protection to isolate faulted feeder segments and intelligently restore electrical service to as many customers as possible. The speed of restoration is optimized for each feeder and can be as short as a few cycles for critical customers. This session will highlight a few recent installations to provide information on how SEL approaches outage restoration management. Attendees will gain a better understanding of protection, automation, and communication equipment required to provide better electric service for their customers.

8:00 am - 8:30 am

***Solution Center: Peak Shaving via SCADA***

Solution Center No. 1

How to payoff your investment in a SCADA system with Peak Shaving, or increase the return on investment in your current SCADA system. Using a Peak Shaving application within SCADA can quickly yield cost avoidances that add up fast, making it a clear choice for those with SCADA already, and offering an extremely short payback period for utilities without SCADA.

*Presented by Sam Mullinax, Advanced Control Systems*

8:00 am - 8:30 am

***Solution Center: Saving Money with Advanced Voltage Management***

Solution Center No. 2

Distribution utilities can save considerable money by actively managing voltage throughout the monthly peak period and at other times. Utilities using DVI's EDGE software are

	<p>achieving reduced wholesale power bills, improved reliability, providing savings to their members and customers, and increasing PV hosting capacity by minimizing voltage instability. This session will cover the business case of voltage management, the benefits from using AMI voltage data, and the operational improvements that result from using EDGE analytics.</p> <p><i>Presented by Steve Kenny, DVI</i></p>
8:30 am - 9:00 am	<p><b><i>Solution Center: Battery Selection: What Do I Need To Know?</i></b>  Solution Center No. 1  David Brady, Quality Standby Solutions</p>
8:30 am - 9:00 am	<p><b><i>Solution Center: Asset Risk Management System</i></b>  Solution Center No. 2  Tracy Flippo, Doble Engineering Company</p>
9:00 am - 9:45 am	<p><b><i>Keeping the Grid Safe and Reliable</i></b>  Exhibit Hall B  Rick Hartlein, Director, NEETRAC  This presentation covers a variety of projects conducted by NEETRAC for its members, which includes TVA. It includes a brief review of NEETRAC facilities and capabilities as well as a quick review of selected projects such as polymer cutouts, temporary ground jumpers, underground cable quality assurance and integral disconnect switches in single phase revenue meters.</p>
9:00 am - 9:30 am	<p><b><i>Solution Center: Importance of Structural Steel Inspection</i></b>  Solution Center No. 1  Carolyn Polito, Reliapole Inspection Services Corp.</p>
9:00 am - 9:30 am	<p><b><i>Solution Center: Battery Installation and Maintenance Considerations</i></b>  Solution Center No. 2  David Brady, Quality Standby Solutions</p>
9:30 am - 10:00 am	<p><b><i>Solution Center: Direct Transfer for Distributed Generation Using Cellular Communications</i></b>  Solution Center No. 1  Kevin Hapke, Siemens Industry, Inc.</p>
9:30 am - 10:00 am	<p><b><i>Solution Center: Advanced GRID Infrastructure: Connecting More than Metering</i></b>  Solution Center No. 2  Over the last decade a boom in the growth of AMI systems has spread across the rural cooperative landscape with a focus to provide meter to cash automation and metering metrics. Today, a rapidly expanding world of automated and intelligent technologies require more bandwidth, speed and near real-time information to manage the distribution grid efficiently. Utilities are handcuffed by bandwidth limitations of metering centric, proprietary communication protocols of networks that were never designed to handle the complexity and volumes of data these modern, distribution automation technologies generate and require. Silver Spring Network is the only network first, hardware agnostic communications infrastructure architected for advanced distribution systems. As a standards based, IPv6, Advanced Grid Infrastructure with more than 150 integrated AND</p>

deployed DA technologies from every major manufacturer, Silver Spring Network puts the utility back in charge of the DA and metering ecosystems.  
*Presented by Rich Miller, NRTC*

9:45 am - 10:15 am

*Meet the Sponsors Break*

Exhibit Hall A

10:15 am - 11:00 am

***Regional Disaster Response and Recovery***

Exhibit Hall B

Gabrielle Benigni, President, Disaster Programs and Operations Inc.

11:00 am - 11:30 am

***Fire on the Mountain: Sevier County Wildfires***

Exhibit Hall B

Jeff Hedrick P.E., Director of Engineering & Operations, Sevier County Electric System  
The presentation will explore the conditions that led up to the devastating wildfires that occurred in the Gatlinburg area on November 28-29, 2016. We will discuss the damage caused by the high winds and fires, the restoration effort and costs, and the lessons learned.

11:30 am - 12:00 pm

***MLGW Tom Lee Storm, May 27, 2017: A Restoration Recap***

Exhibit Hall B

Callen Hays, Assistant Manager, System Operations, Memphis Light Gas & Water  
Memorial Day weekend brought a massive storm that knocked out power in much of the TVA service area. MLGW suffered the third worst outage in the utility's history with more than 180,000 customers in the dark. Callen Hays, assistant manager of systems operations for MLGW will share the impacts and what they have learned from this storm and may do differently preparing for storms moving forward.

12:00 pm

**Adjourn**

No location

Please be sure to mark your calendars for next year's Engineering & Operations Conference! Date and location will be available soon.