CTCE At-A-Glance

Cooperative Technologies Conference & Expo

Tuesday, 14

1:00 PM - 5:00 PM — Vendor Setup — ***Kensington Ballroom***

Optional set up for vendors

3:00 PM - 5:00 PM — Registration — ***Hampton Foyer***

Early Check-in is open

Wednesday, 15 — PDH: 2

7:30 AM - 11:30 AM — Vendor Setup — ***Kensington Ballroom***

Setup for vendors

7:30 AM - 8:45 AM — Registration — ***Hampton Foyer***

Registration Check-in is open

8:45 AM - 9:15 AM — Conference Kick-off — ***Windsor Ballroom***

Opening Remarks

9:15 AM - 10:15 AM — The Transformational Technology of the Internet of Things — ***Windsor Ballroom***

For this session, the speaker will discuss the transformational nature of the Internet of Things. We will specifically explore how IoT's transformational technologies will affect the business models of electric utilities. The speaker's innovative company, RioT, works to revolutionize how companies capture emerging markets and accelerate startups. Using expertise developed on the ground, we will discuss how co-ops can lay the groundwork within rural America to facilitate the development of these technologies.

Tom Snyder, Executive Director, RIoT

10:15 AM - 10:30 AM — Break

Refreshments and transition to next session

10:30 AM - 11:30 AM — ***Breakout 1***

- Engaging Customers Through Voice Assistants — ***Eton***

  Utilities are constantly looking for ways to engage with their customers. Finding opportunities that are meaningful, 'sticky' and result in improved customer experience can be challenging. The emergence of voice and the connected home provides a brand-new avenue to achieve this.

  Since launching the ecobee4 Smart Thermostat with built-in Amazon Alexa Voice Service, ecobee has been collecting a wealth of information about how customers think and interact with their devices. This information demonstrates what we might expect (25% of all Alexa usage is for Home Automation) but did you ever think that 25% of all Alexa calls on an ecobee would be to play music? A recent study of more than 1,500 households with voice assistants and found that 53% of respondents report saying "please" and "thank you" to their devices.

  Florida Power & Light, who serves more than 4.4 million customers in Florida, recently launched an Alexa skill to connect with their customers in a new way. Customer feedback on the FPL skill has been positive, applauding FPL on their innovative approach to customer engagement. ComEd allows customers to pay their bills through the Alexa skill. The possibilities are boundless with myriad opportunities to engage utility customers with energy savings tips, consumption data, billing information and much more.

  Sarah Colvin, Director of Business Development, ecobee

  Jim Musilek, Director Grid Modernization, NCEMC

- Aerial Fiber Infrastructure — ***Windsor Ballroom***

Most electric cooperatives have completed fiber projects, are currently in the throes of building fiber networks, or contemplating fiber projects. This session will feature a panel discussion regarding the complexities of deploying fiber, the business case for electric cooperatives to engage in the fiber business, and the improved service levels fiber can bring to the core business of electric cooperatives. Each of the panel participants will present valuable insights from his particular perspective, including fiber manufacturing, fiber installation, retail internet services, and cooperative engineering.

Lee Ayers, VP- Engineering, Mid-Carolina Electric Cooperative

Carlos Escobar, AFL

Glenn Martin, CEO, Carolina Connect

- Voltage Optimization Using Energy Routers — ***Somerset***

Cooperatives are looking at ways to optimize their voltage reduction programs on a substation and feeder level, along with localized control of voltage for demand response. Utilizing the Grid Energy Router, utilities are able to reduce their voltage levels even further without degradation to the level of service provided their members, and they are able to capitalize on demand response at a localized level on the grid. Two cooperatives will highlight what they are doing with the Grid Energy Router and what their results have been.

Mark French, Regional Sales Manager, ERMCO

Kevin Jordan, Supervisory Engineer, Horry Electric Cooperative

Lewis Shaw, Manager, Engineering, Brunswick EMC

- Let's Go Threat Hunting: Gaining Visibility and Insight into Potential Threats and Risks — ***Oxford***

The threat landscape of 2018 continues to evolve. The perimeter has faded away. The days of firewall (even next gen), anti-virus and patching being sufficient are behind us. Mere protection, however diligent is not practical to defend against threats. Adversaries are difficult to distinguish clearly from insiders. Even money says the threat is already inside – aka the assume breach paradigm.

Are you still only reacting to alerts and incidents? That's so 2016! What's needed is to constantly look for attacks that have gotten past security systems, maybe catch intrusions in progress rather than after the breach. Welcome to Cyber Threat Hunting.

Advanced technology is no longer a sufficient defense. Learn more about threat hunting and the tools necessary to defeat your cyber threat adversaries.

In this session you will learn:

•What exactly is threat hunting and why you should care

• Which tools are necessary to be effective in today's threatscape

• Who is successfully administering threat hunting and why

•How actual threats are stopped, cold in their tracks

• Why proactive threat hunting is critical to your organization

John Ayers, VP of Product Management, Netsurion

12:00 PM - 1:00 PM	Lunch on your own Box lunches provided for golf participants at the course.	
12:30 PM - 5:00 PM	Golf Tournament Captain's Choice format. Check-in begins at 11:30 AM. Shotgun start 12:30 PM. Shuttle provided from Kingston Plantation.	***Arcadian Shores***
6:00 PM - 7:30 PM	Welcome Reception (light hors d'oeuvres) Reception - Light Hors d`oeuvres	***Kensington Ballroom***

Thursday, 16 — PDH: 4

7:30 AM - 8:30 AM	Registration	***Hampton Foyer***

Registration Check-in is open

8:15 AM - 8:30 AM

Golf Tournament Prizes

Windsor Ballroom

Golf tournament winners announced with prizes.

8:30 AM - 9:30 AM

Benefits of Drones to Utilities

Windsor Ballroom

Hear firsthand how co-ops are achieving immediate operational value through drones! Learn what an industrial-grade drone can do and what utility applications co-ops are already taking advantage of. Get help deciding what drone applications should be outsourced vs. done in-house. Hear how one cooperative saved thousands and got phenomenal results on a recent transmission line inspection. You'll gain valuable insight on how to take the first steps in creating a drone program at your co-op.

Steve Ballard, Manager of Cyber Security and Information Technology, Wake EMC

Rusty Ortkiese, UAS Sales Engineer, GRESCO

Chris Wright, System Engineer, Wake EMC

9:30 AM - 12:55 PM

Vendor Hall Opens

Kensington Ballroom

Spend time meeting vendors. Buffett lunch provided.

12:55 PM - 3:15 PM

Vendor Ad Hoc Meetings

Kensington Ballroom

Vendors can use this time to schedule ad hoc meetings with attendees

1:00 PM - 2:00 PM

Breakout 2

- ## SMECO's Virtual Audit: Smart Thermostats, Data Analytics, and Customer Engagement

  Eton

  In 2017, the Southern Maryland Electric Cooperative (SMECO) concluded a comprehensive smart thermostat pilot to understand the potential of smart thermostats. The pilot quantified energy savings, demand response potential, and customer-member satisfaction, as well as utilized data analytics to conduct remote energy audits.

  While the energy and peak demand savings associated with smart thermostats are exciting, remote energy audits and optimization utilizing granular data acquisition, advanced algorithms, and cloud technology have demonstrated promising potential. SMECO leveraged smart thermostats and data analytics to develop personalized alerts and program recommendations for things like weatherization, HVAC tune-ups, and behavioral changes.

  This presentation will cover the concept and development of SMECO's remote energy audit including technology, deployment, findings, and customer-member reception.

  Justin Mackovyak, Manager of DSM Programs, ICF

  Jennifer Raley, Energy & Technology Programs Manager DSM, Southern Maryland Electric Cooperatives

- ## Cooperative Cellular Data Use Cases & Deployments

  Windsor Ballroom

  Come hear firsthand how EMCs are utilizing internet restricted private network connections from carriers such as Verizon to increase operational efficiencies and stay in touch with downstream assets. With advancements in reliability, security, and coverage, cellular is being utilized mainstream for metering, monitoring, and even control of capacitor banks, regulators, and reclosers. High level architecture, equipment options, and business case to be discussed.

  Doug Krynicki, VP of Information Technology, Four County EMC

  Keith Mckechnie, Solutions Engineer, USAT

  John Steinberger, Business Dev. & Strategy - Utilities, Verizon

  Todd Young, Manager Solutions Architects, Verizon

- ## Distribution Substation Relaying: Trends That Will Affect Your Next Design

  Somerset

Your next new substation or relay upgrade will utilize digital protective relays. But which ones? And, what protection schemes should be utilized. This session will present some of the trends and new technologies which are influencing the protection of distribution substations and radial transmission lines.

Court Weathers, Senior Engineer, Booth & Associates

- Multi-factor Authentication — ***Oxford***

  It is 2018 and safe to say that hackers own the tried and true standard of using passwords for system access. The username and password have overstayed their welcome and can no longer be granted safe passage through our data networks and systems on their own. It is time to implement Multi-factor authentication and take back the security advantage your organization has lost.

  Kevin Thomas, Co-Founder, Contextual Security

2:00 PM - 2:15 PM — Break

Refreshments and transition to next session

2:15 PM - 3:15 PM — ***Breakout 3***

- Harnessing Your Vitals: Generate, Collect and Analyze Data to Drive Better Results — ***Windsor Ballroom***

  The session will take a holistic (end-to-end) view of data – from tools to generate data (meters, sensors, etc.) to technologies to get that data back to systems of record (fiber, wireless, backhaul) to applications that can help an electric cooperative analyze, manipulate and present that data in a way that makes it actionable.

  Greg Bartolomei, President, Utility Solutions, NRTC

  Ashley Kelly, Director of Sales, Itron

  Doug Lambert, Director of Analytics, NRTC

- The Future of Cellular Networking – Central EMC / 5G / FirstNet — ***Somerset***

  The future of cellular networking is set to change communications as we know it. In this session we will analyze a live cellular routing use case presented by Central EMC , define and explore the future capabilities of 5G and see now utility companies will soon be able to take advantage of FirstNet (dedicated cellular network for First Responders).

  Dan Dunn, Managing Director, Concise Networks

  Matt Gardner, Central EMC

- Protecting Your Assets: A Comprehensive Review of Field Inspection and Audit Technologies — ***Eton***

  Cooperatives and service companies are leveraging technology to make the inspection of assets more efficient and accurate. From auditing service points to inspecting poles, we will review the latest technologies and innovative solutions now available to utilities.

  Terry Berge, Founder, Bellwether Management Solutions

- Zero Trust Networks! — ***Oxford***

  For far too long, decisions surrounding network architecture and security have been based on the principal, “Trust, but verify.” Today’s threat landscape demands a far more stringent approach. Come find out how the Zero Trust Network principal of “Never trust. Always verify” proves itself to be a worthy countermeasure to modern-day cyber threats and the new baseline for network security.

  John Kindervag, Field CTO, Palo Alto Networks

- GIS and Asset Details Integration — ***Winchester***

Learn how McKenzie Electric Cooperative, Inc. has integrated WindMilMapTM and IPS-ENERGYTM to provide field and other personnel real-time access from WindMilMapTM to asset maintenance details generated in IPS-ENERGYTM, including test, inspection and relay settings data. The presentation will explain why it is important to integrate key maintenance details into the GIS system, describe options to enable GIS/Asset Management integration, the kinds of details you should access, benefits derived from integration, and demonstrate how McKenzie Electric's system is implemented.

Marvel Gentry Harmon, IPS-Energy

3:15 PM - 3:30 PM **Break**

Refreshments and transition to next session

3:30 PM - 4:30 PM **Electric Vehicle and Their Effect on the Electric Grid** ***Windsor Ballroom***

Electric utilities and environmental advocates find common ground in "beneficial electrification." New and improved technologies and distributed generation have led to electric appliances becoming much more efficient and "greener" than fossil-fueled appliances. The public's growing affinity for "all things electric" includes electric vehicles (EVs). As more and more members and communities adopt electric transportation, co-ops will experience major load growth while at the same time lowering carbon emissions. Many co-ops already offer special EV rates and have installed charging stations. Increasing EV adoption also means co-op engineers and IT professionals will experience increasingly complex grid operations. Audience members for this session will gain insights on how the adoption of EVs will affect the electric grid and day-to-day operations.

Michael McCrea, Strategic Account Executive, EPRI

Mike Settlage, Manager of Grid Modernization, PowerServices

Fred Smith, Vice President of Economic Development & Compliance, Randolph EMC

Chris Wright, System Engineer, Wake EMC

Michael Youth, Government & Regulatory Affairs Counsel, NCEMC

3:35 PM - 5:00 PM **Vendor Break Down** ***Kensington Ballroom***

Vendors may break down their booth at this time

5:00 PM - 7:00 PM **Special entertainment by the "I.T. Band"** ***Poolside at Splash***

Come listen to great music by the IT Band

Friday, 17 — PDH: 3

8:00 AM - 9:00 AM ***Breakout 4***

- **The Emerging ENERNET: Downline Devices Enable a Modern Intelligent Grid** ***Windsor Ballroom***

Electric distribution grids are becoming increasingly complex with the advent of distributed energy resources on both the utility's system and the customer's side of the meter as well as increasing customer expectations of reliability and quality of service. Fortunately, at the same time, improving monitoring and control devices and improving information and communications technologies, including the Internet of Things (IoT), are enabling electric utilities to better monitor and operate their electric grids. Learn more about the Internet of Things and how it can improve electric grid planning, operations, and management. Hear examples of how two progressive electric distribution cooperatives are utilizing the IoT to accomplish this.

Steve Collier, Director Smart Grid Strategies, Milsoft Utility Solutions

Angela Hare, VP Technology & Customer Service, Central EMC

Dennis Mabe, VP Engineering & Operations, Randolph EMC

- **Best Practices for choosing your next Gen AMI** ***Winchester***

Does all the chatter around next Gen AMI systems make your head spin? The responsibility of choosing an AMI system that delivers more than just meter readings is a huge task, and one that you want to be prepared for. In this session you will hear expert advice from an AMI consultant on the right questions to ask as you begin the process of you choosing your next Gen AMI.

Greg Johnson, President, Katama Technologies

- Microgrid Case Study: Butler Farms — ***Somerset***

The Butler Farms Microgrid is the first microgrid for the North Carolina's Electric Cooperatives to incorporate a member's existing energy resources with utility owned resources. The panel will discuss details of the project from the perspective of the distribution cooperative, engineering, procurement and construction (EPC), and statewide project manager.

John Lemire, NCEMC

Peter Rant, Vice President, PowerSecure

Chuck Richardson, South River EMC

- Data Analytics: A Hands-on Technical Demonstration — ***Oxford***

Data Analytics is a very broad term that means different things to different people. It can range from the very complex extrapolations to rendering basic information from existing data. This session will outline how a COOP can get started in developing its own program. It will discuss the skill sets needed, the tools used, and show live examples of completed projects.

Andrew Radford, Integration Specialist, South River EMC

9:00 AM - 9:10 AM **Break**

Refreshments and transition to next session

9:10 AM - 10:10 AM ***Breakout 5***

- Data Maps: How a Geo-Spatial View Can Help Your Operations — ***Winchester***

OATI and GridCure will demonstrate how integrating data from multiple systems into a cohesive geo-spatial representation can provide tools that enhance the situational awareness of operations personnel. As an example, traditional SCADA and OMS electrical grid element conditions can be combined with AMI data and alerts, distributed resources information, and power flow results on a single geo-spatial view. This combination allows the dispatcher to see voltage issues, blink analysis, generation issues (with residential and community DERs), and many other insights into the over health of the distribution system.

Tagg Jefferson, CEO, GridCure

Walter Kalsow, Principal Consultant, OATI

- Best Practices against a Disaster: Devising a SCADA Recovery Plan — ***Windsor Ballroom***

Many co-ops use supervisory control and data acquisition (SCADA) systems to monitor and control critical systems across the grid. Like all technology, these systems are vulnerable to attacks, including natural disasters, human error, and security breaches. This session will take a deep dive into how a co-op can mitigate SCADA downtime and a possible operational disaster situation by implementing dual redundancy with servers at different locations.

Steve Ballard, Manager of Cyber Security and Information Technology, Wake EMC

Daniel Nechay, Survalent

Billy Walker, Manager of Technical Services, Wake EMC

- Fiber for Cooperatives: Design and Installation Experience — ***Somerset***

Fiber-to-the-home is a fast-growing method of providing vastly higher bandwidth to consumers, and thereby enabling more robust video, internet and voice services. The delivery of a communications signal over optical fiber provides the most bandwidth and reliability. But, is it the correct choice for Cooperatives who want to improve their communications infrastructure to their electronic equipment? Is it something that Cooperatives may want to supply all the way to the member's meter for AMI or providing broadband service? Is it the correct choice for your Cooperative? This presentation will discuss our experience designing and installing fiber communications systems to substations, remote equipment and individual meters to supply broadband service. We will discuss the economics, material, engineering, operations and lessons learned at the Cooperative.

Joe Scruggs, Engineer, McCall-Thomas Engineering

- A Comprehensive Cybersecurity Framework for Cooperative Utilities — ***Oxford***

Cybersecurity is becoming critical in the electric sector as power systems become more internetworked and the demarcation lines between the Information Technology and Operational Technology are gradually disappearing to support Smart Grid applications. At the same time, the cyber threat vectors from external sources and insiders are increasing, requiring a defense in depth approach to protect power systems from unauthorized access, data fuzzing, reconnaissance and cyber-physical disruptions.

In his presentation, Dr. Erfan Ibrahim, Founder and CEO of The Bit Bazaar LLC (TBB), will provide a conceptual overview of data security and describe the basic attributes of an empirically validated defense-in-depth cybersecurity architecture for protecting power systems from both insider and external threats.

Dr. Ibrahim will also present a complete life cycle methodology for protecting any digital technology that he has formulated and offers as a service from TBB. This modular digital technology protection methodology can serve as the blueprint low-cost cybersecurity framework for cooperative utilities. Dr. Ibrahim will conclude his presentation with an overview of a software enabled cyber governance assessment exercise from TBB that serves as the starting point for the digital technology protection methodology.

Dr. Erfan Ibrahim, Founder & CEO, The Bit Bazaar LLC

10:10 AM - 10:20 AM	Break Refreshments and transition to next session	
10:20 AM - 10:40 AM	Door Prizes Prize give away. Must be present to win.	***Windsor Ballroom***
10:40 AM - 11:40 AM	Cooperative Leadership: Leveraging Your Technical Talents To Serve Members	***Windsor Ballroom***

Any of us that are highly technically trained often struggle with two issues: 1.) Difficulty communicating with non-technical mortals, 2.) Remembering that just because we can – does not mean we should or that anyone really cares.

As you have seen throughout your conference, in today's evolving cooperative business, we are inundated with technology advances. These powerful tools should allow us to better serve the needs of our members. However, we often miss opportunities due to our lack of understanding the needs of our members or how to get our fellow employees to understand the value propositions we provide. In this session we will explore how to fully leverage our tools and talents by increasing cooperative communication, acceptance of change and inter-departmental teamwork. We will cover these issues from the framework of our cooperative business model and Seven Cooperative Principles.

Bryan Singletary, President, Practical Energies

11:40 AM - 12:00 PM	Closing Remarks Conference wrap-up	***Windsor Ballroom***