

RELAY

FLORIDA'S ENERGY & ELECTRIC UTILITY MAGAZINE

Volume 56 • Issue 1 • Fall 2023



PREPARING EMPLOYEES TO
RESPOND **TO A BLACK SWAN**
TRAUMATIC INJURY EVENT

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IMPROVE COMMUNICATIONS AND THE
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ARTICLES

20 **FMEA Members Leverage Technology to Improve Communications and the Customer Experience**

Communications or customer service enhancements made by world-class service providers outside the utility industry eventually shape consumers' expectations of all other providers, including utilities. As consumer expectations continue to evolve, FMEA members are deploying new technologies to better serve customers while also lowering costs, breaking down internal costs and improving the customer experience.

25 **FMEA Associate Members Help Member Utilities Implement System Upgrades to Improve Reliability**

Given Florida's extreme weather, it may not be possible for utilities to completely "future-proof" their transmission and distribution (T&D) systems. But FMEA members are working with associate members to ensure those systems are as reliable, resilient and safe as they can be to better withstand whatever weather the future may bring.

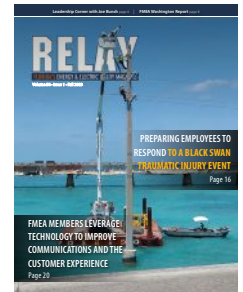
30 **Maintaining Crucial Connections with Updated Communications**

When it comes to critical infrastructure, reliable communication is crucial to managing consistent service. In 2021, GRU, an electric utility in Gainesville, Florida, required the replacement of its entire aging legacy GE JMUX SONET system with a Belden XTran MPLS-TP system. Jeff Garteiser, PE, substation and relay manager at GRU, sought a modern, flexible communication system that will provide for its current and future data needs.

FEATURE

16 **Preparing Employees to Respond to a Black Swan Traumatic Injury Event**

Some jobs at an electric utility are among the most dangerous in the world, right alongside firefighters, loggers, deep-sea fishermen, iron workers, roofers and construction workers. FMEA members work hard to ensure their employees operate in a culture of safety, but do your employees know how to respond to the rare traumatic injury — when lives and limbs are at risk?



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Where in the world is *RELAY*?

Built very close to the Roman crossing, the *Ponte Vecchio*, or "Old Bridge," was the only bridge across the Arno in Florence until 1218. The current bridge was rebuilt after a flood in 1345. During World War II, it was the only bridge across the Arno that the fleeing Germans did not destroy. When Rafael Couret, VP of marketing and business development with POWER Engineers, and his wife visited Italy this year, they remembered to pack a copy of *RELAY* magazine! Don't forget a copy on your next trip! Send pictures to relay@flpublicpower.com.

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FMEA's Long-Standing Relationship with Associate Members

For nearly eight decades, FMEA's primary focus has been to represent the unified interests of Florida's public power communities and their dedicated employees, now a workforce of more than 5,700 in 33 Florida cities. We support, promote and connect our member utilities through government relations, mutual aid coordination, communications, education and networking opportunities.

Our membership base is robust — not only because of FMEA's 33 member utilities and their thousands of engaged employees, but also because of the long-standing relationships FMEA has with our Associate Members — companies and organizations that do business with or who wish to forge relationships with our member utilities. These enduring relationships date back to 1979, when R.W. Beck became FMEA's very first official Associate Member.

R.W. Beck was an engineering consulting company, focused primarily on public and private infrastructure and utility organizations. Like many companies, over time R.W. Beck was acquired by another firm, SAIC, which eventually became Leidos Engineering LLC. I'm proud to say R.W. Beck's legacy involvement in FMEA has withstood the test of time through its modern-day company, Leidos, which received FMEA's Associate Member of the Year award in 2019 and whose association with FMEA continues to this day.

Currently, there are more than 100 Associate Member companies actively affiliated with FMEA. These companies offer a wide range of services that are critical to the electric utility industry. From consultants and contractors to customer service technology solutions and electric utility supplies, FMEA's Associate Member companies are essential to the success of our member utilities.

These companies help our utilities meet a shared mission: to provide safe, reliable and affordable electricity to millions of customers across Florida. By collaborating with FMEA and our utility members, our Associate Members join us in improving Florida's electric grid and supporting and strengthening our public power communities.

Why do companies become an Associate Member in FMEA and renew their commitment year after year? Through FMEA's Associate Member program, reputable suppliers, vendors and consultants have increased exposure to public power utility CEOs, managers, decision-makers and employees at all levels of the organization. FMEA is the conduit to connect these vendor companies with our 33 member utilities. How? For one, FMEA has a close pulse on what is going on at our utilities and in their communities, including knowing who is doing what, what projects are next and what needs may be required to be met. We offer tradeshow and exhibitor opportunities at our annual Energy

Connections Conference, Florida Lineman Competition and Hurricane Forum. FMEA also offers networking opportunities at all our major events that provide Associate Members the opportunity to interact face-to-face with our member utilities and continually build relationships that are essential to their business.

Further, Associate Members receive added membership benefits afforded to FMEA utility members, such as continuous brand exposure, inclusion in our membership directory, access to FMEA's weekly Headline News featuring the latest news in Florida public power communities and across the state and nation — and numerous other member benefits.

Becoming an FMEA Associate Member demonstrates the company's commitment to Florida public power, and, in turn, Associate Members help our member utilities provide affordable, reliable service to the communities they serve.

For this issue of *RELAY*, we reached out to FMEA Associate Member companies and asked them to help us highlight business partnerships with our member utilities. The results we received are featured in this issue. From infrastructure improvements that increase reliability, to improving safety, to enhancing customer service, FMEA's Associate Members are powerful partners in building stronger Florida public power communities. ■



Q&A with Joe Bunch

*General Manager and CEO for
New Smyrna Beach Utilities*

Joe Bunch started as general manager and CEO in November 2018 after a 30-year career with Exelon Utilities and Baltimore Gas & Electric Co. (BGE), bringing with him a broad base of experience in strategic planning, utility engineering, operational leadership and business improvement.

During Joe's tenure with New Smyrna Beach Utilities (NSBU), he has provided vision and leadership for the development and implementation of long-range strategic plans leveraging industry best practices for electric grid and water system modernization and sustainability to meet the evolving needs of the customers and local community. Joe was named president of FMEA in July 2023 and currently serves on the Board of Directors of Florida Municipal Power Agency.

Tell us a little bit about your background.

I was born and raised in Baltimore County, Maryland. I attended Johns Hopkins University, where I earned a bachelor's degree in electrical engineering. I am married, and my wife, Linda, and I have one adult son who lives in Hawaii with his family. After a tour in the Air Force, I spent the next 30 years working for BGE, which merged with Exelon Utilities. While with BGE, I led a broad range of functions that spanned engineering operations, project management and major customer relationship management. In the last several years with Exelon, I worked in an executive group reporting to the CEO and having responsibility for delivering best-in-class corporate performance. In that role, I was accountable for electric system reliability and delivering on the benefits from the smart grid investments made across all six of its utilities, serving more than 10 million customers.

Tell us about your leadership journey to public power. What brought you to lead a public power utility after decades working in investor-owned utilities?

While employed with BGE, I occasionally dealt with other nearby municipal and cooperative utilities (in Maryland, Virginia, Delaware



and Washington, D.C.), and over the years I had positive working relationships with those utility peers. What interested me in public power was the opportunity to leverage my experience to lead the whole utility business, in contrast to having responsibility for parts of the business working in the larger IOUs. To that point, I retired from Exelon to accept this role and have now been with NSBU for the last four-and-a-half years. I've tried to adopt the best aspects of my prior experience and leadership style and apply solutions in a way that makes sense for our scale utility systems and community.

Describe your leadership style. How does this factor into your approach for working with your commissioners who govern New Smyrna Beach Utilities?

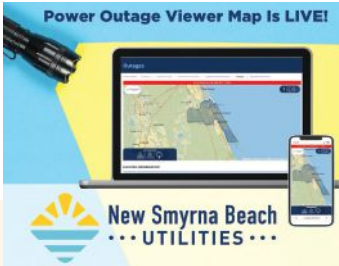
I would describe my leadership style as very practical; I believe in leading the team by engaging senior leaders and our



commission in the development of key strategies for running and improving the business. Then, the leadership team and I engage the organization and our employees to deliver the projects and day-to-day results we strive to achieve. We have also built a positive work environment for our employees and have engaged with the community [through] volunteerism and charitable giving.

What would you like RELAY magazine readers to know about New Smyrna Beach?

New Smyrna Beach is a beautiful coastal community, and the city and its residents strive to maintain the attractiveness, environment and small beach town vibe that our residents and visitors alike have come to appreciate. It is that special chemistry that keeps the long-term and part-year residents living here, as well as attracting visitors. As a result, preserving that feel and protecting the environment, including the beaches and Indian River Lagoon, is very important to the city commission and local residents alike.



New Smyrna Beach Utilities recently underwent a full rebranding and name change. Why was it important for you to champion this major initiative, and what did it mean for both the community and your employees?

When I was hired, our commission wanted and expected us to make big improvements to the business and at the same time improve our relationship with the City of New Smyrna Beach and our customers. As we planned for business improvements, we felt a rebranding provided a thoughtful break from the past, and made the rebranding part of achieving

the goals we planned for the next five to 10 years. Our old name was also very long; the shorter name, New Smyrna Beach Utilities, and our simplified logo reinforce that we are an integral part of the community.

Describe some of your first impressions when you first became a GM and CEO. Is this what you expected?

My first impressions of NSBU included feeling very fortunate to have a group of employees who are dedicated to serving our community and representing NSBU in a very positive manner. They routinely go above and beyond to assure our customers' needs are met, and I frequently receive compliments based on interactions with our employees. On the business side, our electric and water systems required a good deal of updating and improving, so the leadership team worked with consultants to develop a grid and water modernization to improve the reliability and sustainability of our utility systems. At this point, we are about three years into implementing that plan, with many improvements being noticed by our customers. Our team has worked hard to improve customer service and communications, and, as a result of a systemwide reliability improvement plan, our customers are seeing fewer outages and faster restoration times.

What does it mean to you to be a public power leader? How do you encourage your team to engage with and cultivate leadership in public power organizations like APPA, FMEA and in other industry-related organizations?

In addition to being integrated with the community we serve as a utility, it is also important to be part of efforts across the state and nation to assure public power's interests are preserved. Through FMEA and other industry organizations that support public power, I have observed great camaraderie and a togetherness that seems unique. With our employees' involvement in various conferences, workshops and committees, they build relationships and bring back information that benefits our business. FMEA events such as Energy Connections, Hurricane Forum, Lineman Competition and cybersecurity workshops are great examples of opportunities to involve employees in the Florida public power community.

What are some of the greatest opportunities you see as you lead Florida public power as FMEA president? What do you look forward to most during your time as president of FMEA?

I see our greatest opportunities occurring on two levels. The first is providing reliable and low-cost power that meets the evolving needs of our customers and technology as it is related to our industry. These changes are occurring at the fastest pace I've seen during my career, and we need to embrace them. Next, it is very important that we continue to work together to influence policy and legislation at the state and national level. FMEA's success in the policy space translates into success for all our members, as well as being more efficient and likely more effective than each of us pursuing these efforts separately. ■



What's Happening *Inside the Beltway?*

FERC Final Rule Reforms Generator Interconnection Procedures and Agreements

On July 27, the Federal Energy Regulatory Commission approved a final rule that reforms the Commission's standard generator interconnection procedures and agreements. The final rule adopts reforms to implement a first-ready, first-served cluster study process, speed up interconnection queue processing and incorporate technological advancements into the interconnection process.

Senate Committee Passes Bill that Includes \$1.2 Billion to Boost Grid Supply Chain

On July 20, the Senate Appropriations Committee approved the Fiscal Year 2024 Energy and Water Development appropriations bill, which includes \$1.2 billion to be spent through 2026 to "enhance the domestic supply chain for the manufacture of electric grid

components." The report accompanying the appropriations bill expresses concerns over a notice of proposed rulemaking by the Department of Energy to increase energy conservation for distribution transformers.

APPA Voices Concerns About EPA Proposed Rule Tied to Plant Emissions

The American Public Power Association has concerns about the legal basis and technical underpinnings of an Environmental Protection Agency proposed rule that would amend the National Emissions Standards for Hazardous Air Pollutants for Coal- and Oil-Fired Electric Utility Steam Generating Units Residual Risk and Technology Review. In particular, APPA said in comments that it is concerned about the agency's analysis of the filterable particulate matter and mercury baselines, on which the proposed limits are

founded, the removal of compliance measure flexibilities and the assumptions in EPA's regulatory impact analysis.

DOE Offers \$8.5 Billion to States, Territories for Home Energy Rebates

On July 27, the Department of Energy announced that it is accepting applications for state and territory implementation of the two home energy rebate programs created by the Inflation Reduction Act. These programs will provide \$8.5 billion to states and territories to lower energy costs and increase efficiency in homes. The published Administrative and Legal Requirements Document (ALRD) offers federal guidance and instructions for states and territories to apply for their allocation of the Home Energy Rebates programs. ■

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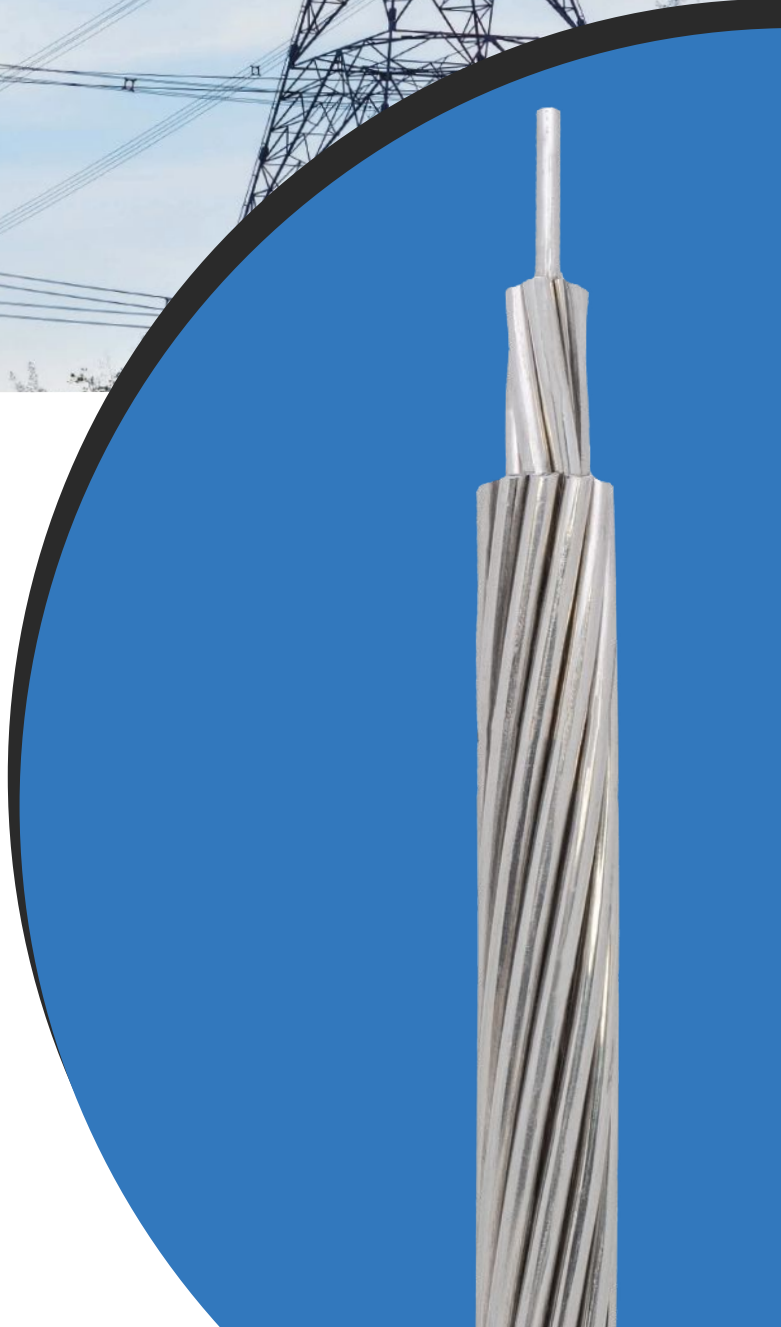
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Odds and Ends

From Across the State

FMEA Hosts Statewide Tabletop Exercise, Hurricane & Storm Preparedness Forum

In May, FMEA hosted the 2023 Hurricane & Storm Preparedness Forum in Orlando. This year, for the first time ever, the forum was held in conjunction with a Florida Public Power Statewide Mutual Aid and Storm Response Tabletop Exercise, which is a part of a cooperative agreement between the U.S. Department of Energy and the American Public Power Association. Colleagues from Florida public power utilities, the Florida Division of Emergency Management, Florida Public Service Commission, State Emergency Operations Center, along with mutual aid partners from Alabama and Tennessee, attended and worked through a simulated Category 4 hurricane disaster. This successful and well-attended exercise was followed by a day of informative presentations to help Florida public power utilities further plan and prepare for the 2023 hurricane season.



Public Power Mutual Aid Response to Severe Early-Summer Storms

Several municipal electric utilities experienced severe early-summer storms this season. Both the City of Chattahoochee and the City of Tallahassee reached out to FMEA to help



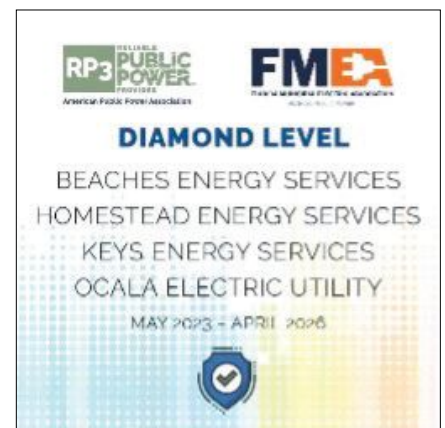
coordinate mutual aid efforts from other public power colleagues to return power safely and efficiently to their communities. Thank you to the lineworkers from the City of Blountstown,

the Town of Havana, Beaches Energy Services, JEA and Riviera Utilities for answering the call to assist another community in need!

Florida Public Power Utilities Earn National Designation for Reliability

Four Florida municipal electric utilities have earned a Reliable Public Power Provider (RP3)[®] designation from the American Public Power Association

for providing reliable and safe electric service: Beaches Energy Services, Homestead Energy Services, Keys Energy Services and Ocala Electric Utility.



The RP3 designation, which lasts for three years, recognizes public power utilities that demonstrate proficiency in four key disciplines: reliability, safety, workforce development, and system hardening and strengthening. Criteria include sound business practices and a utility-wide commitment to safe and reliable delivery of electricity.



City Honors OUC for a Century of Reliability

The Orlando Utilities Commission (OUC) was honored for a century of reliable service to central Florida with a proclamation from Orlando Mayor Buddy Dyer declaring June 26, 2023, as “OUC 100th Anniversary Day.”

In 1923, the Florida Legislature established the Orlando Utilities Commission after Judge John M. Cheney, owner of Orlando Water and Light Company, Orlando’s first power and water plants, proposed that a municipal utility own and operate the facilities, and that bonds be issued to allow the citizens of Orlando to purchase the utility and turn them over to the newly formed OUC to provide electricity and water service.

From serving 2,795 customers in 1923 to more than a quarter of a million customers today, OUC has played an integral role in supporting the growth of central Florida by investing in cutting-edge energy generation and water delivery innovations, all while meeting the community’s demand for quality and accessibility. Here’s to 100 more years of reliability!

GRU Upgrades Substation Transformer

Gainesville Regional Utilities (GRU) and contractors from Rountree Transport & Rigging moved a 114,000-pound transformer into place in May at GRU’s Sugarfoot Substation. The transformer, which replaces a 50-year-old model, is part of a seven-year project to upgrade GRU substations with higher-capacity, more efficient units that can accommodate system growth and improve reliability.



This unit arrived via tractor trailer from North Carolina and was in place on the same day thanks to an innovative technique that uses hydraulics, steel rails and the secret ingredient,

Palmolive dish soap — but only the orange variety. This is the fifth transformer GRU has replaced during the life of this project.

FPUA Earns Distinguished Budget Presentation Award for FY 2023

The Government Finance Officers Association (GFOA) awarded Fort Pierce Utilities Authority (FPUA) with the GFOA’s Distinguished Budget Presentation Award for Fiscal Year 2023.

The award represents a significant achievement by FPUA. It reflects the commitment of the governing body and staff to meeting the highest principles of governmental budgeting. To receive the budget award, FPUA had to satisfy nationally recognized guidelines for effective budget presentation. GFOA has awarded FPUA with the Distinguished Budget Presentation Award each year since 1996.



FPUA Launches Collaborative Seagrass Effort to Protect the Indian River Lagoon

Fort Pierce Utilities Authority (FPUA), through the Manatee Observation and Education Center, and in partnership with the Treasure Coast Manatee Foundation (TCMF), launched a grant-funded seagrass research initiative on July 7.



Together with seagrass restoration experts Sea & Shoreline, the groups are restoring one-and-a-half acres of seagrass in the Indian River Lagoon (IRL), with future plans for more.

This represents one of many environmental projects led by FPUA, including relocating the sewer treatment plant off the IRL, lining sewer pipes with PVC to protect against inflow and outflow from cracks in aging clay pipes, installing several more acres of seagrass grant funding from the Florida Department of Environmental Protection Resilient Florida program and more.

Florida Municipal Utilities Expand Large-Scale Solar Project

Florida Municipal Power Agency, with 20 Florida municipal electric utilities and Origis Energy, recently announced a major expansion of the Florida Municipal Solar Project. Upon

completion, the expansion will quadruple the amount of solar power currently generated by the project.

There will be two phases in the expansion. Phase 2 will include the addition of two more solar farms, with the first anticipated to be completed by the end of 2023 and the second in 2024. When both new sites are online, they will generate nearly 150 megawatts of solar energy.

Phase 3 will bring another four solar farms online, doubling the size of the project from four to eight sites that will generate nearly 600 megawatts of solar power. By the end of 2026, the Florida Municipal Solar Project will consist of more than 1.8 million solar panels installed on eight farms.



Lakeland Electric Inks Partnership with Automated Energy to Offer Consumption Data Tools

Lakeland Electric and Automated Energy announced an agreement that will allow the utility to provide customers with tools to better manage energy usage. Automated Energy provides its Load Profiler service to a targeted group of Lakeland Electric commercial customers in this first phase of a pilot program, including education, health care, grocery and distribution/logistics segments.

During this pilot, Lakeland Electric will provide each of its selected commercial customers using Load Profiler with a quarterly usage recap that provides hourly incremental data for the previous three months, along with a simple analysis of the data. Historically, this information is provided every billing cycle (30 days). The dashboard will allow the customer to dial into its consumption hour by hour, providing a better understanding of its energy use. ■



Who's Who in the Florida Public Power Community



Florida Municipal Electric Association Elects New Slate of Officers

Congratulations to FMEA's new slate of officers, elected in July to preside over the organization's Board of Directors. Serving as the executive leadership team of the Board are President Joe Bunch, general manager and CEO of New Smyrna Beach Utilities; President-Elect Clint Bullock, general manager and CEO of OUC (Orlando Utilities Commission); Vice President Ed Liberty, director of the City of Lake Worth Beach Electric Utility; and Secretary-Treasurer Steve Langley, electric utility director for the City of Mount Dora. Congratulations to the new officers!



Corwin Named President and CEO of the American Public Power Association (APPA)

APPA's Board of

Directors named Scott Corwin as the association's next president and CEO. Corwin most recently served as executive director of the Northwest Public Power Association in Vancouver, Washington, where he served more than 500 utility and associate members in 10 Western states and British Columbia. He previously served as the executive director of the Public Power Council, advocating for public power's access to federal power from the Bonneville Power Administration. Corwin

has extensive experience developing and advocating for federal policy positions before Congress, executive branch agencies, industry partners and the media.

Corwin has long been active with APPA, with stints chairing its Power Marketing Administration Task Force and serving on the board for PowerPAC, the association's political action committee. He also served on APPA's Advisory and Nominating committees. Corwin started at APPA on August 16.

Florida Public Power Leaders Jones and Clemmons Receive National Awards



Two Florida public power leaders were recognized in June by APPA for their contributions to the public power industry and their service to their communities.

Cindy Clemmons, manager of legislative and regulatory relations for Lakeland Electric, received the Harold Kramer-John Preston Personal Service Award, which recognizes member utility employees who have made significant contributions toward APPA's

goals and enhanced its prestige. She joined Lakeland Electric in 2015 and has been an active member of APPA for eight years.

Jamie Jones, assistant city manager for utilities and public works for the City of Newberry, received the Larry Hobart Seven Hats Award, which recognizes managers of utilities with fewer than 2,500 electric meters, who lead the way in seven areas: planning and design, administration, public relations, field supervision, accounting, human resources and community involvement. He has served as the assistant city manager for utilities and public works for the City of Newberry since 2015.

Mike New, ENERCON Receive FMEA Member of the Year, Associate Member of the Year Awards

During FMEA's annual conference this July, the 2023 FMEA Member of the Year award was presented to Mike New, city manager for the City of Newberry. The Member of the Year award is given to an individual or group within a FMEA member utility who exemplifies extraordinary service and dedication to FMEA and Florida public power.

The 2023 Associate Member of the Year was awarded to ENERCON, a multidisciplinary engineering and environmental firm that partners with clients to support the safe and efficient production, delivery and use of energy. The FMEA Associate Member of the Year award recognizes an associate member or associate member company who exemplifies extraordinary service and dedication to FMEA and Florida's public power community.



Florida Public Power Officials Recognized with FLC Home Rule Hero Awards

In May, the Florida League of Cities (FLC) honored officials from Florida public powercities with Home Rule Hero Awards. Recipients are local government officials who consistently responded to the FLC’s request to reach out to members of the legislature and help give a local perspective on an issue.

Congratulations to the following Florida public power Home Rule Heroes: Councilmember Doug Bryant, Mount Dora; Reese Goad, city manager, Tallahassee; Councilwoman Sandy Golding, Jacksonville Beach; Mike Herr, city manager, Bartow; Mayor Christine Hoffman, Jacksonville Beach; Mayor Linda Hudson, Fort Pierce; Councilman Dan Janson, Jacksonville Beach; Commissioner Curtis Johnson Jr., Fort Pierce; Commissioner Leo E. Longworth, Bartow; Commissioner Sarah Malega, Lake Worth Beach; Councilman Fernando Meza, Jacksonville Beach; Commissioner Janice D. Mortimer, Starke; Commissioner Danny Nugent, Starke; Commissioner Tony Ortiz, Orlando; Commissioner Trish Pfeiffer, Bartow; Mayor Betty Resch, Lake Worth Beach; Councilmember Cal Rolfson, Mount Dora; Mike Staffopoulos, city manager,

Jacksonville Beach; and Commissioner Robert F. Stuart, Orlando.



Olivia Minshew Unanimously Selected as Wauchula’s City Manager

Congratulations Olivia Minshew for being unanimously selected as Wauchula’s new city manager during the May 8 City Commission meeting. Minshew has served the City of Wauchula for more than 18 years, previously as the deputy city manager and then most recently as the interim city manager. Congratulations!



Ocala Electric Utility Welcomes New CFO

Ocala Electric Utility (OEU) welcomed Janice Mitchell as chief financial officer in March. In this role, she is responsible for the operations of budget, finance and customer service, OEU and Ocala Fiber Network. Mitchell comes to the City of Ocala with more than 30 years of experience in finance, working in both the public and private sectors, including CFO positions for multiple departments for the City of Indianapolis.

KUA Welcomes Returning Board Member



Reginald Hardee took the oath of office in June as a returning member of the Kissimmee Utility Authority (KUA) Board of Directors. This marks Hardee’s third appointment to the KUA Board; his first appointment was in October 2007. On May 16, 2023, Hardee was appointed by the Kissimmee City Commission to fill a partial term of approximately five months to be followed by a full five-year term on the KUA

Board of Directors. In 2013, KUA’s Board of Directors made history with its election of Hardee as chairman, making him the first African American to serve in that position in the utility’s history. Hardee is also a full-time employee of the State of Florida.



Tallahassee’s Goad Begins Term on FCCMA Board

Tallahassee City Manager Reese Goad was elected by his peers to the Florida City and County Management Association (FCCMA) Board of Directors earlier this year. He will initially serve for the 2023-2024 term and is one of three at-large directors on the 15-member Board. FCCMA is a professional organization of practicing public administrators from Florida’s cities and counties.

Goad has worked for the City of Tallahassee for more than 20 years and was appointed city manager in September 2018. As city manager, Goad leads a workforce of nearly 4,000 employees, reporting directly to the City Commission, and is responsible for maintaining the management functions of city government and administering the day-to-day operations.



FMEA’s Zubaly Elected to National Board

Amy Zubaly, FMEA executive director, was installed in June as a new member of the American Public Power Association Board of Directors. APPA Board members are chosen to represent 10 regions across the country, and Zubaly has been chosen to represent Region 5, which includes Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia and West Virginia. Zubaly will serve a three-year term. Zubaly has been an active member of APPA for 23 years. In addition, Keys Energy Services’ General Manager and CEO Lynne Tejeda has been reappointed to the APPA Board for a second term, also representing Region 5. ■

PREPARING EMPLOYEES TO RESPOND TO A **BLACK SWAN TRAUMATIC INJURY EVENT**

by John Egan



Some jobs at an electric utility are among the most dangerous in the world, right alongside firefighters, loggers, deep-sea fishermen, iron workers, roofers and construction workers. FMEA members work hard to ensure their employees operate in a culture of safety, but do your employees know how to respond to a rare traumatic injury when lives and limbs are at risk?

Juan LLera, chair of FMEA's Safety Committee, knows workplace trauma and catastrophic injury. — not personally, but firsthand, as a soldier and member of law enforcement. Deployed overseas, he saw what an improvised explosive device (IED) could do to military vehicles and those inside it: broken bones, lost limbs, shrapnel wounds and sometimes death. So, when he says some utility jobs are the most dangerous in the world, people should listen.

Utility Workers Exposed to High Risks

Asked to name the most dangerous utility jobs — where the risk of injury or death is greatest — LLera, who also is the safety



and risk management coordinator at Keys Energy Services (KEYS), doesn't hesitate:

- Lineworker
- Substation electrician
- Fleet maintenance technician
- Meter field worker
- Warehouse operator

Lineworkers face high risks, LLera said, particularly when restoring power during inclement weather. Substation electricians

can be exposed to high-voltage arc flashes (see sidebar on page 17). Those who work on utility bucket trucks have suffered twisted knees and crushed hands. Meter field workers can be exposed to arc flashes when changing meters. Warehouse employees have been hit by forklifts or overhead cranes.

"These utility jobs are among the most dangerous jobs in any profession," said LLera, who before joining KEYS in 2018 was involved in shootouts with drug dealers while a member of law enforcement. Before that, he was a Naval combat diver disposing of underwater explosives to support special forces teams from various branches of the military.

He's a firm believer that working safely, in whatever setting, is a function of three things: equipment, process and training.

Utility workers use personal protective equipment (PPE) to reduce risks. Arc-flash detection equipment can minimize the dangers of working around high voltage



Arc-Flash Equipment Protects Workers, Nearby People

Think the surface of the sun is hot? Try an arc flash, which can generate temperatures estimated at about 3.5 times the surface temperature of the sun.

An arc flash occurs when there is a sudden release of electrical energy through the air that's caused by a fault in an electrical circuit. This leads to a rapid rise in temperature and pressure between electrical conductors, usually causing an explosion known as an arc blast.

A typical arc-flash incident can be inconsequential, according to safety experts, but those that produce severe arc blasts can be extremely dangerous and damaging to surrounding life and property. Such explosions typically occur without any warning, leading to electrical equipment being destroyed entirely, along with severe injury (or even death) to anyone within several feet of the blast.

"An arc flash can be incredibly dangerous to anyone working on or around switchgear," commented Brittany Chapman of Commonwealth Engineering. "Installing arc-flash protection is a huge safety benefit to personnel, equipment and customers too."

An arc flash is also harmful, and potentially devastating, to electrical equipment. The arc-flash protection equipment Commonwealth installed at the Gainesville Regional Utilities' Serenola Substation can detect an arc flash in as little as two-thousandths of a second, about five times faster than the equipment that was in place. That faster warning shuts down equipment that could be damaged by an arc flash. This new equipment's faster detection time makes all the difference in saving lives and reducing equipment damage and repair costs from an arc-flash event.

electricity. The industry has rigorous training for its most hazardous professions: It takes four years of classroom training and field work to advance from an apprentice lineworker to a journeyman.

Utilities Prioritize Safety, but Traumatic Injuries Do Occur

FMEA members have made workers safer through the decades of intentional application of equipment, processes and training. Although Florida's public power utilities have a very high safety performance, LLera said, traumatic injuries, though relatively rare, do occur.

Fortunately, FMEA Associate Member Altra Medical is providing specialized training for utility workers on how to stabilize a traumatically injured co-worker until EMTs or first responders arrive.

That training could be the difference between saving a limb and losing it, said Leslie Roberts, president of Altra Medical, which provided specialized trauma training to JEA earlier this year.



“Power restoration efforts are particularly dangerous, especially after a hurricane when there are broken trees that must be cleared,” added one of Altra’s contract trainers, Kyle Lichteiser, who is a fire captain in the St. Petersburg area and was a SWAT paramedic for more than a decade.

“People use chainsaws to cut through downed trees after a hurricane, but those chainsaws can kick back from a tree and tear into a person’s leg or arm,” Lichteiser said. “At that moment, you have between three and five minutes before the victim loses that limb. And, on the best days, EMTs are at least eight minutes away. The actions a colleague takes, or doesn’t take, in that situation could be the difference between losing a limb or a life and saving it.”

The utility industry has a high safety awareness, but even so, 44 utility workers across the country died from on-the-job injuries in 2018, according to Lichteiser. That same year, an additional 1,684 utility workers suffered non-fatal, on-the-job, traumatic injuries. That’s more deaths and traumatic injuries than firefighters experienced that year.

“Workers at utilities have a higher risk of injury or death than firefighters who run

into burning buildings,” Lichteiser said. “The specialized training we provide is oriented to utility situations. Our goal is to ensure that everyone goes home in the same condition in which they arrived for work.”

Managing the Consequences of Traumatic Workplace Injuries

Because the utility industry has internalized safety protocols, traumatic injuries have declined over the years, said Roberts. Although she’d like to see traumatic injuries fall to zero, she knows that’s not realistic. Through the traumatic training her firm offers to electric utilities, she’s hoping to manage the consequences of those injuries.

Acting on the adage that an ounce of prevention is worth more than a pound of cure, Roberts said one of the first things they do when visiting a utility site is to ask to see a first aid kit. Typically, all they see in that kit are bandages.

“All too often, the first aid kit does not contain tourniquets, SAM splints, QuikClot (a blood clotting dressing), burn kits or emergency trauma dressings,” Roberts said.

“We’re not trying to certify anyone as a first responder. But we want to make sure

utility employees have the necessary tools and skills to respond if a traumatic injury occurs.”

Roberts estimated that Altra Medical has saved more than 200 lives across its client base through the distribution of automated external defibrillators (AEDs).

“No one wakes up and thinks, ‘Today I’m going to witness a traumatic injury at my job — or experience one,’” she continued. “Just like no one thinks they will need an AED that day.”

Altra Medical, an FMEA associate member for 13 years, has been in business for 23 years. During that time, Roberts, the company’s president, estimated they have worked with about 60 percent of FMEA member utilities. It began offering traumatic training for utilities in 2022 to focus on the industry’s unique risk profile. Oglethorpe Power in Georgia, and JEA, were the first to contract for the new trauma training.

She said, “JEA’s motto is, ‘We put the physical and emotional well-being of people first, both at and away from work.’ By providing about 30 employees with a two-day workshop on traumatic injury training, JEA was walking the talk.”



Although the trauma training is focused on the utility workplace, Roberts points out that employees can use it when they're away from their jobs. "Utility employees ride motorcycles. They hunt and fish. They use chainsaws to trim trees."

As he stood before JEA employees earlier this year, Lightheiser asked how many have had personal experience with a traumatic injury, either on the job or off. The answer was what he expected: More than one-third of those in the room raised their hands.

JEA Senior Manager Generation Support Christalyn Pruitt said JEA is committed to providing utility services in a manner that will ensure the safety of employees, contractors and customers. JEA recognizes that this industry has the potential to cause life-altering incidents, despite all of



the safety precautions and procedures in place, and that the first moments after an incident can be critical in mitigating life-changing damages.

"Because of this, we decided to offer our employees training beyond standard first aid," she continued.

"Our employees have benefited from trauma training by learning advanced techniques and are better equipped

to handle catastrophic illnesses and injuries. The hands-on training and emergency simulations were great for giving employees confidence and understanding how their reactions can make a difference in the overall care of a victim. This provided our generation department an added benefit of having highly competent personnel on site who can fill the critical gap between when an incident occurs and when medical personnel arrives." ■



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FMEA MEMBERS LEVERAGE TECHNOLOGY TO **IMPROVE COMMUNICATIONS** *AND THE* **CUSTOMER EXPERIENCE**

by John Egan



Communications or customer service enhancements made by world-class service providers outside of the utility industry eventually shape consumers' expectations of all other providers, including utilities. As consumer expectations continue to evolve, FMEA members are deploying new technologies to better serve customers, while also lowering costs, breaking down internal costs and improving the customer experience.



TextPower and KUA: Information Is Power When Power Is Out

The old saying, “Information is power,” is never truer than when the lights go out. That’s the moment when all affected customers want to know two things from their utility: Do you know my power is out, and when will it come back?

Even if a utility activates additional customer service representatives (CSRs) in advance of an emergency, like a hurricane, large-scale power outages inevitably mean some customers will get a busy signal or an automated busy message when trying to reach their utility because the utility’s phone systems will be overloaded.

Previously, the Kissimmee Utility Authority (KUA) had made incremental investments expanding the capacity of its interactive voice recording (IVR) system, telephone lines and channels, but even with those expansions, it found it still could not meet the needle peak demand for customer information during a major storm.

Jef Gray, chief information officer for KUA, which provides electricity to about 90,000 customers in central Florida, said the utility “was seeking a better way to manage customer communications during hurricanes and storm events, when there is a spike in call volume to the contact center.”

After reviewing the services of several companies, he eventually settled on TextPower Incorporated, a California-based firm that provides two-way texting services to more than 200 utilities around the country.

TextPower delivers its utility clients two-way (outbound and inbound) texting services that provide “an immediate and high-impact communications platform for utilities to share critical or emergency information with customers,” Mark Nielsen, co-founder and executive chair of TextPower, said in an interview.

“Utilities have a five- to 10-minute window to proactively communicate with their customers before a hurricane or large outage,” he said. “After that, utilities lose the narrative and they’re playing catch up.”

Nielsen shared a speaking platform with KUA’s Gray at FMEA’s Hurricane and Storm Preparedness Forum this past May. FMEA asked KUA and TextPower to share with FMEA members about how the newly instituted text service significantly cut down on inbound customer calls following large-scale outages during the 2022 hurricane season.

The TextPower executive said his company’s research showed that text messaging provides utilities with the broadest, deepest, fastest and most economical way to reach customers compared to other communication means such as email, social media or telephone.

It costs utilities between \$3 and \$6 to answer each call, according to industry estimates. By contrast, texting costs a utility pennies per message, said Nielsen: “It’s a no-brainer economically.”

Also, the speed with which a utility can broadcast a message to its customers sets text apart from traditional phone-based notifications, Nielsen said. He estimated that it would take four IVR lines about two hours to send pre-recorded outbound messages to 500 customers. With text messaging, that can be accomplished in less than one minute.

Since they were introduced in 2001, smart phones have become ubiquitous, which has made text messaging the preferred communications venue for all generations.

TextPower’s research showed that 98 percent of text messages were opened, and 95 percent were read, within three minutes. By comparison, email and social media posts were opened or read far less often. That made texting the obvious platform for customer communications during emergencies.

KUA installed the TextPower platform in 2019, and its value was proven last year when the utility began using its expanded functionality during Hurricane Ian: Despite 24,000 customers losing power, only 1,000 called the utility, a dramatic decline from prior hurricanes.

KUA’s customers used the text system to self-report outages, and they felt more in control knowing that their utility knew they were out of power.

In addition to text alerts to customers during power outages, KUA is using the

TextPower platform to provide day-ahead reminders for customers who negotiated alternate payment plans. The utility reported that broken payment plans declined from 50 percent to just 13 percent once it began sending friendly text reminders. Also, about a year ago KUA began using the TextPower platform to warn customers about utility scams.

The platform can precisely segment customers by substation, feeder, ZIP code and transformer, should targeted notifications be needed.

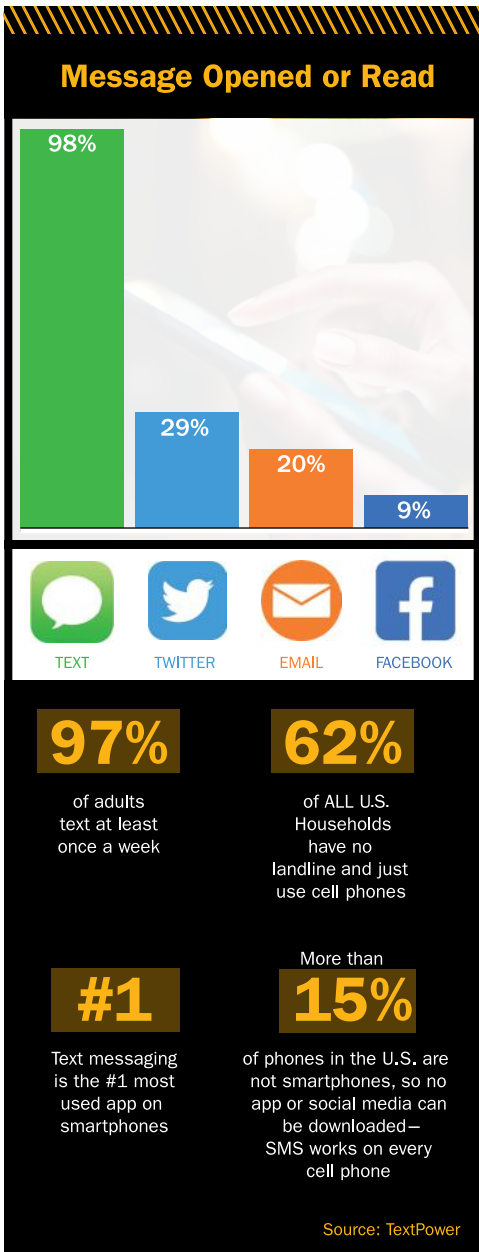
Finally, an additional feature of that platform is that it can communicate with customers in a variety of non-English languages, including Spanish, Chinese, Vietnamese, Japanese and Ukrainian. This is an added bonus in melting pot states like Florida.

Lakeland Electric Utilizes New Functionality in ARCOS Callout Platform

For nearly two decades, Lakeland Electric (LE) had been using ARCOS’ Callout platform to contact lineworkers after their normal work hours for power restoration duty. The ARCOS platform automated the traditional, labor-intensive callout process, which involved a power dispatcher manually working through a phone tree of lineworkers and contacting them by phone or text in a very specific order as defined by the union contract.

In addition to freeing a power dispatcher to focus on power restoration, automating the lineworker callout process resulted in faster crew arrivals to the site, lowered costs and shorter outages.

But the ARCOS system has functionality that extended far beyond lineworkers and power dispatchers. In fact, for no additional cost, it could be used to communicate with all employees in a dynamic, two-way format using any communications platform, including phone, email and text. So, in a system-wide event like a hurricane, all employees could be notified to report for their storm roles, and employees could confirm receipt of those messages.



That added functionality relieved employees of the need to check in with LE's phone system to learn when a storm event had been called or to obtain status updates on outage restoration.

"Eliminating the voicemail-based hotline and switching to ARCOS SIREN messaging for emergency notifications is a game changer," said Korey Bush, an assistant general manager for customer service at LE, which serves about 140,000 customers. "We were being reactive with our alerts, forcing employees to remember to call into the phone system, sometimes several times per day. Now we are able to push emergency messages to employees faster and more effectively whether they are in the field or in the office."

"During an emergency, you need all employees to have up-to-date information about what's happening, what their responsibilities are, and make it easy for them to confirm the message. We have that now."

The new functionality, called SIREN, "enables an improved emergency response that increases safety, efficiency and reliability," Bush said. "Whenever we can deliver improved reliability and better emergency response, we are providing better value to our customer-owners. SIREN provides us with the capability to be proactive and fill in many of the gaps we experienced with previous processes."

John Chapman, ARCOS' account manager for Lakeland Electric, commented, "Hurricane Ian created inconceivable damages across the state. By activating the additional functionality of the SIREN system, at no extra cost, Lakeland Electric made sure that the right people got the right information at the right time, all of which reduced costs, improved response time, optimized resources and shortened outages."

Tallahassee's Customer Self-Service Numbers Soar with New CIS from Itineris

Those who know James Barnes, chief customer officer at the City of Tallahassee (COT) Utilities, know he has a passion



for customer service and the customer experience (CX). Those separate but interconnected passions helped that multiservice utility, which provides electricity to more than 128,000 customers, win two E.F. Scattergood System Achievement awards from the American Public Power Association in 2012 and 2021 for being the top public power utility in the nation.

He brought that passion to a recent two-year project to replace the city's customer information system (CIS), which was approaching the end of its useful life.

Barnes has a particular aversion to organizational silos, mainly because they impede an organization's ability to provide world-class service to its customers. A well-designed, well-implemented CIS could become a critical engine that accelerates an organization's transformation.

In selecting a new CIS, Barnes saw the process as an opportunity to turn a great utility into a truly extraordinary one. COT cast its net far and wide to find a system that would match his customer-centricity. He found it with the Itineris UMAX solution.

"I was looking for a technology partner that could help us meet a customer's needs and expectations in ways defined by the customer, and then exceed them," Barnes said. "We needed a CIS with a 'wow' factor."

Kimberly Williams, Itineris' senior vice president for business strategy, commented, "The COT is a proactive, customer-first organization, and we were delighted to provide solutions to complement their level of operational excellence."

Even for a well-regarded utility like COT, there were performance gaps that needed to be closed. One had to do with customer self-service. Prior to installing the Itineris UMAX CIS, only a smaller portion of customers were utilizing the utility's self-service option. After the CIS replacement was complete, that number jumped to approximately 50 percent of its customer base.

Part of the reason for that was the UMAX customer self-service solution's ease of use and ability to offer bidirectional communication with customers when they want and how they want to communicate. Customers are empowered to manage their account, aligned with COT's goal of customer-centricity.

The Itineris solution is part of the Microsoft ecosystem, so it seamlessly connects with other Microsoft applications being used by a utility, such as Microsoft Office, Power BI reporting and analytics, and world-class cybersecurity solutions. Being part of the Microsoft ecosystem elevated the value of the Itineris UMAX platform.

By empowering customers to customize their service, COT improved the customer experience while lowering costs, in the process supporting the utility's journey to true customer intimacy.

Associate Members Value Being Part of FMEA

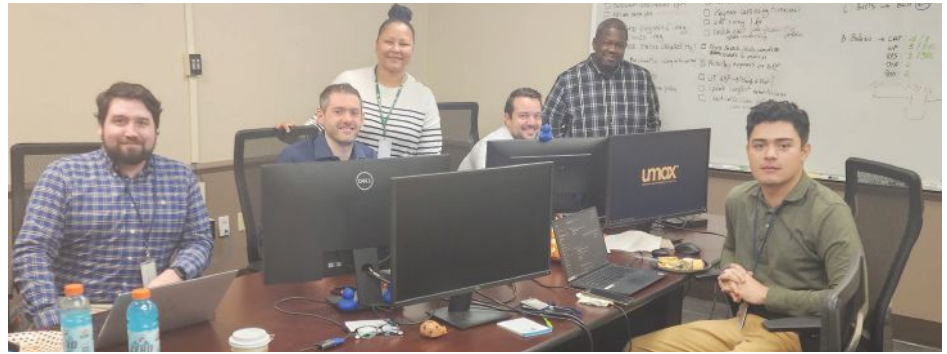
TextPower is a relatively new associate member of FMEA, having joined in 2022. Itineris became an associate member in 2020 while ARCOS has been in the fold for about five years.

Executives from all three companies gave high praise to FMEA for its practice of bringing together utility members and

associate members who provide solutions and services.

Being an associate member “gives us better connections with, and insight into, the specific needs of its Florida public power members,” said TextPower’s Mark Nielsen, who has more than 200 utility clients across the country. The firm’s project with KUA was its first one with an FMEA member, though St. Cloud and New Smyrna Beach have recently become clients.

Echoing Nielsen, Williams of Itineris added, “Florida utilities have different needs than New York utilities. By connecting with members at FMEA conferences, we get better insight into the specific technology needs of members and how they are approaching emerging issues.”



Itineris’ CIS replacement project with Tallahassee was its first work for FMEA members, but other projects are underway or being negotiated. The company works only with utilities; outside of Florida, it also has utility clients in Georgia, North Carolina, New York, Massachusetts, Michigan and Texas. “FMEA is a leader in identifying how to use technology strategically to solve its members’ challenges,” commented

John Chapman of ARCOS, which is headquartered in Columbus, Ohio. The organization’s conferences are a great way to network with current clients while learning more about the needs of prospective clients, he added.

Lakeland was the first FMEA member to implement the added functionality of its SIREN system, though Ocala has recently become a client too. ■



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FMEA ASSOCIATE MEMBERS HELP MEMBER UTILITIES

IMPLEMENT SYSTEM UPGRADES

TO IMPROVE RELIABILITY

by John Egan



Given Florida's extreme weather, it may not be possible for utilities to completely "future-proof" their transmission and distribution (T&D) systems. But FMEA members are working with associate members to ensure those systems are as reliable, resilient and safe as they can be, to better withstand whatever weather the future may bring.

Homestead Hardens Distribution System with Pole Replacement

Homestead's south-of-Miami location makes it vulnerable to hurricanes. The memory of Hurricane Andrew in 1992, which flattened Homestead, is never far from the minds of Homestead utility officials. Not all hurricanes are as devastating as Andrew, thankfully, but over the years, storms have inflicted heavy damage to the utility's overhead electric distribution system, leading to occasionally widespread electric outages.

Earlier this year, Irby Construction began a multi-year project to replace 1,560 wooden feeder and lateral poles with cement poles tested to withstand major hurricane impacts. The expansive

work project will occur in phases throughout the service territory.

By investing capital dollars to replace wooden feeder and lateral poles with concrete ones, Homestead, which serves approximately 80,000 residents, will reduce storm-related outages and shorten outage restoration times — both of which lower operating costs — while also improving electric reliability.

"When a utility spends money at the front end to protect its electric system, it shortens outage times after a storm, electric reliability will increase and overall costs will go down when restoring power due to storm-related outages," said Barbara Quiñones, Homestead's electric utility director.

"At Irby Construction, we are all about creating relationships and being a part of the community in which we live and work," John Thompson, a business development manager at Irby Construction, said in an interview. "We have no minimum project size: If a municipal utility needs us to set a single pole, we do it."

Thompson added: "FMEA events are great places to meet and share successes with municipal members and other associate members. It's a close-knit community where we all lean on each other. The Homestead project is our first one for an FMEA member, and we look forward to a long and successful relationship in helping them meet their goals."

"Irby has been a terrific partner with us; they're easy to work with and provide a quality service. This collaboration will allow us to finish this important storm hardening project more quickly," added Homestead Energy's Assistant Director William Branch.

New Bridge Means New Level for Reliability for Fort Meade

Every time Julio Hernandez, PE, walked on the shoulder of the Highway 98 bridge over the Peace River in Fort Meade, his hair was brushed back by the rushing wind whenever a semi-trailer truck drove over the two-lane, 96-year-old bridge. Each side of the bridge had only a 12-inch-wide shoulder, placing pedestrians and bikers dangerously close to traffic. Fort Meade's electric distribution lines were adjacent to the bridge. So, construction of a new bridge required the temporary relocation of the electric distribution lines. When construction of the new bridge is finished in 18-24 months, the lines will be made permanent.

Hernandez, a project manager for LineWorks Engineering, oversaw that distribution line relocation project.

The Florida Department of Transportation this year greenlighted construction of a new, wider bridge on Highway 98, which will include about 5 feet of shoulder and multi-use paths on each side of the bridge. That bridge crosses over the Peace River, on the eastern edge of Fort Meade, a waterway popular with kayakers and canoeists. The utility serves about 2,600 customers on either side of the bridge.

Fort Meade's electric distribution lines are adjacent to the current bridge. Before the new bridge could be built, and the old bridge torn down, a new temporary distribution system needed to be designed and constructed to ensure customers on the east side of the bridge would continue to receive power while the new bridge was being built, which could take up to two years. Once the new bridge is complete, the distribution lines will be directly attached to it.

LineWorks Engineering LLC, a certified women's business enterprise (WBE), provided engineering services for the temporary and permanent electric distribution systems.

"Any time you work with the Florida DOT, there is extensive coordination required, and this project was no exception," said Hernandez, who added that this was the first project LineWorks Engineering performed for an FMEA member. The engineering of the temporary and permanent distribution systems was completed earlier this year, and construction of the new bridge is scheduled to begin in 2024.

GRU Modernizes Substation with Commonwealth Engineering

Fifty may be nifty, but not when it comes to substations and their equipment.

Gainesville Regional Utilities' (GRU) Serenola Substation came online in the 1970s. Some of its equipment was nearing the end of life and needed to be modernized. The growth of the Gainesville community over the last five decades meant the utility needed greater flexibility in its distribution system to continue serving customers reliably.

GRU is a five-service utility that provides electricity to about nearly 101,000 customers. In modernizing its Serenola Substation, it replaced two power transformers with two larger units that increased capacity by about 30 percent. This provides greater system flexibility if one transformer needs to be removed from service for maintenance.

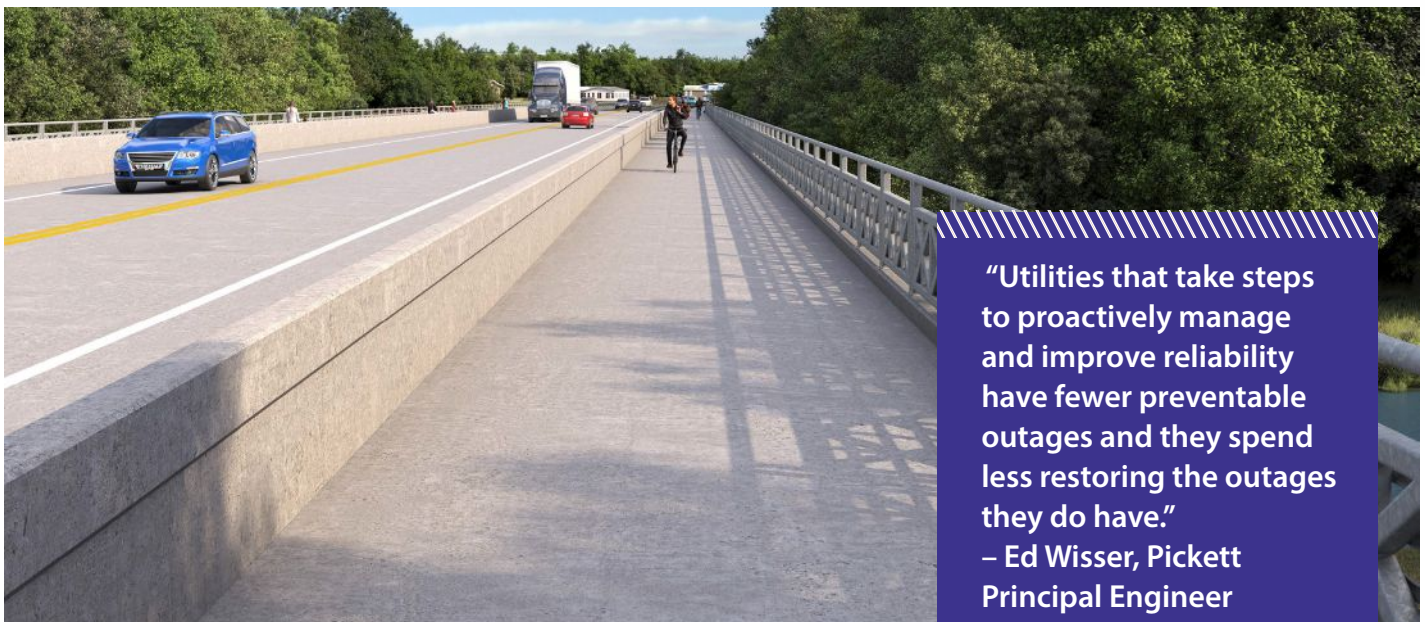
"With the completion of the modernization project, GRU will have additional operational flexibility," commented Brittany Chapman, an engineering manager, protection and control design for Commonwealth Engineering, which provided the engineering and other ser-

vices for the substation modernization. The project also included a full upgrade of the Supervisory Control and Data Acquisition (SCADA) system at the site and replacement of the 12 kV relays and the addition of circuit switcher failure relays. The two 138 kV breakers that used oil for insulation were replaced with breakers that were insulated by sulfur hexafluoride (SF6), which insulates better than oil.

The project also included the addition of fiber-based arc-flash protection equipment in the 12 kV switchgear, an important safety addition (see sidebar on page 17).

Commonwealth Engineering is performing dozens of substation modernization projects across the country, but GRU's project was its first for an FMEA member.

"The multi-phase modernization project, which started in 2020 and completed phase 2 in 2023, makes the Serenola Substation safer, more reliable and more flexible," Chapman said. "Overall, it allows GRU to provide a better level of service to its customers. Phase 3 is scheduled for spring 2024, which will



"Utilities that take steps to proactively manage and improve reliability have fewer preventable outages and they spend less restoring the outages they do have."

**– Ed Wisser, Pickett
Principal Engineer**



complete the modernization of the entire substation.”

GRU Substation Principal Engineer Tom Boyer said, “It has been great being able to proactively modernize this substation with the help of Commonwealth. With the vintage of the original equipment, it wasn’t a question of if something would fail, but when. It is comforting knowing that this substation will remain reliable for years to come.”

JEA Uses Pickett to Conduct LiDAR Survey of Its Transmission Lines

Pickett and Associates has been conducting a lot more LiDAR (Light Detection and Ranging) surveys of electric transmission systems over the last decade, following a recommendation from NERC (the North American Electric Reliability Corporation) that utilities document their transmission facilities’ thermal and current ratings.

But while some utilities use LiDAR surveys to measure right-of-way clearance between electric lines and trees, JEA hired Pickett to do a broader assessment: Were trees, distribution lines, buildings or other utilities getting too close to over 600 miles of the utility’s transmission lines?

JEA, which provides electricity to more than 500,000 customers, last conducted a LiDAR survey a decade earlier, but in fast-growing Jacksonville, the utility wanted to make sure nothing got too close to its transmission lines. When fully loaded with electricity, transmission lines sag, and any other object too close to those lines could cause a fault, potentially leading to an electric outage.

One of the biggest challenges of the project, according to Ed Wisser, a principal engineer with Pickett, was the relative shortage of air-traffic controllers at the Jacksonville International Airport. The LiDAR survey was conducted using both a helicopter and fixed-wing aircraft, both of which needed clearance from air

traffic controllers.

“There were bright sunny days, with no wind — ideal surveying conditions — but we couldn’t get clearance to take off,” he recalled. Another challenge, more within Pickett’s control, was staying away from the airspace around the nearby Naval Air Station Jacksonville, which occupies about 3,800 acres on the west side of the St. Johns River.

The LiDAR survey data, roughly 20 terabytes worth (roughly equivalent to as many as one million Bibles) would be used to create a “to do” list of reliability projects, added Russell Coby, Pickett’s engineering manager.

Over a 10-month period in 2022, Pickett surveyed and modeled more than 600 miles of 69-kV, 138-kV and 230-kV transmission lines. The project “helped JEA proactively identify potential reliability needs and fix them before they become problems,” added Pickett’s Wisser.

“Reliability is critically important in itself — people like the lights to stay on — but it also rolls right into affordability,” Wisser continued. “Utilities that take steps to proactively manage and improve reliability have fewer preventable outages and they spend less restoring the outages they do have.”

Sebastian Chmist, JEA staff engineer for electric transmission projects, said “JEA works to provide reliable, affordable and sustainable services to customers in northeast Florida. Pickett and Associates provided valuable data, helping JEA create standards for all future transmission projects by developing feature code and weather case criteria. Pickett also provided JEA with accurate models of all our overhead transmission circuits.”

“Pickett provided the data that we can now use to evaluate infringements to stay in compliance with NERC/FERC requirements, design upcoming interconnect projects, and evaluate clearances for various unrelated road and development projects.” ■



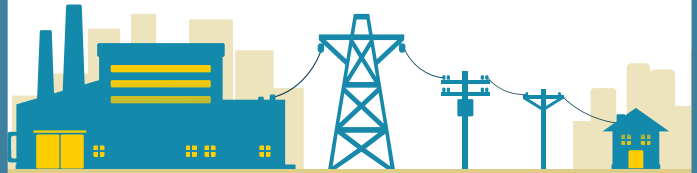
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MAINTAINING CRUCIAL CONNECTIONS

WITH UPDATED COMMUNICATIONS

by Derrick Bigham P.E.

When it comes to critical infrastructure, reliable communication is crucial to managing consistent service. In 2021, GRU, an electric utility in Gainesville, Florida, required the replacement of its entire aging legacy GE JMUX SONET system with a Belden XTran MPLS-TP system. Jeff Garteiser, PE, substation and relay manager at GRU, sought a modern, flexible communication system that will provide for its current and future data needs.

This system will be tasked with relaying line communication and supervisory control and data acquisition (SCADA) traffic across the utility's network. SCADA data helps to control industrial processes and can warn when conditions might become hazardous within a network. This could especially be useful for a utility in the event of a strong storm sweeping through a region. For example, if a tree knocks a transmission line out of service, utility operators would need that information quickly to respond and mitigate the service interruption.

SCADA coordinates with sensors and software to relay messages from communication infrastructure, such as field devices and controllers. Armed with timely knowledge, utility operators can appropriately redirect loads and quickly respond to infrastructure that needs to be updated or fixed in the event of an outage.

Burns & McDonnell was brought on to design and implement GRU's communication upgrade to help the utility continue to provide reliable electric service for its

customers in the Gainesville area. The firm has a long history with the utility, with many years spent working together on a variety of energy projects.

The new system will provide the utility greater flexibility to respond to future communication needs that come with a changing grid. As sustainable options become more prominent, such as electric vehicles and solar panels, an increased demand on the grid will require a utility able to quickly relay messages and have a reliable communication system.

Navigating an Existing Network

To understand how to update GRU's existing communications, the project team began to define what services the JMUX supports and the physical infrastructure limitations that must be designed around. Much of the challenge the project team faced involved identifying existing assets on the communication system and providing a solid foundation to design around.

Once identified, all physical infrastructure assets had to be consolidated into one system to fully utilize the advantages of the communication system. Additionally, the team took a look at the utility's budget needs to identify network architecture that would make sense with the operational and financial goals GRU had in place.

After evaluating how the utility operated and what it needed in a communication network, Burns & McDonnell then recommended the Belden XTran MPLS-TP system as the easiest modern transport system to implement. The team physically visited all 23 unique sites to gather site condition data and develop a deployment plan for the XTran to be brought online in parallel with GRU's current communication system. Services will be slowly moved over to help ease the transition to a new system and to maintain relay protection.

Closing the Knowledge Gap

Updated documentation is crucial as the project progresses from the design to the implementation stage. Thorough records that are kept up to date help engineers and technicians know all services supported by the communication system and determine the effects of any proposed change.

As the system continues to be onboarded, training is also an imperative step to creating a successful and smooth transition away from the legacy system. The project team planned several in-person and virtual meetings to help utility staff walk through the new technology and answer any questions as they arose in real time.

This system will be tasked with relaying line communication and supervisory control and data acquisition (SCADA) traffic across the utility's network.



The firm's project team is located in central Florida, providing easy access for collaboration and project integration success. As part of this project, the project team was able to complete a training and factory acceptance test to see that all assets would successfully integrate into the new communication system.

The new communication system is expected to be fully online by September of this year. The project team is confident the new solution will provide GRU with the reliable operations needed to update the communication system with greater flexibility to respond to changing needs in the future.

With many municipalities across the state of Florida, along with many major utilities

across the country soon to be in a similar situation with aging communication infrastructure, this project could just be the start for utility operators needing to examine their next steps. An integrated team can help assess current services and needs and recommend a custom solution that fits a client's unique challenges.

Derrick Bigham is an electrical department manager in the Networks, Integration and Automation Group at Burns & McDonnell. With more than a decade of experience, Derrick has extensive knowledge in automation, telecommunications and network engineering. Derrick holds a Bachelor of Science degree in electrical and electronics engineering from the University of Tennessee at Chattanooga. ■

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