

RELAY

FLORIDA'S ENERGY & ELECTRIC UTILITY MAGAZINE

Volume 56 • Issue 3 • Spring 2024

**UTILITY DISPATCHERS:
THE ELECTRIC SYSTEM'S
TRAFFIC COPS**

Page 28

**POWER PLANTS:
THE HEARTBEAT OF THE
ELECTRICITY BUSINESS**

Page 18





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Contents

ARTICLES

**18 Power Plants:
The Heartbeat of the Electricity Business**

Looking for a good job with great pay and benefits? You can typically earn more than \$100,000 per year, with overtime, as a power plant operator. The job doesn't necessarily require a college degree, but operators must be willing to work rotating 12-hour shifts and go through specialized training. The ability to adapt to changing technologies is essential, excellent hand-eye coordination is required and experience playing video games could be a plus.

**24 From Background to Center Stage:
Utility Supply Chain Managers**

Most of the world had never heard the term "supply chain management" before COVID-19. Now, it's become the occasionally snarky answer to all sorts of questions, from, "Why aren't you married?" to, "Why doesn't the grocery store stock that bacon I love?" Procurement professionals from two FMEA member utilities took us into their world, which went from "just in time" to "next year, maybe, if you're lucky."

FEATURE

28 Utility Dispatchers: The Electric System's Traffic Cops

"Traffic cop" or "train conductor" are the terms utility control room professionals use to describe their work. They help keep the lights on for customers by making quick decisions on outages, often before all the data is available. This is especially true during storm season. Good communication skills are also required because customers call the control room at all hours of the day and night, asking questions about their bill or reporting that a streetlight is out. We asked control center officials at three utilities — KEYS, Lake Worth Beach Utilities and Lakeland Electric — about their mission and how they spend their days.



Departments

7 Executive Insights
The Many Faces Behind Florida Public Power

8 Leadership Corner
Q&A with Barbara Quiñones
Director of Electric Utilities, City of Homestead

11 Washington Report

12 Currents
Odds & Ends from Across the State

16 On the Move
Who's Who in the Florida Public Power Community



Where in the world is *RELAY*?

Hoover Dam generates, on average, about 4 billion kilowatt-hours of hydroelectric power each year for use in Nevada, Arizona and California — enough to serve 1.3 million people. From 1939 to 1949, Hoover Powerplant was the world's largest hydroelectric installation; today, it is still one of the country's largest. FMEA Communications Specialist and Florida State alumni Joanna White remembered to pack a copy of *RELAY* magazine when she visited recently. Don't forget a copy on your next trip! Send pictures to relay@flpublicpower.com.

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RELAY is a publication of the Florida Municipal Electric Association.

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RELAY magazine Volume 56, Issue 3



The Many Faces Behind Florida Public Power

More than 6 million Americans work in the energy industry in careers that power our country and our lives. From entry-level skilled trade positions, technical and operational roles, engineering positions, and an array of business and professional jobs, the industry offers careers for a wide variety of people and skill sets. The opportunities are boundless — and growing. In fact, according to the Center for Energy Workforce Development, the industry expects to fill more than 215,000 positions in the next three years.

With more than 2,000 public power utilities across the country providing power to over 49 million people, public power is a powerhouse employer with a combined workforce of 96,000 people. In Florida alone, our 33 public power utilities employ about 5,700 people. That's 5,700 people working hard, around the clock, to keep the lights on and the beer cold for public power customers.

When we think about careers in the electric utility industry, the first thing that comes to mind for many people are the line workers. They are our front-line employees. We see them working daily in the community. They are our heroes after a hurricane or other extreme weather event, working to restore

our power. They typically become the faces of electric utilities.

But there are so many other professions in the industry that are just as critically important to powering our homes and businesses.

Skilled trades positions are plentiful and highly essential in electric utilities. In a skilled trades position, oftentimes hands-on experience, confidence and aptitude are more important than advanced education although required training courses, certifications and/or licenses are typically required; graduates of technical or trade schools make for highly sought-after candidates. In addition to line workers, other skilled trades positions in the electric utility industry include substation technicians, electricians, fleet mechanics, construction managers, distribution automation technicians, surveyors, tree trimmers, warehouse personnel, and generation, transmission and distribution operators.

The electric utility industry also depends on many engineers and technical operations positions. Engineers and operations professionals are needed to ensure our sophisticated energy grid is protected from natural events — such as hurricanes and other severe weather events — and

from malicious events, such as cyber and physical attacks. These positions include electrical, mechanical, civil, chemical, computer or industrial engineers, environmental and electric vehicle program managers, power plant operators, and IT and cybersecurity professionals, which often require advanced education or training or additional certifications.

Technical and specialized fields in the electric utility industry may not be for everyone, and that's a good thing because the electric utility industry has a plethora of business and professional positions that are critical to utility operations. Accountants, lawyers, customer service representatives, communications specialists, human resource officers, real estate professionals, and procurement and grants specialists are all important roles for utilities.

In this issue of *RELAY*, we examine a few "behind-the-scenes" positions: power plant operators, control center managers, and procurement and supply chain specialists. These positions and people may not be the face of public power or the utility industry, but their roles are critical in providing reliable, clean and affordable power to our communities — and keeping the lights on and the beer cold for our customers. ■



Q&A with Barbara Quiñones

Director of Electric Utilities, City of Homestead

Barbara Quiñones is the director of electric utilities for the City of Homestead, one of Florida public power's southernmost communities, serving approximately 26,000 electric customers' meters in Miami-Dade County in South Florida. Quiñones, appointed to her position as director of electric utilities for Homestead in 2009, previously worked for Florida Power & Light for 26 years in a variety of positions, including senior manager of statewide distribution planning and design, senior manager of statewide power restoration and power quality, and operations manager. Quiñones is a past president of the Florida Municipal Electric Association and FMEA's 2014-2015 Member of the Year. She is the elected chair of the Florida Municipal Power Agency's Board of Directors. She is a graduate of Leadership Miami and is on the Executive Board of Extraordinary Women Leading Change, filling the role of chairperson for the Mentoring Program for the PACE School for Girls.

Tell us a little bit about yourself and your background.

I grew up living in places all over the country, as my father was a pilot in the U.S. Air Force, even spending a couple of years in Morocco. Frequently moving to new locations helped me to develop flexibility and adaptability and to learn how to handle new situations and new relationships. I went to high school in Southern California and then moved to Atlanta for college, which was a big cultural shift and provided me with an opportunity to see differing perspectives in a very short period.

My father instilled in me the knowledge that a woman can perform any task she sets her mind to and not to limit my interests. As a result, I signed up for an electronics class in ninth grade along with my best friend. We were the only girls in that class, and the class forever changed my life. I developed a lifelong passion for electricity and for troubleshooting, which led me to study engineering at Georgia Tech.

After earning my degree in mechanical engineering, I went to work for Florida Power & Light, where I had a successful career as an engineer, supervisor and, ultimately, a senior manager with statewide responsibilities. Looking to expand my overall utility breadth of knowledge, I joined the team in Homestead to lead them in operating the community's electric utility, with responsibilities ranging from power generation down to the customer and the customer meter.

Under your leadership, the City of Homestead was awarded a U.S. Department of Energy Resilient Electricity Delivery Infrastructure (REDI) grant to improve the city's electrical infrastructure. Tell us about this project and additional infrastructure improvement projects you have prioritized for your customers.

We used the grant funding to install "smart" circuit switches on our main circuits and to put infrastructure in place for advanced metering systems. The smart switches on a main circuit "talk" to each other and quickly automatically isolate the problem section following an outage. This allows for only the area affected by the problem to be out of service, significantly reducing the number of customers affected by a main circuit outage. The advanced metering systems give us the flexibility of reading meters remotely and also allow us to look at granular customer information at the meter level. This data is extremely helpful when investigating customer power quality concerns.

Other infrastructure improvements include the undergrounding of existing overhead facilities (60 percent of our electrical infrastructure is currently underground), replacing wooden poles with more robust concrete poles, building a new electrical substation to meet the growing demands for electricity associated with a growing city, and installing additional substation transformers and additional main circuits (feeder circuits) to address forecasted electrical demand for the future.

You've been in your current role with the City of Homestead for about 15 years now, earning designation from the American Public Power Association as a Reliable Public Power Provider (RP3). How have you worked to usher in increased reliability for your customers? How has this resulted in greater customer satisfaction?

The first step toward building a reliable electric system is to identify the problems. We capture data related to each of our power outages and use that information to craft our reliability priorities. We look for the primary causes of outages, such as weather, wildlife and trees on the line, and then develop a plan to address each of those items.

Most recently, our data has led us to purchase wildlife protection devices for both our power distribution lines, as well as for our electrical substations, and we are purchasing tree wire to combat falling palm fronds in areas where the palms tower over our lines. Other actions that we've taken over the years include adding tree trimming personnel, replacing lightning arrestors, replacing the type of wire splices we use, and some of the actions mentioned earlier such as undergrounding power lines and replacing wooden poles with concrete.

In your previous role, you were in a statewide leadership role over power restoration in a state that experiences a lot of hurricanes and extreme weather. How does this experience contribute to your perspective when getting the lights back on for your community after storm-related outages? How do you think your experience benefits Florida public power overall through your leadership roles with FMEA and FMPA?

I was working in the electric utility industry in Miami during Hurricane Andrew and also in Palm Beach and Broward during the extremely active hurricane seasons of 2004-2005. Those experiences gave me a healthy respect for Mother Nature and the need to prepare extensively to keep the electrical infrastructure as intact as possible during severe weather events. In one of my previous jobs, my team was responsible for developing the Storm Hardening Program at a large privately owned electric utility. I brought the lessons learned to Homestead, and we have been actively replacing infrastructure with storm hardened facilities for over 14 years now. The impact was noticeable after Hurricane Irma. We ultimately lost power to all of our customers after the storm, as did much of the state, but in the areas where we had upgraded the facilities, many people had their power restored in the first or second day following the storm. Some lost power for only an hour or two.

I believe my experience working multiple hurricanes over many years allowed us to get out of the gate more quickly in Homestead when Hurricane Irma hit. We have a pre-storm checklist that we use every year to have all the materials and logistics lined up in advance of hurricane season to minimize restoration times. Once it's time to jump into action, we already have our foundation in place. Homestead also

participates in FMEA's annual Hurricane Conference discussions, where we share our best practices with other municipal electric utilities and learn from them as well.

You have been featured in The Business Journals, participated in panels of the Florida Women in Energy Leadership Forum and are involved in women empowerment organizations like Extraordinary Women Leading Change. Why is it important to share your experience and expertise through various forums, and in particular, with other women?

I view my purpose in life to be one of service to others. When I'm assisting someone with figuring out a problem or improving the quality of life for others, it gives me a feeling of connection and accomplishment and provides support to another person. I truly believe we all have a responsibility to make a difference in the lives of others, and I'm fortunate to be able to do that through compassionate leadership and by modeling the way. I especially love providing opportunities and guidance for other women because, as a child, I was blessed with parents who taught me that gender is not an obstacle. I'm working hard to share that lesson with other women and girls. As females, we are often our own worst critics; sharing the message that we have valuable skills and perspectives is extremely important to me, and I believe it makes the workplace better.

What does it mean to you to be a public power leader? Why do you take on leadership roles in public power organizations like APPA, FMEA and FMPA, and in other industry-related organizations?

For me, public power is a critical service provided to the community by members of the community, and I am honored to participate in a meaningful way in bettering the lives of the local residents and businesses. I enjoy leadership roles because I love building a collaborative team and watching ideas [ferment] and then come to fruition. I also enjoy passing along the knowledge I garnered over many years in the industry and then brainstorming with our team members to take that knowledge and expand into new and exciting ideas.

Anything else you would like to add?

Over the course of my life, the biggest lesson I've learned is that every closed door is an opportunity to look for new, more exciting challenges. When someone else gets that promotion you wanted, celebrate with them, and then look for where you can break down that wall to get into the room on the other side of a different door. I was faced with making a big change when I moved from the private sector to the municipal sector, and it was so exciting! I was given the chance to learn all kinds of new things and broaden my horizons. While it was a little bit terrifying to leave the security of a world I had known for many years, it was also invigorating to face new and different challenges that helped me to grow both professionally and personally. I now know that every challenge is a new adventure waiting to be experienced. ■



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Corwin Highlights Need for Permitting Reform, Underscores Public Power's Focus on Reliability

At the top of the American Public Power Association's (APPA) wish list for congressional action this year is permitting reform to enable much needed generation and transmission, Scott Corwin, APPA's president and CEO said on January 23. At the same time, he underscored the fact that public power utilities remain laser focused on maintaining high levels of reliability for their customers. Corwin made his remarks at the United States Energy Association's 20th Annual State of the Energy Industry Forum in Washington, D.C. He participated on a panel, "Practical Energy Use and Supply," that also included the leaders of several other energy trade associations.

APPA Underscores Key Role that Lower Snake River Dams Play in Maintaining Grid Reliability

Recent extreme weather events have shown that the Lower Snake River Dams are an irreplaceable resource not just in the future but right now — both in

terms of energy, capacity and other grid services key to maintaining reliable electricity, Scott Corwin, president and CEO of APPA, said in a statement for the record submitted to key House members on January 29. The statement for the record was submitted for a January 30 House hearing, "Exposing President Biden's Plan to Dismantle the Snake River Dams and the Negative Impacts to the United States."

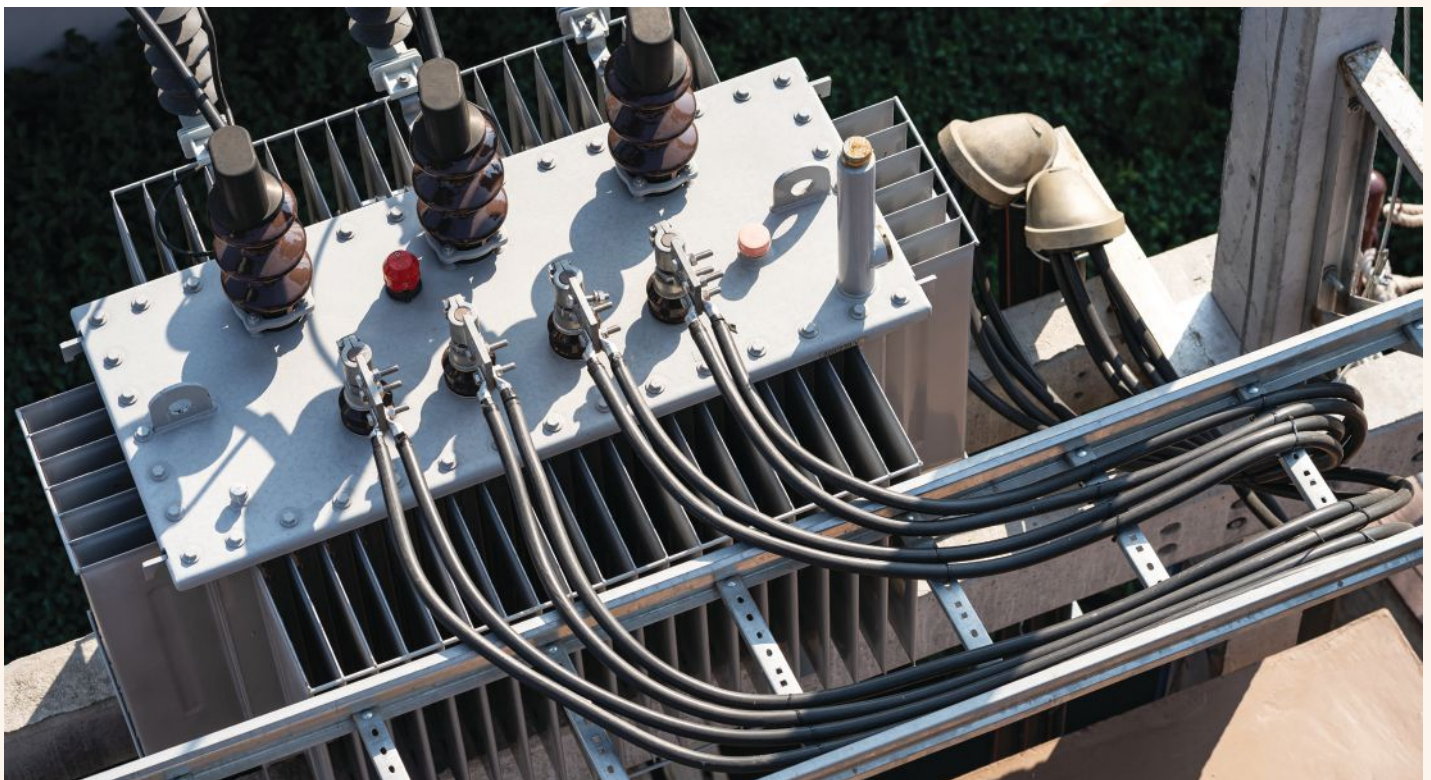
Bill Would Set New Limitations on Federal Efficiency Rules for Specific Distribution Transformers

Sens. Sherrod Brown (D-OH) and Ted Cruz (R-TX) introduced S.3627, a bill that amends the Energy Policy and Conservation Act and establishes new limitations on federal efficiency rules for specific distribution transformers. On January 18, APPA issued a statement supportive of the efforts of Sens. Cruz and Brown. The bill would restrict the Department of Energy (DOE) from finalizing any energy efficiency standards rule for liquid-immersed type, low-voltage dry

type or medium-voltage dry type distribution transformers that are greater than a trial standard level two. It also requires that those changes not take effect until 10 years after the rule is finalized. In late January, Reps. Mike Kelly (R-PA) and Chris Deluzio (D-PA) introduced HR 7171, the House counterpart to S.3627.

Groups Say Proposed Rule Would Tighten Access to Credit, Increase Borrowing Costs

A rule proposed by the Board of Governors of the Federal Reserve, Federal Deposit Insurance Corporation (FDIC) and Office of the Comptroller of the Currency (OCC) would broadly tighten access to credit and pose economy-wide increases to borrowing costs, APPA and state and local associations said in comments submitted on January 16. At issue is a Notice of Proposed Rulemaking on Regulatory Capital Rule: Large Banking Organizations and Banking Organizations with Significant Trading Activity issued by the Board of Governors of the Federal Reserve, FDIC and OCC. ■



Odds and Ends *From Across the State*

Five Florida Public Power Systems Earn Excellence in Public Power Communications Awards

Out of 67 total public power electric utilities and utility organizations that earned Excellence in Public Power Communications Awards from the American Public Power Association (APPA), five recipients were members from Florida. The awards were presented recently at APPA's Customer Connections Conference in San Antonio, Texas.

The recipients from Florida include Lakeland Electric (Award of Excellence, print/digital category), JEA (Award of Merit, video category), Kissimmee Utility Authority (Award of Merit, web/social media category), New Smyrna Beach Utilities (Award of Merit, video category), and the Florida Municipal Electric Association (Award of Merit, web/social media category).

The annual awards recognize excellence in communications. The entries are judged in three categories: Print/Digital, Web/Social Media, and Video. Awards were given to those that showed ingenuity and creativity in telling their stories through outstanding copy, design, financial data presentation, graphics, social media engagement, video editing and web layout and interactivity.



Pictured is FMEA Director of Public Affairs and Strategic Communications Nicole Albers (left) receiving the APPA Excellence in Public Power Communications Award of Merit from Huntsville Utilities Director of External Relations and Vice Chair, Customer Connections

Section Joe Gehrdes (right).

FMEA Members Earn Smart Energy Provider Designation from APPA

The City of Tallahassee and Kissimmee Utility Authority both earned Smart Energy Provider designation from the APPA. The awards were presented recently at APPA's Customer Connections Conference in San Antonio, Texas.

The Smart Energy Provider (SEP) designation was earned for demonstrating a commitment to and proficiency in energy efficiency, distributed generation and environmental initiatives that support the goal of providing safe, reliable, low-cost and sustainable electric service.

The SEP designation, which lasts for two years (December 1, 2023, to November 30, 2025), recognizes public power utilities for demonstrating leading practices in four key disciplines: smart energy program structure, energy efficiency and distributed energy resources programs, environmental and sustainability initiatives, and customer experience.



KUA Recognized with National Customer Satisfaction Award

Florida public power utility Kissimmee Utility Authority (KUA) was one of nine utilities recognized by

the APPA with Public Power Customer Satisfaction Awards for providing excellent service to their communities. The awards were presented recently at APPA's Customer Connections Conference. The Customer Satisfaction Award is the result of receiving high marks from customers in the areas of customer service, field personnel, communication, reliability, value, outage response, innovation and overall satisfaction.

Winners of Public Power Customer Satisfaction Awards are chosen at gold, silver and bronze levels based on responses to customer surveys. KUA received a bronze-level award for an average rating greater than 80 percent across the eight categories.



Florida Public Power Utilities Recognized with Building Strong Communities Awards

At its annual Energy Connections Conference and Trade Show in Orlando, the Florida Municipal

Electric Association (FMEA) recognized 20 Florida public power utilities with Building Strong Communities awards. These awards were presented to Florida public power utilities for their efforts to provide their local communities with extra services and programs that go above and beyond what they normally supply.

Winners were selected for programs and projects that provide community education, collect charitable donations, improve the environment, focus on crime prevention and other special programs that strengthen the communities in which they serve, such as lighting ball fields, playgrounds and bus stops; taking part in festivals, parades and holiday celebrations; hosting blood drives; and recognizing veterans and members of the military.

This year's Building Strong Communities award recipients include: Beaches Energy Services, City of Blountstown, City of Bushnell, City of Chattahoochee, City of Leesburg, City of Mount Dora, City of Newberry, City of Tallahassee, City of Wauchula, City of Winter Park, Fort Pierce Utilities Authority, Gainesville Regional Utilities, Homestead Public Services, JEA, Keys Energy Services, Kissimmee Utility Authority, Lakeland Electric, New Smyrna Beach Utilities, Ocala Electric Utility and Orlando Utilities Commission.

restoration efforts to their own communities and for providing or receiving mutual aid following significant weather events or when fellow public power communities were in need of extra assistance.

Sixteen Florida public power utilities were honored for their efforts to restore power quickly and safely when called on in 2023. This not only included providing mutual aid assistance following the unprecedented landfall of Hurricane Idalia in the Big Bend region, but for other weather and non-weather-related emergencies. The 2023 Restoring Communities Awards also recognized public power utilities providing supplemental crews to fellow utilities for large-scale projects like infrastructure upgrades.

This year's recipients include Beaches Energy Service, City of Blountstown, City of Chattahoochee, Gainesville Regional Utilities, Green Cove Springs, Town of Havana, JEA, Kissimmee Utility Authority, Lakeland Electric, City of Newberry, New Smyrna Beach Utilities, Ocala Electric Utility, Orlando Utilities Commission, City of Starke, City of Tallahassee and City of Williston.

Following Hurricane Idalia, more than 360 personnel from 58 utilities in Florida and from 13 other states, along with contractors and tree crews, assisted with mutual aid efforts in Florida's public power communities, and many went on to help neighboring utilities restore electricity to their customers once work was completed in public power communities. All of the Florida public power customers had their electricity restored less than 48 hours after Hurricane Idalia made landfall.

JEA Receives Top Ranking in 2023 Business Satisfaction Survey by J.D. Power

JEA ranked highest in business customer satisfaction for service among mid-size utilities in the South in the 2023 J.D. Power Electric Utility Business Customer Satisfaction Study, J.D. Power announced recently. The study measures electric utilities based on surveys from customers. The rankings are a result of data collected from 17,683 utility customers J.D. Power surveyed during 2023. These results translate into studies and reports that are used by companies worldwide to improve quality and customer satisfaction.

The 2023 survey results mark the second time that JEA has received the top business customer satisfaction ranking



Florida Municipal Electric Association Announces 2023 Restoring Communities Award Winners

FMEA recently announced its 2023 Restoring Communities Awards, which recognize public power utilities for their exemplary power

among mid-size utilities in the South, which includes eight utilities from seven southern states. The first year JEA received the top ranking was in 2016.

JEA's leadership team and the JEA Board of Directors have established strategic goals that include earning customer loyalty, delivering business excellence and developing an unbeatable team. Nationally, JEA ranked third among mid-size utilities (serving between 50,000 and 89,999 business customers). JEA ranked 13th out of all 77 utilities represented in the study.

OUC Earns Top Rank from E Source

The Orlando Utilities Commission (OUC) earned the top spot in the E Source 2023 Business Customer Satisfaction Study among municipal and investor-owned utilities. E Source — a utility research and consulting firm — conducts market research for its annual Business Customer Satisfaction Study to provide utilities with direct feedback from large business customers from a variety of industries including distribution, transportation, health care, hospitality, education and more. The study scores overall satisfaction levels and identifies areas of improvement for account representatives.

OUC ranked No. 1 with a score of 9.5 out of 10 for overall customer satisfaction and perceived value, earning top marks in reliability, trustworthiness and effective emergency communications.

This recognition is attributed to OUC's Key Accounts team who manages relationships with Central Florida's large business customers including Universal and Greater Orlando Aviation Authority. OUC's Key Accounts earned the highest scores in five out of seven attributes, including communication and trustworthiness.

WEC Energy Group based out of Milwaukee, Wisconsin, ranked second in the survey with a score of 9.3, followed by Florida Power and Light in third place with a score of 8.93.

FPUAnet Communications Launches Fiber Internet in Lincoln Park

FPUAnet Communications, a division of the Fort Pierce Utilities Authority (FPUA), launched fiber internet service in the

Lincoln Park area of Fort Pierce. Fiber internet is the fastest and most reliable internet technology available, and it will provide Lincoln Park residents and businesses with the speeds and bandwidth they need to thrive in the digital age.

FPUAnet is offering a variety of fiber internet plans to Lincoln Park residents, with speeds up to 1 gigabit per second (Gbps). Fiber internet is symmetrical, which means that upload and download speeds are the same, making it ideal for activities such as video conferencing, streaming high-definition video and schoolwork.

The service is available to Lincoln Park residential customers for as low as \$1 per month if they also qualify for the federally funded Affordable Connectivity Program (ACP). This rate is made possible through a combination of discounts provided by the ACP, Alleghany Franciscan Ministries, St. Lucie County and the City of Fort Pierce.



JEA and UNF Advance Sustainable Solutions at Lab Opening

The University of North Florida (UNF) School of Engineering and JEA recently celebrated the grand opening of the JEA Sustainable

Solutions Lab. JEA has made a five-year financial commitment of \$500,000 that will provide UNF undergraduate and graduate students the opportunity to research renewable energy and, eventually, clean water technologies, as well. JEA and UNF share a common goal of ensuring a robust pool of trained and environmentally conscious engineers, scientists and other industry professionals to contribute to the responsible economic development of Northeast Florida. The lab will serve as a hub for research to develop long-range and lasting solutions for JEA and a variety of industries.

As JEA prepares for a more sustainable and distributed energy future, collaborations like these are critical to

developing a workforce prepared to meet our community's energy and water needs. The collaboration between JEA and UNF began in 2001 with \$500,000 in contributions made between 2001 and 2004. Since then, the JEA/UNF efforts have resulted in more than \$18 million in federal, state and private industry-funded research at UNF.

JEA's recent commitment of \$500,000 will be made over five years, at a rate of \$100,000 per year from 2023 to 2027. A small-scale 2-kilowatt microgrid solar panel system is under development at the lab site. UNF also has plans for a 40-kilowatt demonstration microgrid solar panel system.



KEYS Recognized by the Government Finance Officers Association

Keys Energy Services (KEYS) recently received the Certificate of Achievement for Excellence in Financial

Reporting from the Government Finance Officers Association of the United States and Canada (GFOA) for its annual comprehensive financial report for the Fiscal Year ended September 30, 2022.

The Certificate of Achievement is the highest form of recognition in the area of governmental accounting and financial reporting, and its attainment represents a significant accomplishment by a government and its management.

The report was judged by an impartial panel to meet the high standards of the program, which includes demonstrating a constructive "spirit of full disclosure" to clearly communicate its financial story and motivate potential users and user groups to read the report.

The GFOA advances excellence in government finance by providing best practices, professional development, resources and practical research for more than 21,000 members and the communities they serve.

Leesburg Electric Announces a New Way to Report Power Outages

In an effort to better communicate with customers, Leesburg Electric recently introduced a new text-based outage alert system. Once enrolled, electric customers can simply report their outage by texting "OUT" to (352) 728-9830. Once a customer reports an outage, they can receive status updates and notifications when an outage has been restored. Current electric customers were automatically enrolled in the service and received a welcome message when the system became active in December. Post-launch, new City of Leesburg Electric customers are able to opt-in to the service by texting "POWER" to (352) 728-9830.

Keys Energy Services Offers New Rebate Program for Electric Vehicle Chargers

KEYS is now offering a new rebate program for electric vehicle chargers, the Florida public power utility said on October 19. The program provides qualifying KEYS customers with a \$350 EV charger rebate and an additional \$50 efficiency rebate if the charger is Energy Star certified. Early adopters who previously purchased an EV charger between July 1, 2019, and September 30, 2023, had the opportunity to apply for a retroactive rebate through the end of 2023. Customers who purchased an EV charger on or after October 1, 2023, were allowed 90 days from the purchase date to apply for the rebate. Rebates will be awarded to eligible customers on a first-come, first-served basis. The rebate program will sunset once funding has been exhausted.

Newberry Recognized for Excellence in Financial Reporting

The City of Newberry has been awarded the prestigious GFOA Certificate of Achievement for Excellence in Financial Reporting for Fiscal Year 2022. This marks the fifth consecutive year of recognition for the City of Newberry. This award, which fewer than 5 percent of governments earn, highlights Newberry's commitment to transparency, accuracy and excellence in its financial reporting. Congratulations to the city — especially Newberry's dedicated finance team — for their outstanding work. ■

Who's Who in the Florida Public Power Community

Ocala Electric Utility Celebrates Milestone Journeyman Achievement



Candida Riddle is Ocala Electric Utility's first woman Advanced Metering Infrastructure (AMI) Apprentice Graduate. She is now an Electric Meter Technician Journeyman. Congratulations on this milestone achievement!



Juli Crawford Promoted to JEA Vice President, Enterprise Strategy and Planning

JEA has promoted Juli Crawford to serve in the newly created position of vice president of enterprise strategy and planning, reporting to JEA's chief strategy officer. In her role, Crawford will lead JEA's enterprise strategy, analytics and enterprise planning teams to coordinate the utility's long-range goals, both financial and operational. The enterprise teams will collaborate with other JEA functions to develop processes and facilitate the utility's overarching strategic objectives.

Crawford's experience includes 15 years at JEA in both its strategy and finance teams. Most recently, she has served as senior advisor to the chief strategy officer and as director of financial planning and analysis (FP&A). Prior to joining JEA, she was a part of the strategic planning group at Gainesville Regional Utilities. Crawford earned a bachelor's degree in finance from the University of Florida and is a Certified Corporate FP&A professional. She assumed her new role on November 20, 2023.

JEA Congratulates Leadership on New and Expanded Roles



Congratulations to Kurt Wilson and Jordan Pope on their expanded leadership roles at JEA.

In addition to Kurt's previous role leading government relations, he will now serve as JEA's vice president of government and community relations, directing the community engagement teams to offer enhanced internal alignment, synergy and external stakeholder focus.

Jordan will continue leading the distributed resources and business resources team and take on the newly formed grid modernization team as vice president. This expansion will allow the group to focus on meter/grid technologies and strategy.

KEYS Julio Torrado Named a "Key West Star"



Keys Energy Services' (KEYS) Julio J. Torrado was recently named a "Key West Star" by the Greater Key West Chamber of

Commerce at their membership meeting on Wednesday, December 13. The Key West Star award recognizes individuals for outstanding volunteer service to the community and business organizations of Key West.

Torrado has worked for KEYS since 2003 and currently serves as the director of human resources and communications. He currently holds leadership roles and serves on the boards of Wesley House Family Services, the Florida Keys Society for Human Resource Management, the Tropic Cinema, the Key West Harry S. Truman Foundation and Key West United Methodist Church.

FMPA's O'Hagan Promoted



The Florida Municipal Power Agency (FMPA) recently announced the promotion of longtime Assistant General Counsel Dan O'Hagan to deputy general counsel and manager of regulatory compliance. O'Hagan has served Florida public power for two decades, most recently as FMPA's assistant general counsel and manager of regulatory compliance, and as assistant general counsel and regulatory compliance counsel since February 2004. O'Hagan was named to the Board of Directors for the Transmission Access Policy Study Group in October 2022. Join us in congratulating him on his well-deserved promotion.



Power Profile: FMEA's Nicole Albers Featured in FWELF's *The Power Source*

Nicole Albers, director of public affairs and strategic communications for the Florida Municipal Electric Association (FMEA), was featured as the Power Profile January 2024 in *The Power Source* by Florida's Women in Energy Leadership Forum (FWELF). The Power Source talked to Nicole about energy issues in the 2024 legislative session, her role in advocating

for and supporting FMEA and Florida's public power communities and her take on working in the energy industry. Formed in 2015, the FWELF highlights women leaders in the energy industry as well as respective organizations that support women leaders in the industry and explores topics of mutual importance to all of the stakeholders.

Florida 500 2023 Energy Leaders Announced



Florida Trend. Recognized in the Florida 500 this year are JEA Managing Director and CEO Jay Stowe, Florida Municipal Power Agency General Manager and CEO Jacob Williams, Orlando Utilities Commission General Manager and CEO Clint Bullock, and Florida Municipal Electric Association Executive Director Amy Zubaly. Bullock's recognition was notable as the utility celebrated its 100th anniversary. The sixth annual Florida 500 edition features the most influential business leaders across the state. Join us in congratulating these

Congratulations to Florida public power leaders for being named to the Florida 500 in

four leaders for their contributions to public power and recognition by *Florida Trend*.

JEA's Jay Stowe Named Co-Chair of the Electric Sector Coordinating Council



JEA Managing Director and CEO Jay Stowe was recently named co-chair of the national Electricity Subsector Coordinating Council (ESCC),

the principal liaison between the federal government and the electric power industry, on which he has represented Florida and public power since 2022.

ESCC members strategize to prepare for and respond to national disasters and threats to critical infrastructure. The ESCC works to enhance the reliability and resilience of the electricity grid, including physical and cyber security infrastructure and emergency preparedness.

The American Public Power Association, the national trade group representing municipally owned power companies, previously named Stowe as one of the organization's four representatives to the council. His initial appointment is a three-year term with a possible reappointment to a second term. ■



POWER PLANTS: THE HEARTBEAT OF THE ELECTRICITY BUSINESS

by John Egan

Looking for a good job with great pay and benefits? You can typically earn more than \$100,000 per year, with overtime, as a power plant operator. The job doesn't necessarily require a college degree, but operators must be willing to work rotating 12-hour shifts and go through specialized training. The ability to adapt to changing technologies is essential, excellent hand-eye coordination is required and experience playing video games could be a plus.

The mission of those who work at FMEA member-owned power plants is to provide safe, reliable, efficient, financially responsible and environmentally compliant electricity to customers. That mission remains the same even as the power generation business undergoes unprecedented transformation.

Power Generation Is a Good Career Option

For all its current turbulence, Henry Gainer, assistant general manager for energy supply at the City of Tallahassee Utilities,

which provides electric service to more than 128,000 customers, looked back with fondness on his four-decade career in the electricity business. "The power generation business has been very good to me, and I recommend it because it's a rewarding career where the work you do touches a lot of people's lives.

"The industry has sent me across the country and around the world," he continued. Recruited by White Westinghouse in the mid-1980s as a student in the University of

Florida's mechanical engineering department, his first assignment was to help rebuild a biomass power boiler at Fernandina Beach in northeastern Florida. His career started with Tennessee Valley Authority at Watts Bar Nuclear in Startup and Test, and then it took him to Alabama and the Philippines, where he met his wife and his son was born.

After that, he came back stateside to jobs in Oregon, Washington and California, then back to Florida with Progress Energy at Crystal River (now Duke Energy). He returned



to Southern Company with its Mississippi Power unit, where he was part of a team trying to build the Kemper County integrated gasification combined cycle (IGCC) power station. He arrived at the City of Tallahassee in 2015.

During his lengthy career in the electricity business, Gainer has been involved in nearly every kind of power generation project: natural gas, fuel oil, black liquor recovery, coal, nuclear, solar, hydro and biomass.

Some of those technologies experienced profound troubles, such as at the Watts Bar Nuclear Plant, where construction was halted for 17 years, and the Kemper County IGCC project, which was dogged by technical problems and significant cost overruns.

"Reliable and cost-effective power generation is at the heart of an electric utility's mission," he said, "followed by price stability and

sustainability. My predecessors at the City of Tallahassee did a great job upholding those missions; they didn't jump into nuclear, they didn't jump into coal, they didn't jump into IGCC or biomass, and they didn't jump into solar until the costs came down."

When it comes to power generation technology, Gainer said Tallahassee prefers to be a fast follower, letting other utilities explore the occasionally bleeding edge of new power generation technologies.

"I've been given a gift," he said of the city's energy supply function. "Not only do I not want to break it, I want to leave it even better for the next generation."

Functional Areas and Responsibilities at a Power Plant

While each utility may have a different name for a work group, generally work at a power plant is organized around five functions:



1. Operations
2. Maintenance
3. Engineering
4. Safety
5. Environmental Compliance

Operations: These are the people who operate the power plant, ramping its output up or down to match power demand from customers. They oversee the power plant and monitor its operations and equipment to ensure that everything runs smoothly.

Maintenance: People in this work group plan and perform regularly scheduled maintenance tasks, also known as “turnarounds.” During a scheduled turnaround, the generating unit is not operating, so workers can safely perform their work. To keep the plant’s major equipment functioning according to its manufacturer’s specifications, these workers inspect, repair, adjust, upgrade or replace equipment on a regular basis (generally, every six to 18 months, depending on the fuel used at the generator). During unscheduled outages, when a plant unexpectedly goes offline, these workers diagnose and fix what has broken.

Engineering: Engineers provide technical oversight, among other things, to ensure industry standards from the American Society of Mechanical Engineers (ASME) and other professional engineering associations are followed when changing equipment or modifying processes. Engineers, of course, are highly skilled professionals and are deeply involved when power plants are constructed, modified or reactivated after a prolonged period of not operating.

Safety: A power plant can be a dangerous place if established processes are not followed. Safety specialists are there to provide training, minimize injuries and investigate safety incidents after they happen. They also organize fire drills and other safety exercises at the plant, and they compile statistics on different types of injury classifications, such as OSHA recordables, lost-time incidents, employee slips and falls, and vehicle backing accidents.

Environmental Compliance: These professionals are on-site to make sure all federal, state and local environmental regulatory standards for air, water, wastewater

and solid waste discharges are met — and to report instances when those standards are not met. Gas plants tend to have proportionally fewer environmental compliance personnel than coal-fired generators. “The power plant’s top manager acts like an orchestra conductor, making sure each department plays its defined part so that the plant operates safely and efficiently,” said Joe Naberhaus, director of solid fuel generation at the Stanton Energy Center, owned and operated by the Orlando Utilities Commission (OUC).

Decarbonization: A Journey, Not an Event

Power plants are at the heart of today’s discussion of decarbonization. For FMEA’s largest members that own power plants, it takes dozens if not hundreds of people to operate the generators that meet the electric needs of their communities.

In general, electric generators are designed to operate for about 50 to 60 years, though some could run for decades longer if a utility’s leadership decides to invest in extending the life of a generator.



While “decarbonization” may sound like a discrete event to some, it’s more of a strategic process that takes place over years or even decades. It can take years just to secure engineers and contractors who can take a plant offline and either mothball it or decommission and demolish it. Whatever their fuel, as generators are retired, replacement resources — either on the supply side or the demand side — must be identified and either built, secured via contract, which are known as a “power purchase agreement,” or marketed to customers, in the case of energy efficiency and demand response programs.

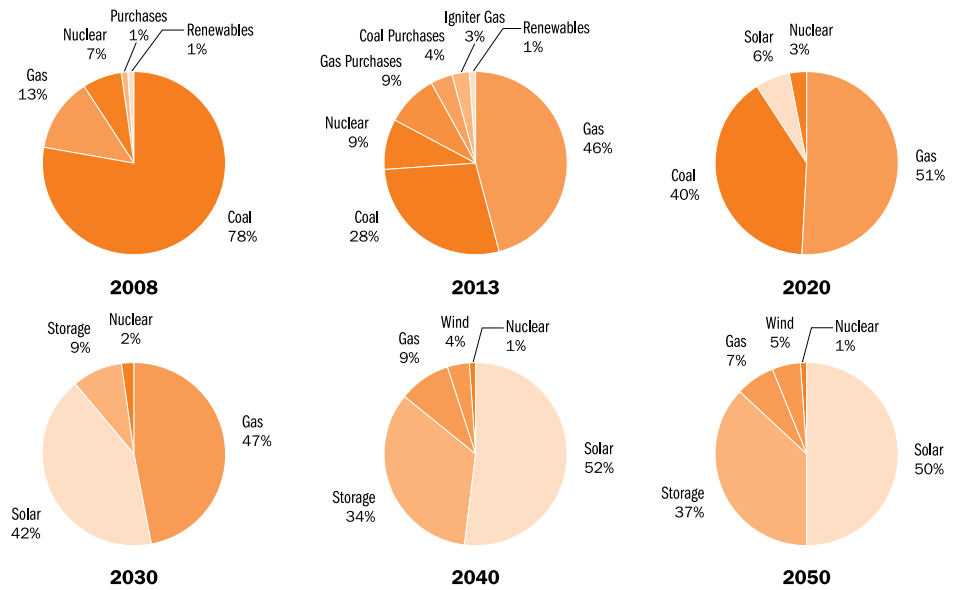
Every few years, FMEA members and electric utilities across the country undergo or update their integrated resource plan, an extensive, long-range planning exercise to identify the most cost-effective resources a utility can use to meet customer demand for electricity. On the supply side, this means planning for and securing electric generations. On the demand side, that typically means implementing voluntary customer programs like energy-efficiency or demand-response programs. Many utilities use a mix of supply- and demand-side resources to meet customer demand.

OUC, which provides electricity to more than 270,000 customers in and around Orlando, is working to reduce its carbon dioxide (CO2) emissions, like many other generating electric utilities across Florida and the country. Federal, state and local regulations, plus shifting customer preferences and the evolving economics of power production, are driving this trend.

As recently as 2008, about 78 percent of OUC’s electricity was generated by burning coal. That declined to 40 percent in 2020. Over the 2008-2020 period, coal was displaced by gas.

By 2030, OUC projected, it will reduce CO2 emissions by 50 percent compared to 2005 levels. Further into the future, carbon emissions will drop 75 percent by 2040, and by

OUC Fuel Mix



2050 the utility is expecting to be net-zero CO2 emissions.

The Stanton units are large baseload generators: in Stanton Unit 1’s case, 480 megawatts (MW) of generating capacity. Each MW of generating capacity can generally meet the electric needs of about 1,000 homes. “The Orlando area is experiencing strong growth in demand for electricity,” said Naberhaus. “But in 2021, we purchased the Osceola Generating Station, which is being refurbished. We expect that refurbishment will be completed next year and [will] allow us to continue [toward] our CO2 reduction goals.”

Biggest Challenges

We asked three power plant leaders — Gainer at Tallahassee; Naberhaus at OUC; and Jason Terry, vice president of power supply at KUA (Kissimmee Utility Authority), which serves around 90,000 customers in and around Kissimmee — about their most significant challenges.

“My top priorities are preparing and making decisions for the future, given all the uncertainties in the political/regulatory arena, the economy and emerging technologies,” said Terry. “We must provide reliable and

affordable electricity every hour of every day of the year despite any external challenges and changes that may impact our generation fleet.

“Some of our fossil fueled units are nearing their end of life,” Terry continued. “You can say, ‘just replace them with renewable,’ but renewable generators cannot be dispatched, and output is not guaranteed. Depending on environmental conditions, renewable energy’s output can vary greatly on a minute-by-minute basis.

“Renewable non-dispatchable energy sources require backup by a reliable source of electric generation that can be dispatched from the utility’s control center, such as fossil-fueled generators, nuclear power or hydroelectric generation,” the KUA executive said. Unfortunately, hydro is sparse in Florida, wind energy is nearly nonexistent, solar is intermittent and nuclear is extraordinarily expensive. That, effectively, leaves investing in natural gas units.

“With all the changes shaping the electric generation business, my main goal is to make decisions that bring the

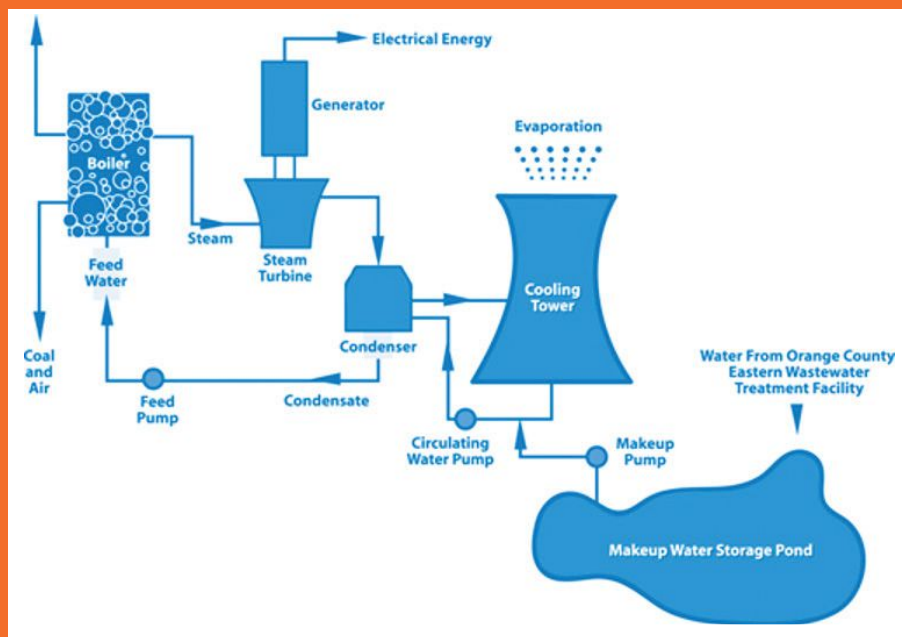
How Is Electricity Generated?

Electricity can be generated from a variety of fuels, including coal, natural gas, uranium, the sun, oil, wind, biomass and hydrogen. The processes differ by fuel, but in general, the image below shows how electricity is generated at a coal plant.

FMEA members and the United States utility industry in general have stopped building new coal-fired power plants and switched to constructing either gas-fired units, which emit about half the amount of CO₂ as the same-sized coal plant, or renewable generators like solar or wind.

Prior to the COVID-19 pandemic, the per-megawatt cost to construct renewable generation had fallen dramatically, as much as 75 percent over the prior two decades, driven by technological advances as well as surging demand from utilities and developers of power plants. That trend has leveled off, mainly due to supply chain bottlenecks. It's not yet clear whether future costs for renewables will resume its downward trend, stay stable or rise.

Courtesy: OUC



most reliability to our customers for the best value in both the present and the long-term," he said.

OUC's Naberhaus commented, "It's not my nature to worry, but the energy transition away from traditional fossil-fueled generation affects people and equipment. We need to cross-train employees who will be affected by the transition."

Tallahassee's Gainer shares his colleagues' concerns about integrating so much solar into the grid: "Layering in so much new solar generation means we have to cut the power output from our fossil-fueled combined-cycle units. Ramping the output of those units up and down places added stress on the equipment."

"People need to stay current on evolving technology and be willing to learn along the way," commented Naberhaus.

Gainer agrees. "The process of generating electricity has changed a lot over the last 120 years, mainly in the choice of fuel. But how operators in the control room do their work also has changed significantly. Back in the 1980s, the output of a power plant was regulated manually, using knobs, switches and levers. Today, power is controlled with a computer mouse and a computer keyboard. We need people who are willing to keep up with changing technology, undergo training and be mindful of industry trends." ■





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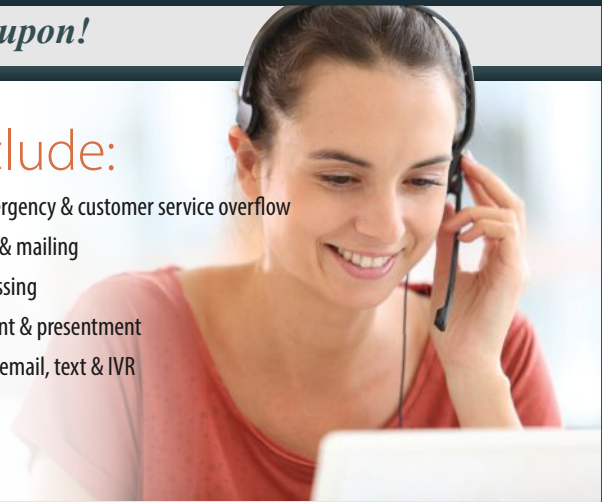
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FROM BACKGROUND TO **CENTER STAGE:**

UTILITY SUPPLY CHAIN MANAGERS

by John Egan

Most of the world had never heard the term “supply chain management” before COVID-19. Now, it’s become the occasionally snarky answer to all sorts of questions, from, “Why aren’t you married?” to, “Why doesn’t the grocery store stock that bacon I love?” Procurement professionals from two FMEA member utilities took us into their world, which went from “just in time” to “next year, maybe, if you’re lucky.”

Caleb Fisher, a procurement supervisor at New Smyrna Beach Utilities (NSBU), which provides electricity service to about 30,000 customers, always wanted to be thought of as “that guy” who could fix problems. His father was “that guy” as a diesel mechanic for the railroads. But the challenges Fisher faces each day — procuring and managing an inventory of 1,800 parts and equipment amid broken supply chains and rapidly escalating prices — are ones his father, Ben, could only imagine.

“I love the challenge of finding goods at competitive prices,” Fisher said. “Working under pressure suits me — in that way, I’m almost like a short-order cook: never sure of what’s

coming but always ready. If you’re looking for a quiet and predictable workplace, don’t go into supply chain management and procurement. At least not now.”

Fisher’s personal motto is “adapt and overcome.”

The Mission of Supply Chain and Procurement Professionals

COVID-19 may have scrambled a lot of things in a utility’s supply chain and procurement functions, but the mission of those functions remains unchanged: to obtain goods and services at the best possible prices and terms and to maintain safe and reliable electric service while also protecting customers from dramatic

price increases, said Lisa Pleasants, a senior manager of sourcing for JEA, which provides electric service to more than 500,000 customers across four Northeast Florida counties.

These days, part of fulfilling that mission means ordering more units of goods, parts and equipment much earlier than before to ensure supplies don’t run out. Currently, JEA manages about \$118 million of inventory, including power poles, more than double the inventory it managed before the pandemic. The utility stores that material in about 500,000 square feet of warehouse and outdoor storage space. That’s equivalent to about 11.5 square acres, or roughly nine professional football fields.

"We're constantly looking to reorder quantities of materials to ensure those materials are promptly restocked," said Rodney Lovgren, a senior manager for JEA's procurement support group.

Fisher agreed. "We need to ensure materials are available for daily use and to make sure capital projects go according to schedule."

Right now, Fisher is on the hunt for distribution transformers — like a lot of his peers at electric utilities across the nation. He's also seeking rubber goods such as bushings and elbows that go into transformers. "Anything that goes into a transformer has been in short supply," he said.

But like the astronauts of Apollo 13, failure is not an option for public power procurement and supply chain professionals. "We can't not have materials and equipment," Fisher said. "Line workers can't do their jobs without the materials we get them."

In recent years, that has meant getting creative. At points during the worst of the supply chain breakdown, in other words, during most of 2020 and 2021, Fisher found himself in Home Depot or Lowe's stores shopping for five-eighth-inch machine bolts and other generic, non-specialized materials because his suppliers had a monthslong backlog for the basic parts and materials that are necessary for providing safe, reliable electric service.

Supply Chain Management Has Changed the Way Utilities Operate

Over the last four decades, utilities and companies in a variety of other industries around the world have transformed the way they manage inventory. Once upon a time, manufacturers and utilities invested enormous sums of money each year stockpiling spare parts and other materials that sat, sometimes for years, in warehouses waiting to be used. That inventory was an insurance policy that prevented companies from running out of the materials they needed in order to operate or in times of emergency.

But that all changed in the latter years of the 20th century after companies invested billions of dollars to build digital and physical networks

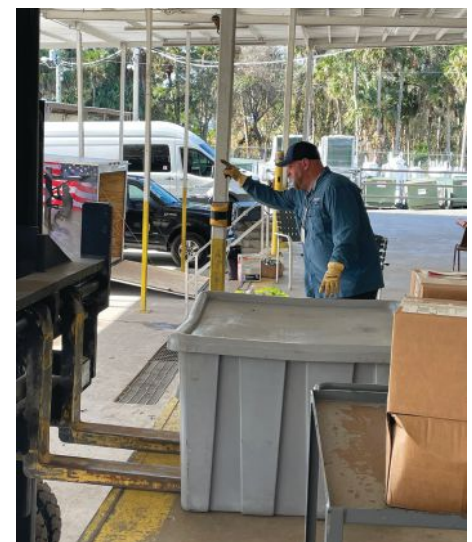
that could more dynamically monitor and manage inventory. The term "supply chain management" was coined in 1983, bringing with it a "just in time" (JIT) approach to materials management that featured the continual restocking of spare parts and other equipment as they were drawn down from inventory. No longer would companies have to invest millions of dollars in goods, parts or equipment that were not needed for years.

By labeling every piece of material with a unique stock keeping unit (SKU) bar code, companies and their suppliers knew exactly how many units of a particular item were on hand at any given time. Restocking orders were automatically placed based on historical usage patterns for each item. That system made sure utilities had enough poles, wires and transformers in the same way your local grocery store had enough fudge ripple ice

cream on hand. Goods flowed in a continual stream as they were needed. Shelves were kept full, both at utility warehouses and grocery stores and retailers.

When Fisher joined NSBU in 2003, JIT was the mantra of supply chain management and procurement professionals. It was lightyears more efficient than the old "buy and hold" approach to inventory management.

But then, supply chains around the world were broken by the COVID-19 pandemic. Inventory disappeared and could not be replaced in a timely manner. Gradually, those chains are being restored, though Fisher predicted it will be at least another two years until life is back to normal. An avid fan of the Green Bay Packers professional football team, Fisher estimated that restoring global supply chains was only at halftime.



In general, Fisher's counterparts at JEA agree with his assessment. What the electricity business is going through with supply chains is not a temporary bump or burp; rather, it's going through a wrenching realignment that will continue to unfold over the next few years.

One of the reasons is intensified competition for materials. "Electric vehicle batteries use the same type of specialized steel as utility transformers, and you know how fast demand for EVs is rising," commented Jenny McCollum, JEA's director of procurement services.

She estimated that there has been a 20 percent year-over-year surge in demand for materials. "There's been quite a bit of growth

locally, and surging demand has been the biggest disrupter for us."

Her colleague Pleasants added, "The challenges have grown exponentially — both in the labor force and the broader economy. We're seeing prices we never thought we'd see. Everything costs more and we seem to get less. We have had to become more flexible in our purchasing decisions.

"We're writing contracts differently now," she continued. "Right now, we're writing contracts for goods we won't receive for three years or more. Prior to COVID, our delivery horizon was three to six months for those same materials."

NSBU has experienced a blended average increase of about 130 percent across all of its materials. And that gain, as large as it is, masks some truly extraordinary price escalations, such as a 250 percent to 300 percent increase on transformers. But the cost of other materials has increased by only about 20 percent over the last three years.

And delivery dates, like prices, continue to be a challenge. "I've been in supply chain management at NSBU for 20 years, and I never thought I'd see the day when it takes 24 months or more to take delivery on a transformer. It used to be three to four months."

And, of course, supply chain kinks have added stress to power restoration efforts after a storm. But none of the interviewees said a broken supply chain has caused delays in restoring power after storms. It hasn't yet, but it has changed the way they prepare and order for continued expeditious storm response. Supply chain professionals don't play the "blame game." Instead, they find new ways to overcome obstacles.

"It can be a little frustrating for people to say, 'So you're the reason we can't get what we need,' but hearing those comments makes me redouble efforts to get the gear we need in stock," said Fisher.



Inventory Management by the Numbers

JEA's procurement, inventory planning and warehousing team consists of about 70 employees. They manage the equivalent of about nine football fields, or about 11.5 square acres, of indoor and outdoor warehouse space holding 22,000 items. The aggregate value of that inventory today is twice what it was pre-COVID because of the need to stockpile items to support the utility's growth and provide material availability due to supply scarcity.

NSBU's three-person team manages storage space of about 125,000 feet, which is about roughly two acres of indoor and outdoor storage space. They stock about 1,800 items. Before COVID-19, the value of inventory was between \$1.4 million and \$1.8 million. But the need to stockpile material has driven up the value of inventory by about \$2.5 million.

Overcoming Challenges

In response to the double whammy of broken supply chains and strong growth, JEA created a supply chain resource hub on its website in late 2022 that provides weekly updates to area developers and contractors who were eager to break ground on a new residential subdivision or office complex. At times, those weekly reports listed the status of as many as 50 different construction projects, but the backlog has declined to about two dozen active projects on a given week. Builders and developers have welcomed the site because it provides current information about the status of their projects. The website has eased tensions between JEA and local developers and contractors.

The creation of a supply chain resource hub webpage is the latest supply chain innovation at JEA. Until about 2016, JEA operated a more

tactical buying center, but then it evolved to a more strategic integrated procurement and supply chain function built around JIT and category management.

NSBU and the JEA team are working to overcome supply chain challenges by spending more time conferring with peer utilities, ensuring they're getting the straight story from suppliers on the prices and availability of goods.

To accelerate power restoration after storms, FMEA has acted as a middleman for its members, helping facilitate the acquisition of transformers and other equipment if needed from utilities with a surplus to those who may have a need. This option was instituted in response to ongoing supply chain problems following the pandemic.

Pleasants said JEA's utility is moving toward strategic sourcing rather than relying on spot

purchases from this or that vendor. "We're spending a lot more time preparing requests for proposals (RFPs) and drafting scope of work documents. We're sourcing more materials domestically, but we have to go overseas for some materials. We're writing some strategic sourcing contracts for goods that will be delivered in three, four, five or six years."

Lowgren added that JEA is overcoming some supply chain obstacles by adopting a longer planning horizon. For many materials in their inventory, they're using an 18-month planning horizon, up from three to six months before COVID-19. For larger projects, such as substation transformers, they're looking three to six years into the future.

Fisher said he's tripled his planning horizon — to 36 months from 12 months previously. He's also relying more on contacts at other utilities that operate in similar conditions (i.e., near a

saltwater environment) for guidance. "COVID bonded us as an industry," he said. "I've taken calls from counterparts at other utilities who were seeking a 'reality check' to make sure their suppliers were telling them the truth. And I've made those calls, too."

"Problems are opportunities dressed up in other clothing," he commented. "So far, we haven't met a problem we could not handle." ■





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UTILITY DISPATCHERS: THE ELECTRIC SYSTEM'S TRAFFIC COPS

by John Egan

“Traffic cop” or “train conductor” are the terms utility control room professionals use to describe their work. They help keep the lights on for customers by making quick decisions on outages, often before all the data is available. This is especially true during storm season. Good communication skills are also required because customers call the control room at all hours of the day and night, asking questions about their bill or reporting that a streetlight is out.

What does it take to be a successful utility control center operator? To start, the ability to make quick decisions about outages before all the data is in. “Paralysis from analysis” is something that can’t happen in a control center, said Eric Pickles, manager of system operations for Lakeland Electric, which provides electricity to about 140,000 customers.

“Outages sometimes occur in the middle of the day, when the weather is calm and the sun is shining,” he continued. “During those

‘blue sky’ conditions, operators (sometimes known as dispatchers) need to make decisions quickly on outage restoration based on the sometimes limited information we have in the SCADA (Supervisory Control and Data Acquisition) and outage management systems. Could an animal or a tree have made contact with a piece of equipment, causing a short? By also monitoring the first responder dispatch system, operators will know if there was a vehicle accident at the scene of an outage. Sometimes it’s a process of elimination.

“People who prefer to wait until all the data is in before making a decision would not do well as a control center operator,” Pickles said. “I always worked better under pressure. In school, I did all my homework at the last minute.”

What Is a Utility Control Center?

A utility control center is the metaphorical nerve center for an electric utility’s distribution

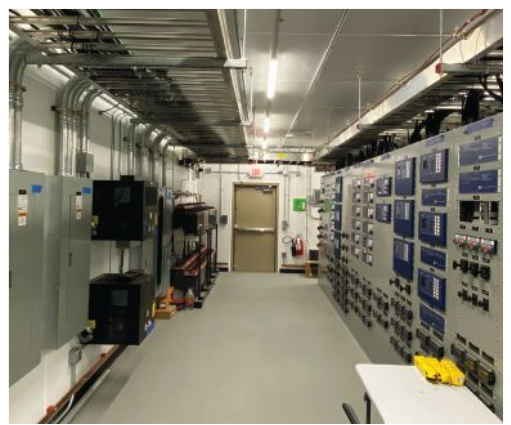
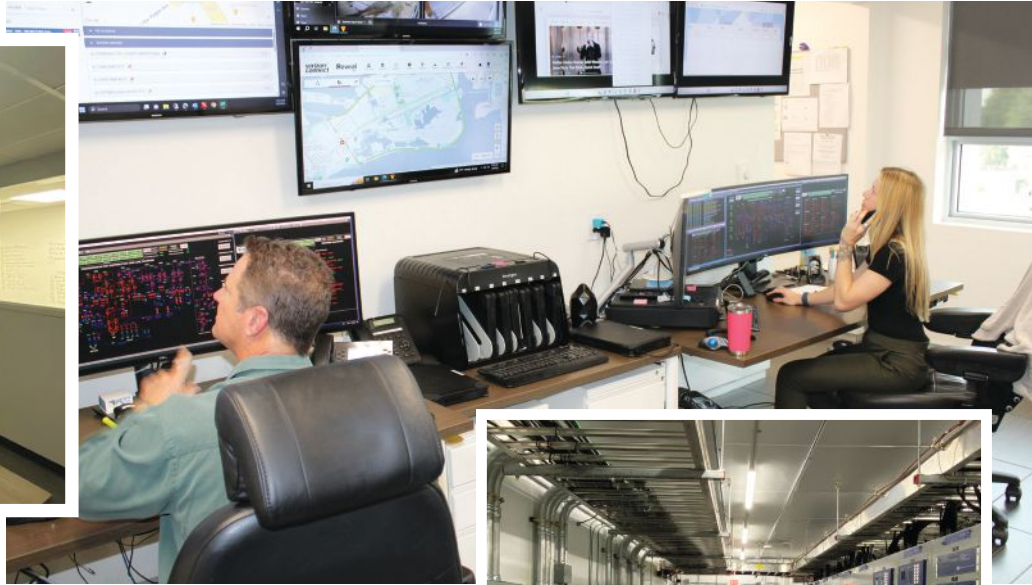
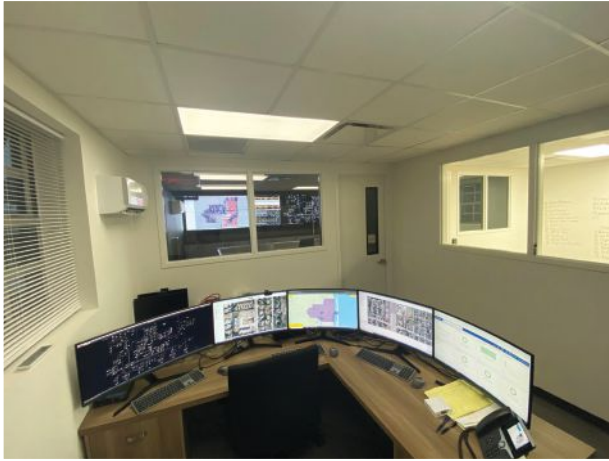
system, and sometimes for its transmission system, according to practitioners we interviewed. They also agreed that it is the place where the health of the distribution system can be monitored in real time.

Control center operators help ensure reliable electric service by tracking outages, dispatching work crews to restore service, and scheduling and coordinating planned outage restoration work.

Working 12-hour shifts, operators also de-energize live circuits and substations so maintenance and repair work can be performed safely. With overtime, their salaries can range from \$80,000 to \$140,000 per year at a public power utility.

“In a lot of ways, control center operators are the middlemen who interact with a lot of other departments, including engineering, metering, customer service and field crews,”





said Roger George, who has three decades of experience as a power system coordinator at Keys Energy Services (KEYS), which provides electric service to nearly 33,000 customers.

“The control center is involved in numerous processes that support reliable electric service,” he continued. “Generally, a work order begins with a phone call or email to the control center requesting a type of service, such as a disconnection, service upgrade or new service connection. The control center creates a work order and sends it to the engineering department to perform an inspection. Once engineering completes its inspection, it notifies the control center, which then assigns the line department to perform initial electric line connection work. Once line connection completes its work and notifies the control center, the work order goes to the metering department to install a meter. Once the meter is installed, metering notifies the control center, and the ticket is closed, signifying that work is complete.

“You could think of the control center as the metaphorical ham in the sandwich.”

Life in the Control Center

We asked control center officials at three utilities — KEYS, Lake Worth Beach Utilities and Lakeland Electric — about their mission and how they spend their days.

They agreed that an operator’s mission is threefold: maintaining a reliable flow of electricity, minimizing outages by scheduling proactive maintenance on the electric system

and coordinating with field crews as they do their work to keep the electric system reliable, summarized George. He emphasized that over all those goals is the need to operate safely.

“When a pole is down, our first priority is to ensure the safety of personnel and customers,” commented Jason Bailey, assistant director of electric system operations at Lake Worth Beach Utilities, which provides electric service to about 27,700 customers. “Then we can focus on rerouting of power.”

Bailey has 21 years of experience at that utility’s control center.

Life tends to be binary for control center operators: Either nothing is happening on the electric system that requires their attention, in which case they perform various other tasks, or operators are actively responding to events in the field, such as a storm and outages.

“We spend a lot of time developing contingency plans and switching orders to route power around construction activities and maintenance outages,” said Ed Liberty, electric utility director at Lake Worth Beach Utilities, which is performing a lot of work to upgrade and harden its electric system. “We identify contingencies that need to be addressed and sequenced before construction can start.

“If there’s a problem that pushes you out of your normal configuration,” he continued,

“you need to make sure the backup is ready to be put in place and ideally yet another contingency that you can fall back to. We are spending millions of dollars to improve reliability through not only hardening the system, but also installing equipment that improves our contingency capability.”

Each 12-hour shift begins with oncoming operators getting a briefing from the operators who are about to end their shift. What happened on the prior shift that oncoming operators need to know about? Oncoming operators then do a walk-through of the control center to ensure everything is in order. After that, they log into the secure network system to check on switching orders stemming from scheduled maintenance projects that day.

From there, operators must be ready to perform a variety of tasks, including dispatching work crews to outages, participating in planning meetings or turning off automatic reclosers so crews can safely work on equipment or taking customer calls.

“You’d be surprised how many customers calls come into the control center,” said George.

Lake Worth Beach Gets a New Operations Center

One thing control center dispatchers at Lake Worth Beach won't have to worry about is whether their building will be safe to work in during a severe hurricane.

"With the new operations center, we no longer have to worry if the building will come down in a storm," said Jason Bailey, assistant director of electric system operations. "Our old center, which was built in the 1970s, was only rated to withstand a Category 2 hurricane, where winds reach about 110 miles per hour. When the wind is blowing over 100 mph, you don't want to wonder if the operations center will collapse. That was a real concern during Hurricane Wilma, a Category 5 storm that hit in 2005."

The utility inaugurated its new Electric Systems Operations Control Center in early 2024. Built over two years at a cost of about \$400,000, the new building houses the utility's new SCADA and outage management system. It is rated for a Category 5 hurricane.

"Now we have one less thing to worry about during a storm," commented Bailey.

"At night, for example, when customers are out walking their dog and they notice a line is down or a streetlight is out, they call us to report it," he said. He estimated KEYS gets about a dozen calls from customers every night. "If they're not reporting a line is down or a streetlight is out, they are calling with questions about their bills."

"We're here monitoring the system 24/7," commented Pickles, who has about 13 years of experience in that utility's control center. "With our outage management system, we see outages immediately, even before the customer does. If customers experience an outage when the contact center is closed, the call gets routed to the control center. We thank the customer for reporting an outage and assure them that the outage restoration process is underway."

When not fielding customer calls, participating in planning meetings or tracking outages, control center operators spend time updating the system diagram, an up-to-date, digital representation of the electric system. "Those diagrams need to be 100 percent correct and

100 percent current 100 percent of the time to protect our line workers," said Bailey.

Many of these system diagram updates involve updating or writing a new page for the SCADA system. Those updates keep the SCADA system current on all work done to the system.

Control center operators do not operate power plants or engage in power trading, but they are deeply involved in planning any construction work that could involve the electric system. "We want to be sure we don't inadvertently paint ourselves into a corner," said Liberty. "We need to make sure the construction team knows about high-failure circuits to make sure they don't create islands when they add a new circuit."

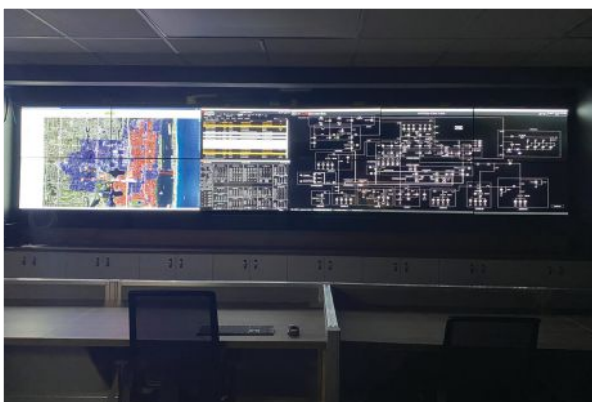
If a utility is undergoing system hardening work, like KEYS and Lake Worth Beach Utilities are, system operators need to turn off some automated equipment, such as reclosers, so that equipment is not tripped by the construction work.

For those accustomed to working an eight-hour, 9-5 job, KEYS' George said, it can take a couple of years to acclimate to 12-hour shifts that alternate between day shift (7 a.m.-7 p.m.) and night shift (7 p.m.-7 a.m.). "Working a 12-hour shift can affect your cognitive and body functions," he said. "It affects how you eat and how you sleep. Going to bed at 7 a.m. after working the night shift doesn't come easily, at least at first."

What Worries Control Center Operators?

Because they operate at the nexus of so many critical functions in a utility, control center dispatchers worry about a lot of things, including worker and customer safety, storms, outages, the integrity of aging equipment, the integration of renewable energy and energy storage into the grid, and the economics of performing preventative maintenance on the system.

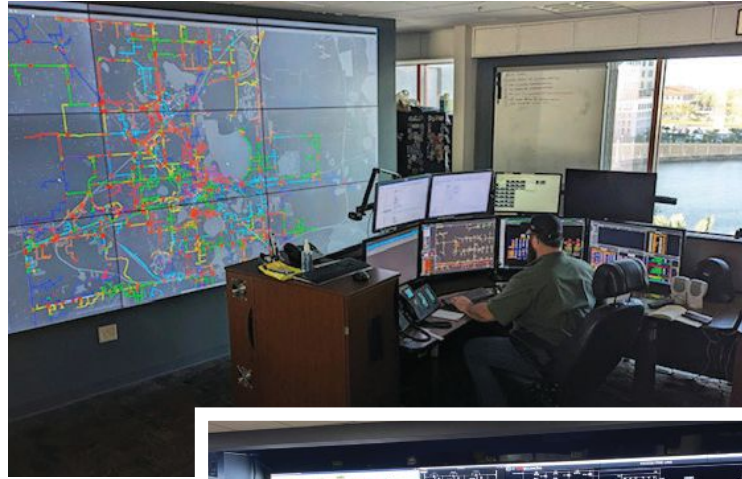
There are other concerns as well: whether generators will continue operating during heat waves, getting enough sleep before their shift, and whether all the renewable electric



generation that is coming online in Florida will create times when renewable generation is exceeding demand during some hours of the day. But as demand rises in the late afternoons, renewable generation tapers off, creating potential supply-demand imbalances.

In addition to all of those concerns, one operator is convinced his building is haunted. "In the middle of the night, I have heard sounds I should not be hearing: toilets flushing at 4 a.m., lights going on and off for no reason, voices in the next room," said the operator, who asked to remain anonymous for this part of the interview.

Control center operators are proud of the work they do, directing traffic on the electric grid. Their work goes to the heart of utilities providing reliable electric service to customers. As the industry changes and tasks are increasingly automated, operators see their decision-making as a critical skill that seems unlikely to be matched by artificial intelligence. ■



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