

CUSTOMER

FALL 2018

# Circuit

WESTERN AREA POWER ADMINISTRATION

## Year in review

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## Adapting to change, moving forward

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## LETTER FROM THE CAO

By Tracey Lebeau

It is often the case that customers and employees rarely think about WAPA administrative services until they need them, but when they do, they expect them to work. Critical mission support services ranging from environmental programs to contracting to hiring are the quiet and steady hum of the organizational machine that drives our round-the-clock mission to deliver hydropower to the energy frontier.

This year, WAPA leaders and staff came together to look at new ways to more efficiently align mission support services to better address our needs, challenges and opportunities. As a result, at the beginning of fiscal year 2019, we realigned our current support and cross-cutting programs – including Environment, Realty, Procurement, the Transmission Infrastructure Program, Records Management, Facilities, Fleet, Inventory, and Economic Impact and Diversity – into a new Office of the Chief Administrative Officer. The realignment which did not increase staffing, will foster greater collaboration, increase the effectiveness of our efforts and focus our performance on serving the mission and the public.

Earlier this year, the President's Management Agenda set forth three focus areas for federal agencies:

- **Mission** and ensuring agencies have the necessary tools and resources to deliver on their mission
- **Service** to the public
- **Stewardship** of taxpayer funds

The realignment positions WAPA to address these challenges, and in some cases, innovation has already begun in these focus areas.

We are employing purchasing data to support strategic sourcing, consolidating product and service purchases with other agencies—also known as category management—and using innovative contracting tools to more effectively manage overall spending. A cross-functional team is currently piloting a category management contract for IT equipment.

We recently kicked off an organizationwide records management effort that is absolutely necessary to securely manage, maintain, use and retain our records. Protecting our information is not just a security and compliance issue but a real opportunity to leverage IT systems and honor the historic documentation in our care.

As part of the Federal Permitting Improvement Steering Council, we are collaborating with other federal agencies to develop leading practices for the environmental review and authorization of federal infrastructure projects. The council was created in 2015 to improve the timeliness, predictability and transparency of the process.

We continue to invest in our people with a new emphasis on training and development. This will ensure that employees are prepared to carry our core values and dedication to service into the future.

We are proud of these innovative efforts. It is important to note they are less about changing WAPA's administrative services than they are about finding new efficiencies. We remain committed to ensuring services work seamlessly when needed and keeping pace with our customers' needs.

# WAPA welcomes 57th hydroelectric powerplant

By Lisa Meiman

**W**APA officially welcomed Olmsted Powerplant as the 57th hydropower plant in its system and the newest addition to the Colorado River Storage Project at a Sept. 19 dedication ceremony in Orem, Utah.

Olmsted is expected to produce an average of more than 27 million kilowatt-hours of clean, renewable hydropower per year, enough to power more than 2,500 homes.

“Olmsted represents our history and our future in a single instance, and I am excited that WAPA was able to play a part in the effort to make the old new again,” said Senior Vice President and CRSP Management Center Manager Steve Johnson.

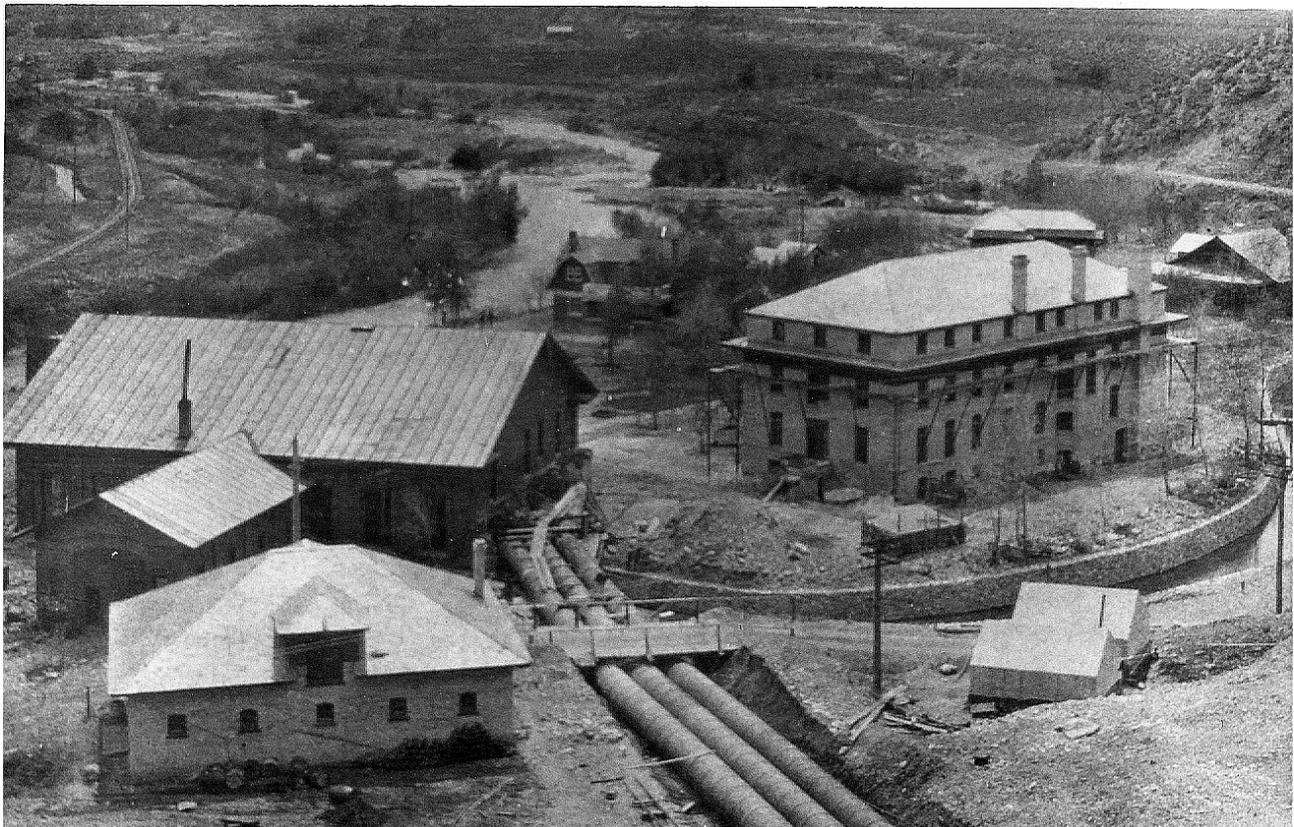
Originally built in 1910, Olmsted was one of the first alternating-current hydroelectric powerplants in the world and is listed on the National Register of Historic Places. Entrepreneur Lucien Nunn and his engineer brother, Paul, were the men behind developing AC hydroelectric powerplants for commercial and industrial use. That includes financing the construction of Olmsted

as well as the first-ever AC hydroelectric powerplant called Ames near Telluride, Colorado.

“I think the Nunn brothers would be proud of what has been accomplished at Olmsted,” said Administrator and CEO Mark A. Gabriel. “The proof behind their brilliance and innovation is there. If you compare the technology used in today’s generators with the ones in the old powerplant, the fundamental technology behind hydroelectric generators has not changed in more than 100 years.”

The plant was operated by PacifiCorp until 2015. The government obtained the plant and associated water rights under the provisions of an eminent domain settlement agreement signed 25 years ago. The original plant could no longer operate safely or efficiently, so public and private stakeholders came together to build a replacement generation facility. The facility was mostly funded by the Central Utah Water Conservancy District, which will operate and maintain the plant. Ownership will remain with the Department of Interior, which also helped fund the new powerplant.

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The newest addition to the Colorado River Storage Project is one of the oldest hydropower generation facilities in the western United States. (Photo courtesy of Olmsted Hydropower)



The Central Utah Water Conservancy District operates and maintains the federal facility, and WAPA markets the power it produces. (Photo by Teresa Waugh)

Construction was completed on a new run-of-the-river powerplant in summer 2018 to distribute water from Jordanelle Reservoir and generate hydropower for citizens in Utah. The original powerplant will be made into a museum.

“This is the next level of engineering,” said Timothy R. Petty, assistant secretary for water and science at the U.S. Department of Interior. “Hydropower is unique for communities. It represents a unique partnership between the federal government, the state and local [organizations] to really accomplish [what is needed] for the communities.”

“It’s not an easy thing to do to take power and plug it into a grid,” added Gary Winterton, Provo Municipal Council chairman. “Olmsted is a unique and wonderful place.”

CRSP MC embarked on a public process led by Public Utilities Specialist Lyle Johnson in 2016 to develop a power marketing plan and power contracts for the new plant that serves seven Utah counties, where more than 2.3 million people live. The project is a “take-all, pay-all” project, which means that customers receive a percentage of the generation and are responsible for paying a proportional share of annual and capital costs.

## “THIS IS ONE OF THE GREATEST THINGS I HAVE DONE IN MY CAREER. YOU JUST DON’T SEE MANY NEW HYDROPOWER PLANTS COMING ONLINE.”

On Sept. 5, CRSP MC published its final allocations of power in the *Federal Register*. The Central Utah Water Conservancy District, as operator and financier of the new powerplant, will receive 30 percent of the plant’s output, as will Utah Municipal Power Agency in consideration for its efforts in securing the necessary arrangements to deliver the power. The remaining 40 percent

is split equally among four existing CRSP MC customers who had received less than 10 percent of their electrical needs from federal hydropower before Olmsted came online: Lehi, Kaysville, Springville and the Weber Basin Water Conservancy District.

“This is one of the greatest things I have done in my career,” said Johnson. “You just don’t see many new hydropower plants coming online.”

“We at WAPA are honored to play a part in this historic story of Olmsted Powerplant and to gain new partners and colleagues in our mission to power the energy frontier and provide affordable, reliable and renewable energy to millions of Americans in Utah and the West,” said Gabriel. □

*Note: Meiman is a public affairs specialist.*



# OAM takes early steps to prepare for organized markets

By Jen Neville

**R**ecognizing that organized markets—regional transmission organizations and energy markets—are expanding to the West, we at WAPA are proactively preparing our staff for working with, and in, markets. To ensure we maintain the efficiency of our operations, WAPA launched its Organizational Approach to Markets in 2016 to realign our resources, clarify our processes and streamline our systems.

The initiative tasks a cross-functional team of WAPA employees with implementing internal changes needed to maintain flexibility in the new environment. “We are evaluating our internal efforts relative to market scenarios and increasing our efficiency,” said OAM Project Manager Amy Cutler. “The efficiencies will translate to cost savings for our customers.”

The team identified 12 actions to implement over the next two years and 10 more actions to be reevaluated in 2022.

## Early achievements

The OAM project team has made significant strides toward implementing decisions spelled out in the project charter signed in June, and has already implemented several decisions:

- Verified Reliability desk is now in Upper Great Plains to combine generation and scheduling functions
- Reduced the need for oversight of Rocky Mountain’s Transmission Scheduling System
- Reviewed the position description for real-time engineers

In addition, Settlements staff in Desert Southwest and Sierra Nevada partnered with Information Technology to identify a future opportunity to streamline California Independent System Operator settlements management when the system is upgraded. For now, the current process is the most cost-effective way of handling CAISO settlements.

## Progress in the making

In the first quarter of fiscal year 2019, WAPA will reorganize and realign a few power marketing functions, including:

- Standardizing reporting for the Energy Management and Marketing Office under the regional vice president of Power Marketing. This reorganization

affects both DSW and the Colorado River Storage Project Management Center

- Aligning Settlements under the vice president of Power Marketing. This realignment affects CRSP MC, DSW and RM

Although power marketing is making these internal adjustments, WAPA will continue to provide customers with the same high-quality service they have always received.

“All of our accomplishments this year have been small alignments to be more efficient and resilient in the changing market environment,” Cutler explained.

## On the horizon

In FY 2019, the OAM implementation project team will work with Operations and Power Marketing staff to ensure they are tracking and communicating market-related activities with each other.

The success of WAPA’s regional marketing plans depends on effective collaboration and communication among these groups. Organized market environments will require even greater coordination.

## The big picture

OAM is about timing and preparedness. It is similar to hikers ensuring they are in good shape, have all the necessary gear and are mentally prepared for the upcoming journey.

In the same vein, organized markets are developing on the edges of the West, and WAPA needs to be in good shape to work with markets and make adjustments when it participates in different markets.

“If not implemented now,” emphasized Cutler, “the OAM decisions could compound the changes needed when markets develop, putting undue strain on our employees and resources.”

OAM helps ensure WAPA is well positioned to address any market initiatives on the horizon, as well as to help its customers do the same. □

*Note: Neville is a public affairs specialist.*

# WAPA expands transparency efforts in 2018

**C**ustomers who know how to ask hard questions about operations, recognize problems and contribute to solutions are critical resources for any organization, especially in the rapidly changing electricity industry. WAPA has always been committed to sharing information with customers that will help them understand our business decisions and provide us with valuable input.

## Online answers

Launching The Source in 2016 brought WAPA's transparency efforts into the electronic age. The website has averaged around 5,000 visitors annually from its beginning, indicating a strong curiosity about the challenges and costs of delivering hydropower and transmission services.

WAPA's response to this desire for knowledge was to expand The Source in 2018 to include a decade's worth of financial information related to WAPA's operations. In an effort that spanned several months, WAPA partnered with congressional representatives as well as customers to determine what information would best help them understand cost drivers and expenditures.

The added data from Oct. 1, 2007-Sept. 30, 2017 includes:

- Rates and sales data by power system
- Federal full-time equivalents
- Regional and Headquarters expenditures
- Capital investments by project

Also included on the site is the unobligated reserve balance strategy for fiscal years 2016 through 2020 and the most recent year-end balances.

Visitors will also find a how-to guide and an introductory narrative to help them locate, understand and interpret the data. Both were developed to help users better understand the information and offer up-front answers to expected questions.

"We will refresh this data annually for years to come as we continue to improve our collaborative transparency efforts with customers," said Senior Vice President and Chief Financial Officer Dennis Sullivan.

## Input, in person

The answers to our customers' questions do not always come from numbers. In 2018, WAPA strived to create more opportunities for dialogue with customers around the issues that most concern them.



**WAPA Administrator and CEO Mark A. Gabriel discusses cybersecurity with Sergio Caltigirone of Dragos, Inc. and Tim Pospisil of Nebraska Public Power District who were panelists at the Technology and Security Symposium in August. (Staff photo)**

The Technology and Security Symposium WAPA hosted Aug. 21 brought customers to its Lakewood, Colorado, headquarters to learn about the steps being taken to protect physical and cyber infrastructure. WAPA managers described security and asset management programs and joined industry experts to share leading practices and answer customers' questions.

For the first time this year, WAPA invited customers to attend the review of the HQ budget formulation during the annual customer meeting. Customers and representatives from their membership learned about details of various projects from subject matter experts. Following the presentations, breakout roundtable discussions on Power Management and Marketing, Supervisory Control and Data Acquisition and Lifecycle Management gave attendees the chance to ask questions and share insights.

The success of these events made it clear that customers want to engage with WAPA's business processes and share information about their organization's challenges. Encouraging customers to contribute their own expertise to critical discussions follows WAPA's Strategic Roadmap's critical pathway of Business, Technology and Organizational Excellence. In the coming year, WAPA will continue to evolve its transparency efforts with customers, other Executive Branch agencies and members of Congress.

"Transparency is integral to business, technology and organizational excellence and our refreshed core values," said Administrator and CEO Mark A. Gabriel. "We look forward to further communicating with our customers to meet their needs in the energy frontier." □



## WAPA prepares move to new reliability coordinators

**O**ne of the most pressing decisions WAPA made in 2018 was the selection of new reliability coordinators, to replace Peak RC when it ceases operations in December 2019. WAPA announced the selection of Southwest Power Pool and California Independent System Operator Sept. 4.

Beginning in late 2019, SPP will begin providing RC services to WAPA's Western Area Upper Great Plains West, Western Area Colorado Missouri and Western Area Lower Colorado balancing authorities, and the associated transmission operators.

The Sierra Nevada region, a transmission operator within the Balancing Authority of Northern California, will accept RC services from the CAISO following BANC's schedule, which is expected in mid-to-late 2019.

### Fulfilling crucial function

The RCs oversee transmission operations and potential areas of congestion or instability across multiple BAs or transmission operators within a geographic region.

Maintaining reliability requires a wide view of the bulk electric system that may be beyond the awareness of individual transmission operators. The RC's scope enables it to prevent or mitigate emergency operations and to provide leadership in system restoration following a major event. The North American Electric Reliability Corporation requires BAs and transmission operators like WAPA to have an RC.

### Complex choices

Early in 2018, CAISO, which funds about 30 percent of Peak's revenue requirements, announced that it would be creating its own RC and withdrawing from Peak in September 2019. This decision led to questions about Peak being able to continue operation beyond the end of 2019. Peak determined that it would wind down and cease operations by December 2019.

These announcements pushed WAPA to begin evaluating alternatives for RC service.

Providing RC services for itself and other entities was briefly under consideration, but WAPA concluded that time and resources were too short to do it effectively.

WAPA's regional offices and Colorado River Storage Project Management Center looked at many factors before reaching a decision. The choice of SPP was consistent with the strategic and tactical goals of the Rocky Mountain and Desert Southwest regions. Working with a single RC will protect the gains in safety, security and reliability those regions have made through consolidating operations. The Upper Great Plains region already receives RC services from SPP in the Eastern Interconnection and anticipates the same high-quality services in the Western Interconnection.

As a transmission operator in the BANC, WAPA's Sierra Nevada region selected CAISO RC as its preferred option. NERC requires that there be only one RC per balancing authority, so SN must follow BANC into the CAISO RC.

The transition to the new RCs is contingent on SPP and CAISO becoming certified as RC providers in the Western Interconnection. Both entities have submitted their applications to the Western Electricity Coordinating Council.

### No change for customers

Customers will notice no difference in RC services as WAPA switches from Peak to SPP and CAISO. "WAPA, in collaboration with other utilities across the Western Interconnection, is committed to maintaining reliable, safe, secure and compliant operation of the grid," said Executive Vice President and Chief Operating Officer Kevin Howard. "We will work with neighboring utilities to ensure an orderly transition to the SPP and CAISO RCs as Peak winds down its operations in 2019." □



At its height, the Carr Fire forced WAPA to take six substations, 15 transmission lines and 13 hydroelectric units out of service. Despite this, WAPA continued to provide service to communities, and for a few days, was the only power provider capable of doing so. (Staff photo)

## Crews restore power during historic blaze

By Travis Weger

**T**he Carr Fire began July 23 in northern California began. CNN reports that the fire began as the result of a flat tire on a trailer. The motorist continued driving and the trailer's rim scraped the asphalt, sending sparks into the nearby dry brush. High temperatures and extreme drought conditions made this particularly worrisome, and the blaze speedily grew to uncontrollable proportions.

It ultimately became the seventh-most-destructive wild-fire in California's history, threatening many transmission lines and customers in the Sierra Nevada region. WAPA employees responded to disaster.

### Unified response

The fire quickly reached Trinity County and the southern part of Shasta County.

As the disaster response was kicking off for WAPA, an incident management structure was stood up with the emergency operations centers at Headquarters and the SN regional office in Folsom, California.

WAPA crews came together in a unified response consisting of craft, technical and support personnel across WAPA in Headquarters and Sierra Nevada region.

"The people on the front lines are in the most stressful situations," said Executive Vice President and Chief Operating Officer Kevin Howard. "Our goal was to establish a support network where we could help them with what they needed, so it really required a very broad team to pull together to help with the fire."

Safety was a main concern of the Dispatch team in Folsom, so they took quick action to de-energize the lines and allow firefighters and WAPA crews in the area to work safely.

"The Carr Fire didn't impact our facilities immediately," said Supervisory Power System Dispatcher Christine Henry. "We started seeing impacts as the fire raged out of control the evening of July 26. We had a dozen or so lines that evening relay out of service."

As the fire grew, fiber on the lines was damaged, leaving Dispatch blind to what was happening to the system. Henry described the situation as driving down the freeway while blindfolded. With no remote access, their only option was to send personnel to substations to perform switching manually.

Electricians were sent to individual substations to act as the eyes, ears and hands of the dispatchers. This created

additional work in an already hazardous situation, not only adding time to switching but taking personnel out of action when they could be providing assistance in other areas.

Communication needed to be reestablished with the substations to restore control over the system to dispatchers.

"I was on leave when I got a call saying they needed me up in Redding," said Foreman III Electronic Integrated Systems Mechanic Leader Daryl Rictor. "We got through all the National Guard fire checkpoints to Keswick Substation. When we got there, we saw a lot of alarms and started working right away."

Rictor and two other communications technicians worked to get three substations back online. They arrived on the scene, analyzed what needed to be done and worked through the night and weekend to get the systems back online. Dispatchers then took control and the electricians evacuated the substations.

"We go through the annual exercises, but during the real issue your adrenaline is pumping a lot more," said Rictor. "It was very interesting and surreal to go through some of those areas. Driving through National Guard checkpoints to get to a substation, there's not a lot of smiling and waving. It was sad and interesting at the same time."

## Carr Fire by the numbers

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**Affected area**  
**229,651 acres**

**Buildings destroyed**  
**1,604**

**Evacuations**  
**38,000**

**Injuries**  
**11**

**Deaths**  
**8**



## Protecting the power

WAPA line crews worked closely with the Bureau of Reclamation, ensuring generating units were online and providing power to keep Trinity County energized.

WAPA has a radial feed for Trinity County, and if the fire had destroyed the Trinity-Carr 230-kilovolt line that feeds Trinity Substation, it would cause all of Trinity County to lose power. The Bureau of Reclamation worked with WAPA on islanding the 60-kV line to protect Trinity's load, so the power could flow while WAPA's lines were affected by the blaze.

WAPA and the Bureau of Reclamation installed improvements recently at Trinity Powerplant that allowed the system to be islanded. This assistance allowed Trinity Public Utilities District to keep their system online.

"Several of the power restorations have depended on black-starting Trinity Powerplant," said Trinity PUD General Manager Paul Hauser. "This had never been done prior to this emergency."

WAPA moved a diesel portable generator from Maxwell Substation, which was four hours away from Weaverville, to provide station service to Trinity. While bringing the plant back online, Trinity PUD had to work directly with Reclamation over the phone to add load one half-megawatt at a time to avoid tripping the plant off.

"Having never done this before, it was much more sensitive than we imagined it would be," said Hauser. "But we ran through that routine half a dozen times now and we've gotten pretty good at it."

To island Trinity PUD, operators had to open every substation distribution circuit breaker on the system. On their more heavily loaded circuits they had to perform line reclosures and bring them back online one at a time.

The fires and various events caused eight systemwide outages for Trinity PUD, but Hauser explained that residents were incredibly supportive of the efforts to restore power.

"Without the folks at WAPA, I could not imagine what it would be like going through this," said Hauser. "This is just a tremendous partnership."

Hauser explained that he spent so much time on the phone with WAPA dispatchers that he would like to meet them in person to thank them for the work they have done.

"For as many lines as we had impacted and the size of the area, to have the system back in place within eight days, was just outstanding," said Foreman III Lineman Brian Adams.

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Linemen and leadership temporarily halt work at the Redding fire tornado site for a photo and safety discussion (Staff photo)

## Too close to home

Many of the individuals working the Carr Fire across agencies have been affected directly. Adams himself was one of several linemen on the Redding crew to have been evacuated.

"I have to give it to my employees," said Adams. "Even though a lot of them and their families are evacuated, they still show up every day for work. They know the importance of getting this line back up for our customers."

Power System Dispatcher Ray Zeller lost his house to the Carr Fire.

"When you lose your home, you lose everything," Zeller said. "We had a little time to get some things out, we got some pictures and some family heirlooms, but we ended up losing a lot more important things. Now we have very little, we have to replace all of our clothes and pretty much everything we've had throughout our entire lives."

Zeller met the firefighters who tried to save their house, and said they did everything they could to fight it.

The Zellers' friends, family and coworkers stepped up to help. Dispatchers in the Folsom office collected money for the first day he returned to work. He explained that the attitude in Folsom is that his coworkers are a family that takes care of one another, and the support they gave him really helped.

"Volunteers have come out to help us sift through the ash to find some of my wife's jewelry, other mementos and other things we had in our home," said Zeller. "The

community has stepped forward and everyone is trying to do a little bit to help all of us that have lost our homes."

## Coming together

The Carr Fire affected 229,651 acres, destroyed more than 1,000 homes and damaged nearly 300 more buildings.

After a long, difficult fight, it was 100 percent contained by Aug. 30.

"To the crews out in the field, I have to take my hat off to them," said Howard. "This experience has confirmed to me once again that we have the best people in all of government, and we are committed always to serving like our lights depend on it."

The dedication of the crews from WAPA and other organizations was not overlooked; there was a spirit of teamwork in the air, and the knowledge that everybody was working together toward an important goal.

Administrator and CEO Mark A. Gabriel echoed Howard's sentiment.

"We cannot predict tragedies such as this one," he said, "but time and again our dedicated crews have proven they will rise to meet them. I could not possibly be more proud of the selflessness and devotion demonstrated by WAPA employees in the most difficult of situations. Your incredible response here and elsewhere has not gone unrecognized." □

*Note: Weger is a public affairs specialist.*



## WAPA core values: Be curious, learn more, do better. Repeat.

By Mike McElhany

**Editor's note:** An organization's core values serve as a guide for its business decisions and as a standard for behaviors and actions. In 2018, WAPA rolled out the first update of its core values since 1993. WAPA employees contributed to the process of determining and codifying the standards, so it is not surprising that an employee might express an affinity for a particular value. Mike McElhany, WAPA's senior vice president and Rocky Mountain regional manager, shares what one core value means to him.

**T**his is the core value that most resonates with me on a personal level, and it has been a fundamental blueprint for me during my 33 years with WAPA.

I have been fortunate enough to have had many opportunities throughout my career to transition into positions for which I was not a subject matter expert. Being curious, learning more, doing better and repeating has been a successful formula for me in these situations.

One year ago, on my first day in the Rocky Mountain region, I told the staff I was going to challenge them. Not that I was going to be difficult, but that I was going to ask why, why, why, why not and why.

Although we had not yet refreshed WAPA's core values, I was already exercising my curiosity to learn more and ultimately do better.

Why is this core value so important? I believe that being curious, learning more, doing better and repeating supplements the critical pathways of *Strategic Roadmap 2024*. Curiosity fuels the Evolution of Services; Mutually Beneficial Partnerships are realized by learning more; and the goal of Business, Technology, and Organizational Excellence is to do better. The root of this core value is understanding. Curiosity is fundamental to ensure a common understanding.

Understanding is fundamental to learning. Understanding what we do, how we do it and why we do it is fundamental to doing better. Innovation is dependent on all three.

WAPA has implemented several initiatives that both directly support and enable this core value. Continuous Process Improvement and Asset Management are pure implementations of this core value.

Change Management is ultimately necessary to implement the activities that result from these initiatives, in order to do better.

The success of this core value is highly dependent on several things. We have to have the courage to be curious, the perseverance to learn more, the resolve to do better and the commitment to repeat. We must be courageous enough to overcome the fear that asking questions is a sign of weakness. Curiosity is an extremely powerful tool that facilitates learning. Learning is a continuous journey, and it requires perseverance to avoid the complacency that we have learned it all. Doing something different is not a measure of success; doing better requires resolve to achieve improvement. Finally, it is easy to rest on our laurels once we have done better. It takes commitment to repeat the process continuously.

That being said, this core value also requires that we create an environment that fosters these tenets in everything we do. We must be receptive to the curiosity of others and not assume that we are being judged. Opportunities for growth and learning must be supported and encouraged with a balanced understanding that the long-term return on investment far exceeds the short-term reduction in productivity.

We also need to set perspectives on doing better; it is not always the item with the greatest effort that achieves the greatest reward.

One of my favorite quotes is from Dr. Stephen Covey: "Begin with the end in mind."

If we want to do better, we should begin every day by being curious and learning more. □

*McElhany is a senior vice president and Rocky Mountain regional manager.*

# Program changes improve avenues of communication

**S**tarting in 2019, the *Customer Circuit* will be expanding to feature more in-depth news about issues that concern WAPA customers along with more stories highlighting customer utilities.

An electronic version of the *Customer Circuit* is being planned, and customers will be able to sign up to receive an email announcement when the newsletter is published. These upgrades are intended to promote greater dialogue with customers and encourage them to share their stories with each other and WAPA.

## Evolving with times

These changes have been prompted by WAPA taking a close look at its programs and initiatives to determine which ones bring the most value to customers. The goal of the evaluation is to improve business processes and ensure that resources are being put to the most effective use.

WAPA's Energy Services program and the *Energy Services Bulletin* newsletter were among the areas identified that would benefit from a refresh. As a result of the assessment, Energy Services communications have been integrated into WAPA's Public Affairs Office. This will allow the program to be part of the cohesive message about WAPA's mission and the value of the organization.

The *Energy Services Bulletin* published its final issue Nov. 1. The expanded *Customer Circuit* will continue to provide customers with stories that touch every part of utility operations, including transmission, markets, budget, finance, environment, legislation and more. The *Energy Services Bulletin* will remain active as an archive, so customers can reference past stories and reach contacts for more information about policies and programs. Subscribers will be able to transfer their subscription to *Customer Circuit*.

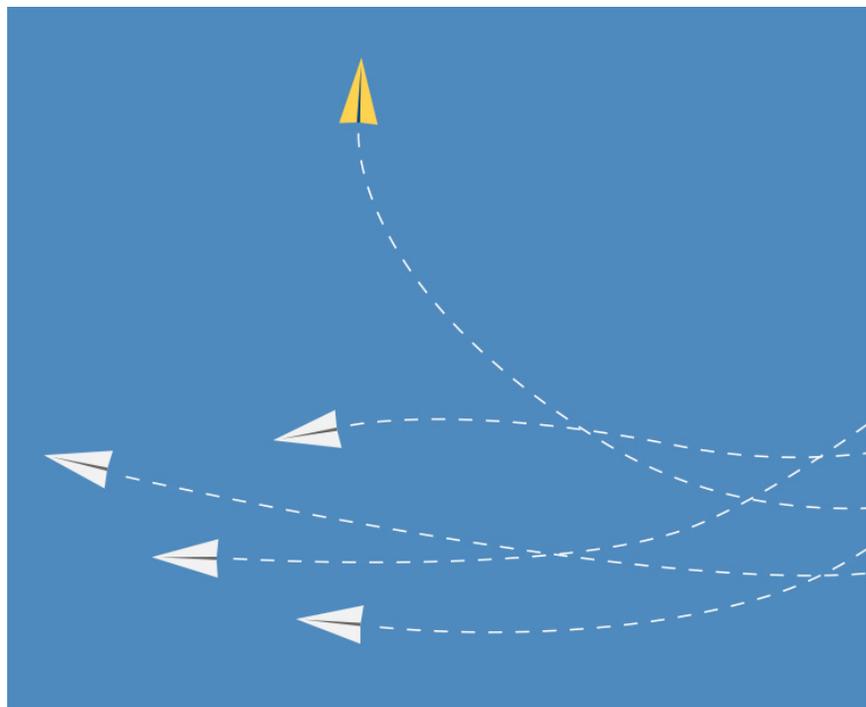
## Seeking new paths

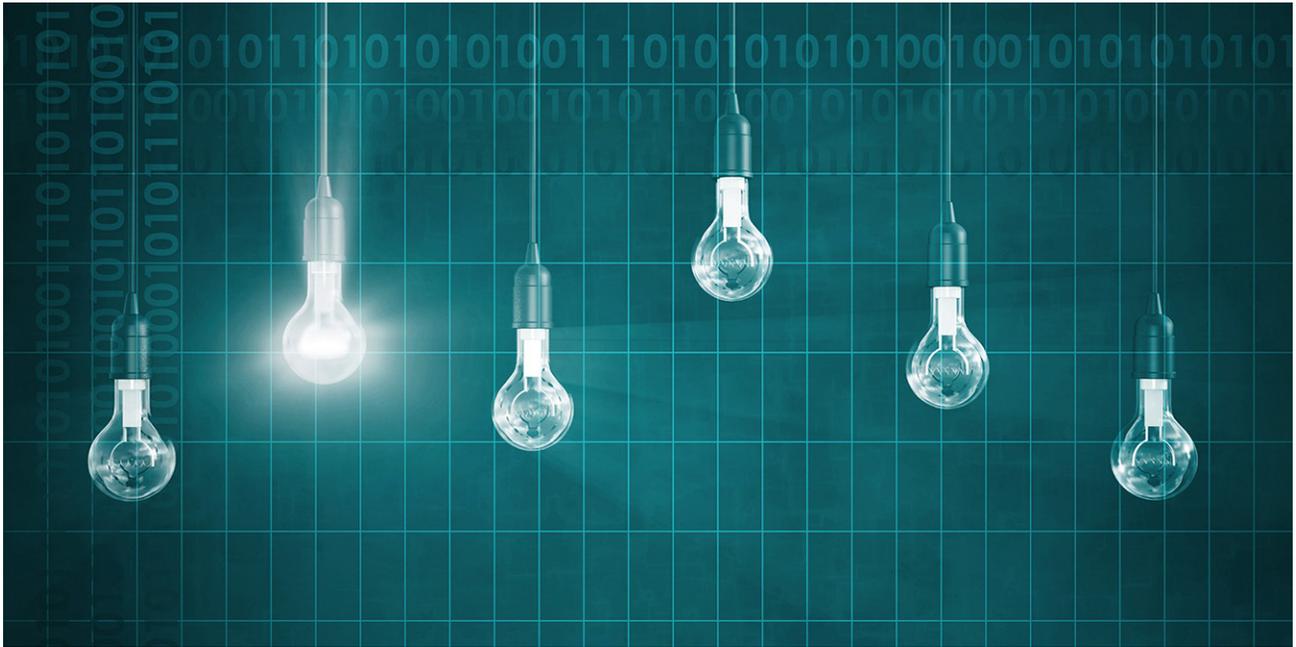
The Energy Services program will continue with some changes that will allow WAPA to determine the type of technical assistance that is best suited to the rapidly shifting business environment customers face.

Customers will continue to receive support from WAPA for their resource planning activities as they have for more than 20 years. Regional Energy Services representatives will still be available to answer questions about integrated resource planning or to suggest tools and programs that can help utilities reach their load management goals.

WAPA has always been committed to helping customers deal with both the routine and unexpected challenges of powering the West. Keeping that assistance relevant has required constant evolution over the past 40 years.

At WAPA, customers are partners and customer-facing programs and communications provide opportunities to continue to build that relationship and increase the value of its services. WAPA will continue to seek customer input on the direction of technical assistance programs and on what services that best meet their needs. Keep in touch. □





## WAPA encourages growth through training opportunities

**T**he key to success in business, as well as life, is to never stop learning. It is embedded in our core values and demonstrated by our commitment to hosting and participating in workshops, courses and symposia for both employees and customers.

WAPA was involved in several training events in 2018 that focused on helping staff and customers deal with the new realities of today's utility industry.

### Training emergency responders

Power providers face increasingly destructive storms, making the hard work of getting the lights back on afterward more complex and dangerous. Emergency Support Function #12, or ESF-12, is a group of government agencies coordinated by the Department of Energy responsible for restoring the flow of power after a disaster. Four WAPA employees participated in a summer training for ESF-12 responders, two as trainers and two as trainees.

The West Sector Initial Training, June 19-20, prepared new ESF-12 recruits to perform their duties effectively. Emergency situations in the U.S. Virgin Islands, Hawaii and California demonstrate the importance and magnitude of this job. Responders learn how to assist in producing, storing, refining, transporting, generating, transmitting, conserving, building, distributing, maintaining and controlling energy systems and system components.

The training was led by experienced ESF-12 responders who went beyond the training materials to share how

participants have applied what they learn in class in actual disaster situations.

Rotations for ESF-12 employees generally last two to three weeks. Having two more certified employees allows WAPA to increase disaster assistance with minimal impact on operations. Our trained responders look forward to doing the important job of restoring power to Americans in the wake of natural disasters and aiding recovery efforts.

### Technology, security take center stage

Knowing that physical security and cybersecurity are two top priorities of every utility, WAPA hosted the Technology and Security Symposium for power customers at its Lakewood, Colorado, Headquarters Aug. 21. Terrorist threats and an aging grid are bringing new challenges and urgency to the longstanding task of protecting and managing generating stations, transmission lines, substations and transformers. Increasing attacks on cyber assets have added a new level of complexity to security issues and have sent utilities scrambling to update their security programs.

The daylong event gave WAPA power customers the opportunity to hear from industry leaders about issues surrounding cyber and physical threats to the grid. Attendance was limited to less than 100 so that there was plenty of time in the agenda for Q&A after each presentation. Attendees came from 23 utilities, national laboratories, government organizations, industry associations and security technology companies.

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The agenda was divided into three sections—asset management, protecting physical assets and protecting cyber assets—with panelists representing WAPA, the utility industry and the security industry.

WAPA managers focused on steps the organization is taking to protect its physical and cyber infrastructure and the role asset management plays in meeting the challenge. Subject matter experts from the Department of Energy, the Electric Power Research Institute and cybersecurity firm Dragos, Inc. detailed potential threats to the grid and suggested leading practices utilities could adopt to deal with them. WAPA customers Basin Electric Power Cooperative and Nebraska Public Power District shared their approaches to threat assessment and hardening assets, as well as with lessons learned.

The strongest theme that emerged from the event is that information sharing between all stakeholders is critical to security efforts. WAPA posted presentations and resources from the symposium on The Source after the event to make them available to customers who were unable to attend.

### EPTC presents special courses

WAPA's Electric Power Training Center sought out partnerships in 2018 to provide our employees and customers with training opportunities to meet current and emerging challenges in the utility industry. One of the

greatest needs is for trainers who can keep the workforce up to speed on technology and regulatory changes and pass on leading practices to the next generation.

For example, new North American Electric Reliability Corporation standards have created an ongoing internal need to train compliance staff. WAPA brought on several new trainers in the regions to meet this need and partnered with Quality Training Systems to present a series on the Systematic Approach to Training process. Customer representatives joined WAPA staff for a course on developing comprehensive training that integrates analysis, design, development, implementation and evaluation. QTS is presenting another course at EPTC in December covering current training design and development trends.

When a WAPA employee requested training on load tap changers, the EPTC reached out to SD Myers to bring a four-day workshop to Golden, Colorado. The transformer reliability consultant offers the class Transformer Management Essentials and Load Tap Changer Principles & Maintenance throughout the world. The EPTC class is the only one scheduled in the western U.S. this year.

Partnering with outside vendors is a cost-effective way for the EPTC to expand its course offerings. More vendor classes will be scheduled at the EPTC in 2019, and WAPA welcomes suggestions for new types of training from customers. □



Students get hands-on experience with the EPTC's miniature power system in Golden, Colorado. (Photo by Travis Weger)

# WAPA efforts maximize, improve vital communications resource

**S**pectrum management—regulating the use of radio frequencies to promote efficient allocation—is critical to WAPA's core mission.

Microwave radio systems are the primary means WAPA uses for monitoring and controlling its power transmission system. Without it, power system dispatchers could not see what power loads are, they could not open and close breakers and they could not tell if power transformers were overloaded or overheating. The health of the entire power grid is seen through the data transmitted to the dispatching centers by the microwave and fiber optic systems WAPA operates.

WAPA craft personnel rely on the mobile radio system to communicate with dispatchers when constructing, maintaining or repairing power lines, substations and other facilities. The effective management of the Department of Energy radio spectrum also ensures reliable communications for the National Nuclear Security Administration, the national labs, other generating agencies, power marketing administrations and other agencies critical to our success. With so much at stake, WAPA must be

confident of operating at more than a 99.9999 percent level of reliability, which translates to about 20 seconds of outage time per year.

## Necessary in emergencies

The importance of spectrum management is never more evident than when disaster strikes, such as during the recent Carr Fire in northern California. Mobile radio systems enabled maintenance crews to communicate with each other. When portions of the infrastructure were destroyed, mobile communications allowed WAPA to set up temporary infrastructure to continue operations. This disaster response experience, along with WAPA's relief efforts in Puerto Rico and the U.S. Virgin Islands, demonstrates that mobile voice command systems are essential for emergency restoration capability.

However, the Carr Fire also identified some gaps and opportunities for improvement. The fire revealed that we need radio spectrum across the entire operations area,

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## Spectrum Relocation Fund enables innovation, flexibility in spectrum use

**C**ongress created the Spectrum Relocation Fund in 2007 to help federal agencies defray the costs of making more spectrum available for commercial use. The goal of the SRF was to open the door for commercial access to the spectrum by reimbursing agencies for costs associated with repurposing the spectrum they use in performing critical missions.

Modifying agency communications systems to use a different spectrum band or to share spectrum with commercial providers can be costly. The SRF supports the efforts of federal agencies as they work to identify 500 megahertz of additional federal and nonfederal spectrum for wireless broadband services, both licensed and unlicensed, by 2020.

In 2015, Congress made important enhancements to the SRF to broaden the scope of expenses eligible for SRF reimbursement. The Spectrum Pipeline Act enabled agencies to use funds from the SRF to pay for research and related activities that promise to increase spectrum efficiency and that may lead to repurposing of spectrum for commercial use. These modifications provided an initial \$500 million in funding as well as a mechanism to replenish the funding pool with proceeds from future auctions.

because during the fire there were areas in the service territory without complete coverage. We need to increase reliability and effectiveness of systems to support the work of our crews.

WAPA is in the process of licensing and building several mobile repeaters that can be strategically placed throughout the WAPA operating area. These repeaters will be deployed in conjunction with the replacement of our aging mobile equipment over the next couple years. The mobile repeaters will operate on frequencies that can be used across much of the country, allowing WAPA crews to support system restoration anywhere in the country.

### Finding funding to upgrade

There is a lot of demand for the wireless telecommunications spectrum for mobile voice, data, video and messaging services. In 2007, federal agencies gave up a portion of their spectrum to the Federal Communications Commission to be auctioned to Advanced Wireless Services providers. The proceeds

## THE MOBILE REPEATERS WILL OPERATE ON FREQUENCIES THAT CAN BE USED ACROSS MUCH OF THE UNITED STATES, ALLOWING WAPA CREWS TO SUPPORT SYSTEM RESTORATION ANYWHERE IN THE COUNTRY.

increasingly saturated and valuable, the DOE must stay committed to managing this vital resource so we can continue to fulfill our responsibilities to the American public and to the communities, partners and customers we serve. □

from the auction of this band were used to relocate federal users of that spectrum to alternate radio spectrum and telecommunications technologies.

Proceeds from the Spectrum Relocation Fund allowed WAPA to relocate all of the radio systems operating in the 2-gigahertz band. In effect, the AWS providers paid for WAPA to replace some of its oldest radio networks with a new hybrid radio/fiber operational telecommunication network.

In light of the growth in commercial uses of the radio spectrum – particularly mobile phones and wireless computer networks – spectrum management must remain central to our strategy and to our operations. As the radio spectrum becomes

## CUSTOMER Circuit

FALL 2018

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