

CUSTOMER **Circuit**

NOVEMBER 2015

WESTERN AREA POWER ADMINISTRATION

Flying, floating for energy frontier

Rocky Mountain Lineman *Ralph Sherrell* is transported by a helicopter, Sept. 1, to a nearby wooden H-frame structure to demonstrate his proficiency in long-line maintenance. Read the story on Page 8. (Photo by Lisa Meiman)

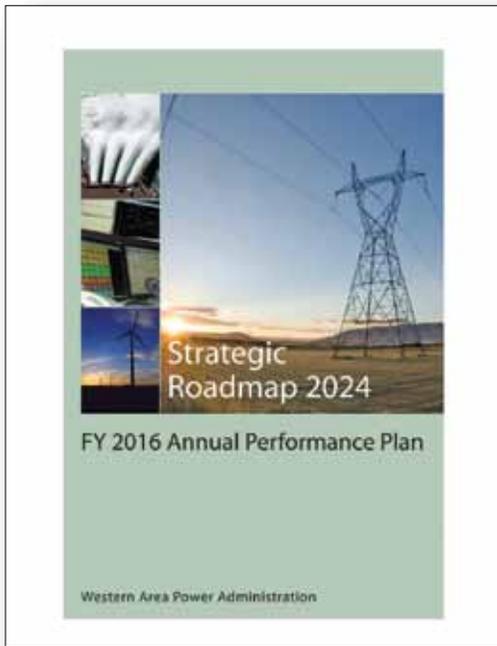
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Performance plan sets strategic measures for FY 2016

by Jen Neville

“How are we doing?”



It's a simple question that opens the door for strong and vibrant discussions about how we measure what is important. For example, when looking at a financial portfolio, it is the quantifiable answers that inform investment choices. Similarly, the Fiscal Year 2016 Annual Performance Plan outlines how we measure Western's important programs and strategic goals. It also informs our strategic direction.

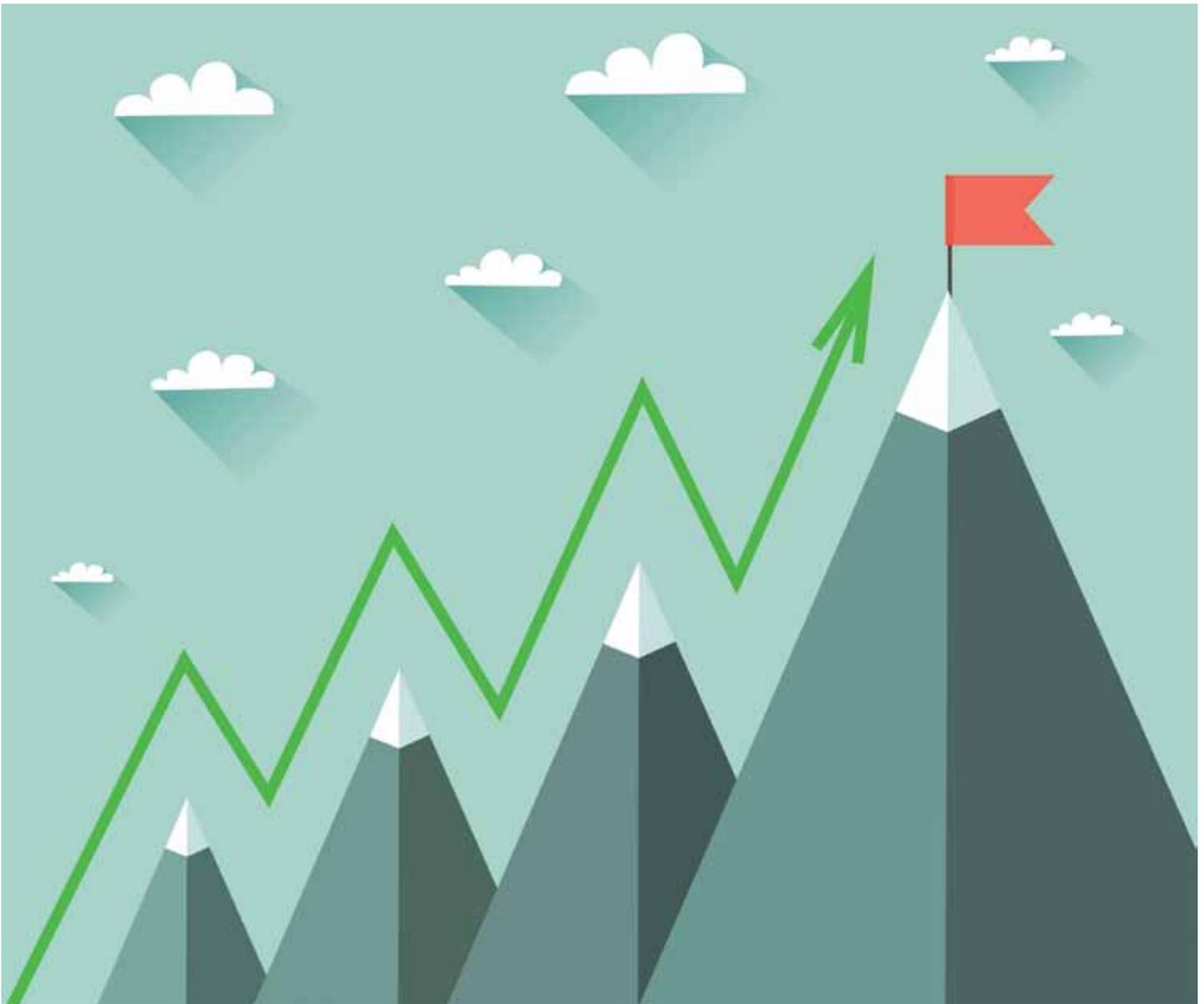
The Annual Performance Plan expands the use of calculations to quantify progress toward our *Strategic Roadmap 2024* and the annual strategic targets. “These performance measures will challenge us to sustain or improve performance,” said Western's Chief Strategy Integrator **Dennis Sullivan**. The 19 key performance indicators for FY 2016 will give Western stronger visibility as we continue to make headway on all strategic target areas.

“We have several programs, like Physical and Cyber Security, Safety and Transmission Reliability, that already have quantifiable goals in place, and that's important,” said Sullivan. “Expanding our efforts to measure all strategic targets indicates our strong commitment to seeing them through.”

Building on the 2014 Tactical Action Plan, the FY 2016 Annual Performance Plan will:

- EVOLUTION OF SERVICES
- MUTUALLY BENEFICIAL PARTNERSHIPS
- BUSINESS, TECHNOLOGY AND ORGANIZATIONAL EXCELLENCE

■ **Increase emphasis on reliability:** In FY 2015, Western reduced its accountable outages by 35 percent compared to the previous year. In FY 2016, the performance plan will build on that success with two more measures for fostering a culture of compliance and sustaining event-free operations. Together these three interrelated calculations will track the reliability of our transmission system and inform performance improvements as part of the Energy Infrastructure strategic target.



- **Strive for continuous improvement:** In FY 2015, Western's Continuous Process Improvement Program identified \$400,394 in cost avoidance through formal agency projects and employee-implemented solutions. In FY 2016, we anticipate pursuing excellence further by cultivating innovation, gathering baseline data for several new key performance indicators and tightening up our measurements in areas where we already perform well, such as Safety.
- **Incorporate customer, employee, other stakeholder thoughts:** In FY 2015, we received baseline feedback on Western as an employer through the Federal Employee Viewpoint Survey. In FY 2016, we will hold ourselves accountable for listening to and acting upon

these results, emphasizing our progress in employee engagement, inclusion, managerial communication and innovation. Additionally, Western is collecting feedback and data from customers and stakeholders to evaluate and improve our customer service, communication and transparency efforts.

More specifics on the measurements and the strategic targets they support are available in the full FY 2016 Annual Performance Plan, which is available at www.wapa.gov/About/Pages/strategic-planning.aspx. Western will track results of the plan quarterly, except for targets that are only collected annually, like the FEVS.

Your contribution supports strategy

To support the Roadmap strategic targets, critical pathways and our mission, Western

has organized and grouped the specific initiatives into portfolios. This approach increases continuity of leadership and direction over Western strategic initiatives. Although the plan summarizes the high-level assignments for FY 2016, each employee has an effect on input about Western's Roadmap and strategic vision.

Take time to review the FY 2016 Annual Performance Plan and coordinate with your supervisor to identify how your contributions will support the goals during the year.

Western's Strategy office can also provide more information and answer questions related to Western's goals and measurements, simply email your question to strategicplanning@wapa.gov. □

Note: Neville is a public affairs specialist.



JUST DO IT!

Supervisory Accountant *Justin Borsheim*, Fiscal Specialist *Fredelynn Anglo*, Supervisory Financial Analyst *Christina Hayden* and Software Developer *Rob Coubrough* have all participated in recent continuous process improvement projects. (Photo by *Jennifer Rodgers*)

Improving Western process by process

Process improvement happens every day at Western through “Just Do It” process improvements at the individual employee and small team level and through formal process improvement projects. Continuous Process Improvement Specialist **Jennifer Rodgers** said, “I am excited to share this new column in the *Closed Circuit* to showcase and recognize the efforts of employees working to improve Western processes and to share great ideas.”

Since the launch of Western’s Continuous Process Improvement program earlier this year, employees have tackled some complicated projects and yielded significant results. Here are two successes.

CRSP month-end power billing spreadsheets

To accurately bill our Colorado River Storage Project customers at the end of each month, several spreadsheets have to be completed to compile the numerous types of data and charges.

Over the past couple of years, CRSP Management Center Public Utilities Specialist **Cathy Gravestock** and Information Technology Specialist **Terry Rust** have worked to transition these spreadsheets from manual efforts to an automated effort. Recently, Gravestock and Rust worked together to make further enhancements.

Specifically, they addressed the manual data entry required to produce the billing sheets and the invoice coding sheet.

- **Solution:** The data transfer from the billing sheets and invoice coding sheet was automated.
- **Impact:** The automation saves about 66 hours per year of staff time, which results in cost avoidance of about \$2,728. Additionally, through the automated transfer, the risk of transcription error is significantly decreased.

Bulk payment batching process

After the Governmentwide Treasury Account Symbol requirements were added to Business Information Decision Support System in October 2014, processing payment files to Treasury became a labor-intensive process.

To accommodate system limitations, pay-

ment batches were divided into 60-payment bunches rather than processing all payments in a single batch. This batching process required about six hours per day to perform. Additionally, the batch payment process put personally identifiable information, or PII, at risk, as Western employees are able to view social security numbers and payment information.

- **Solution:** Supervisory Accountant **Justin Borsheim** and Supervisory Financial Analyst **Christina Hayden** led the project as Financial Systems and Fiscal Operations worked together to change the process from Secure Payment System to Payment Application Modernization format. This change allows one bulk payment file to be processed each day, which will take about one hour to perform. Additionally, the payment process has been reengineered to eliminate the ability for employees to view PII. This also eliminates an extension and replaces it with commercial off-the-shelf Oracle functionality.
- **Impact:** The elimination of about 1,300 hours of Finance staff time plus 33 hours of Information Technology project manager time, which is projected to be a cost avoidance of \$53,330 per year. It also reduces Western’s risk of compromising PII. □

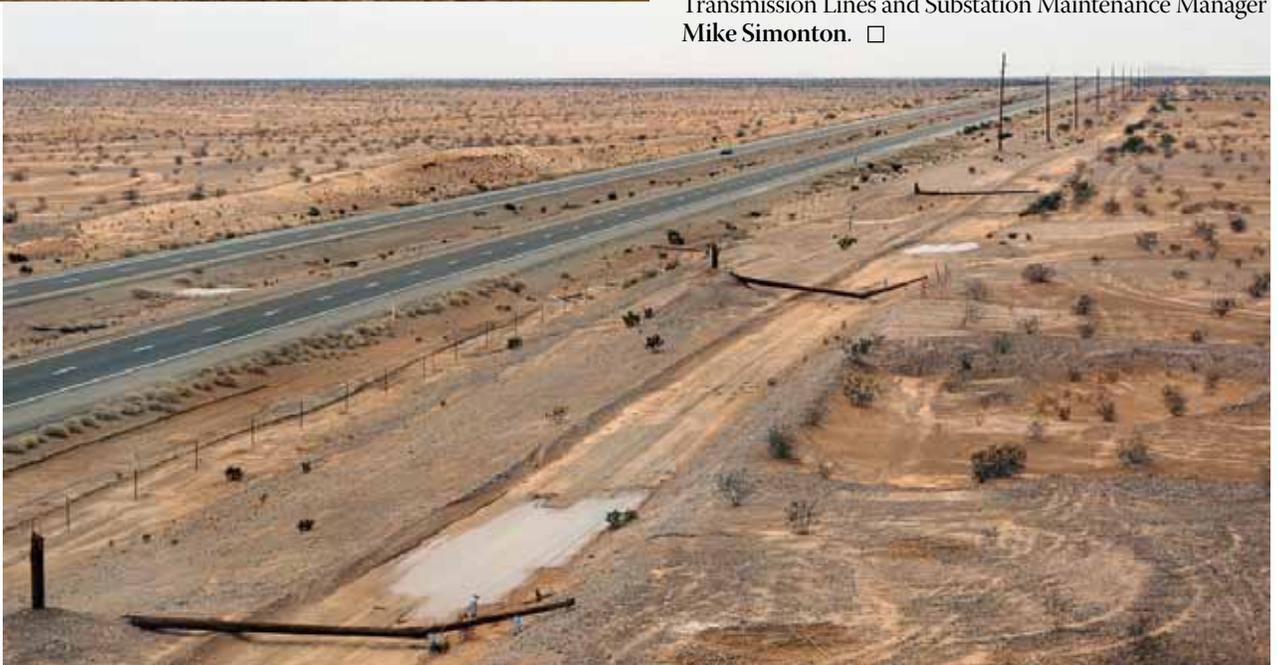
Crew repairs structures after storm

Photos by Dave Katich



Eleven wood structures on Desert Southwest's Gila-to-Sonora 69-kilovolt line were damaged or destroyed, Sept. 8, following a severe storm outside Yuma, Arizona. The storm dropped almost six inches of rain in the usually arid area. Linemen responded the next day to begin repairs, having to use tracked equipment to drag trucks through the wet sand around the line. Thanks to a redundant transmission paths, no citizens or businesses lost power due to this damage. The line was successfully re-energized, Sept. 12.

"Much appreciation to Foreman III Lineman Steve Yeats, the line crew and all support functions for expeditiously responding to this occurrence in a safe, coordinated and professional manner. I'm very impressed," said Acting Transmission Lines and Substation Maintenance Manager Mike Simonton. □



Rafting builds beneficial partnership

by Kara Lamb

A photograph of three people standing on a rocky cliff overlooking the Colorado River. The woman on the left is wearing a white bucket hat and a black tank top. The man in the middle is wearing a blue button-down shirt, a wide-brimmed hat, and sunglasses. The man on the right is wearing a grey t-shirt, a blue baseball cap, and sunglasses. The background shows a vast canyon with layered rock formations and a river winding through the bottom under a clear blue sky.

Loveland Area Projects Project Manager *Chrystal Dean*, Montrose Energy Management and Marketing Office Real-time Desk Supervisor *Tim Vigil*, Attorney-Advisor *Adam Arellano* and Colorado River Storage Project Management Center Administrative Officer *Brian Sadler* stand above the Colorado River during a July 23 trip down the river hosted by tribal partners.



Every now and again, an opportunity comes along that helps bring clarity and understanding to a complicated topic. Recently, representatives from Western were able to experience the Colorado River from a new perspective: on the water with stakeholders during a tour guided by tribal partners.

“It’s hard to truly understand what the concern is from the cultural side until you have been on the river, seen the sites and heard the traditional oral stories from the tribal representatives,” said Loveland Area Projects Project Manager **Chrystal Dean**, who floated the middle Colorado River, July 21-27.

Dean experienced the Colorado River at its heart, afloat through its canyons, desert landscapes and historic monuments as part of the Integrated Tribal River Trip. Fellow Western employees Energy Management and Marketing Office Real-time Desk Supervisor **Timothy Vigil**, Attorney-Advisor **Adam Arellano** and Colorado River Storage Project Management Center Administrative Officer **Brian Sadler**, joined Dean and stakeholders of many backgrounds and perspectives to discuss each other’s interest in the management of the Colorado River and operation of Glen Canyon Dam through the Long Term Experimental and Management Plan, also known as LTEMP. They floated through the actual environment being discussed and affected: below Glen Canyon Dam into the Grand Canyon.

The trip created an opportunity to hear, first hand, the experiences and cultural history of the region as told by tribal partners. Additionally, trip attendees were able to tell Western’s story to stakeholders and decision makers, engaging in relationship building across operational, political and cultural lines.

“I attended the trip to better understand the issues being discussed during our operational planning meetings and to actually see those issues first hand. It was also very important for us to bring our energy management and marketing perspective to the group to help them better understand what we do, why we schedule Glen Canyon the way we do and why that is important for our customers,” said Dean.

The LTEMP and its accompanying Environmental Impact Statement seek to advise the Secretary of the Interior, who is the Water Master for the Lower Basin of the Colorado River, on how to best manage Glen Canyon Dam in compliance with the 1956 Colorado River Storage Project Act, the 1992 Grand Canyon Protection Act and, to some extent, the earlier 1968 Colorado River Basin Protection Act. Although the Bureau of Reclamation owns and operates Glen Canyon Dam and its powerplant, Western schedules the

hydropower facility’s power generation and markets it to preference customers. In turn, some of the revenues from the power program support the environmental work being done up and down the river system.

“It was really eye opening to find out just how misunderstood the energy management and marketing function is,” said Dean. “The four of us who were representing Western spent a good deal of time just explaining the basics of a power system and what ‘reliable operation’ means. I think the general idea out there was that we are just out to make money; it took some time to dismantle that perception. From the beginning, power has played an important role in the Colorado River Storage Project and I think we did a good job continuing to share that message.”

Of course it wasn’t all business, but every moment counted. “It was really great to see the atmosphere of collaboration and teamwork come together so effortlessly among all the stakeholders,” recalled Dean. “Creating lines to load and unload the rafts each day, taking someone’s plate to wash after dinner for them, helping carry someone’s cot across the beach or helping people on and off the rafts came naturally and created a bond that is hard to recreate elsewhere.”

“The opportunity to have CRSP staff share this river experience with other stakeholders that participate in the Glen Canyon Adaptive Management Work Group, which sponsored this trip, was a terrific chance for them to share experiences and messages,” said Senior Vice President and CRSP Management Center Manager **Lynn Jeka**. “CRSP has more than 50 tribal customers, almost one-third of our customer base, so the cultural ties are very important to us. CRSP is continually working to inform stakeholders on our mission and perspective. Tim, Chrystal, Adam and Brian did a wonderful job explaining our mission, building new relationships and enhancing established ones, a crucial part of maintaining mutually beneficial partnerships.”

Dean agreed. “Building friendships, getting to know people on a much more personal level will only help us in the continued discussions regarding best practices for operating Glen Canyon Dam. It was truly the experience of a lifetime—and not long enough!” □

Note: Lamb is a public affairs specialist.



Closer to Superman

Rocky Mountain linemen learn to fly using long-line maintenance

Rocky Mountain Lineman *Troy Jole* maneuvers his equipment bag into position before unhooking it from the helicopter's long line. The linemen replaced overhead groundwire and fiber hardware outside Laramie, Wyoming, Sept. 2.



Story and photos by Lisa Meiman

It's like riding a roller coaster, except your stomach stays where it belongs. It's like skydiving, but without the plummeting. It's like those amusement park rides with the swings, minus the dizzying circles. It's like base jumping most of all, or so I hear, but considerably safer.



Sierra Nevada Lineman **James Hill** reviews the equipment used to transport linemen dangling from a helicopter for long-line maintenance work, Sept. 1. SN linemen trained Rocky Mountain linemen on these procedures in the classroom and then went to nearby wooden H-frame structures to demonstrate their proficiency and comfort with the technique.

In short, flying under a helicopter from a long line is unlike anything else.

The week of Aug. 31, about 25 Rocky Mountain linemen attended a day-long training followed by a two-day field trial in Laramie, Wyoming, to see if using helicopter long-line maintenance will become RM's newest technique for transmission work.

"We are here to introduce another tool to get the job done," said RM Foreman III Lineman **Ed Hunt** at the classroom training, Sept. 1. "There are environmental benefits and can be cost savings. We are going to compare doing a job with the helicopter and with bucket trucks and see what happens."

Sierra Nevada linemen gave the training, having used long-line maintenance for years to make repairs and install equipment on lines in the rugged and environmentally sensitive California landscape.

"We have been using long line to transi-

tion linemen to, from and between towers for about three years now," said SN Lineman **James Hill**. "It took a long time to get there. SN began using long-line maintenance about 10 years ago, starting with flying material and tools to the linemen on structures. We attended a three-day long-line training course at Pacific Gas and Electric and knew we would see benefits using that method."

After the classroom portion, which covered Western's procedures for transmission line helicopter maintenance in Chapter 19 of the *Power System Maintenance Manual*, the linemen moved to Snowy Range Substation outside Laramie to demonstrate they understood the procedures. Linemen used the long-line method to fly to a wooden H-frame structure and get into a work position above the crossarm. Then, they were picked up again and flown back to the landing zone.

"This technique is completely voluntary,"

said Hunt. "We don't want to force anyone to do this. There is plenty of work that can be done on the ground and using other methods."

There were skeptics in the crowd wary about how effective the technique would be. Even so, almost everyone lined up with their full-body harnesses, special helmets, ear protection, gloves and hooks and gave one another 'buddy checks.'

Early fliers landed with big grins, giving their doubting coworkers positive encouragement that they only need to "just try it." Most everyone did, while crews recorded people's first flights on mobile phones and cameras.

Long-line method proves its worth

With the linemen signed off on the training, it was time to see how valuable the helicopter long-line method was in practice.

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From Sept. 2-3, the 25 linemen replaced overhead ground wire and fiber hardware on 10 miles of the Miracle Mile-to-Snowy Range 230-kilovolt line.

“You do your job like you would in bucket trucks or on hooks,” said Hill.

It may have been many linemen’s second time using the helicopter, but the process flowed like a well-oiled machine. The linemen were split into three groups of eight, each responsible for one section of the 10 miles. Two remained at the landing zone to communicate with the helicopter. The other six were equipped with a bag that carried four structures’ worth of materials. Each lineman was flown from landing zone to structure. The helicopter would pick up and drop off the five other linemen in the group, two per structure. By the time the sixth lineman was on the structure, the first was ready to be taken to the next structure.

“We did 10 structures in an hour,” said Foreman III Lineman **Ron Burbridge** with a grin. “10!”

In comparison, RM crews had replaced the same hardware on 47 miles of this line using bucket trucks earlier in the summer. It took 20 minutes to replace the hardware on both sides of one structure, after the bucket truck was set up, about another 10 minutes alone. That’s five bucket trucks to one helicopter for the same work in an hour. Consider, too, five bucket trucks churning up land, needing access roads, going around sensitive areas, using gas and maneuvering rough terrain.

“Within the past year, RM crews have had to work around the newly federally protected sage grouse. We also have historical sites on easements such as the Oregon Trail, pioneer grave sites and tipi rings left behind by Native American tribes,” said Cheyenne Field Maintenance Manager **Will Schnyer**. “Using helicopters reduces the impact to these sites and species, as well as the surrounding natural resources, by simply going over them.”

There are also safety benefits to long-line maintenance over climbing. Climbing is

tiring and challenging, and fatigue and overexertion can lead to accidents in the field. RM Vice President of Transmission System Asset Management **Nick Klemm** shared, “Headquarters Electrical Engineer **John Quintana** performed a risk analysis, and the results showed that using helicopter long line to transport people is no more or less dangerous than doing it with a bucket truck.” That assessment did not account for driving to and from the work site, which brings its own hazards.

“The helicopter was well worth it, and, hopefully, we will be able to continue the practice,” said Cheyenne Foreman II Lineman **Ron Miller**.

Other RM maintenance leadership agreed with Miller’s assessment. “The general consensus was the training and helicopter work method was a success and worth the time, expense and effort,” said Schnyer. “Every lineman who participated expressed the desire to incorporate the long-line method for future work that takes place within RM. For now, we will likely use the helicopter long-line method on a case-by-case basis.”

Learn more about Western’s procedures for transmission line helicopter maintenance in Chapter 19 in the *Power System Maintenance Manual*. □

Note: Meiman was a public affairs specialist. She no longer works at Western.



On Sept. 1, Sierra Nevada Lineman **Ryan Mumma** demonstrates with SN Lineman **James Hill** how the helicopter long-line technique can be used to rescue injured linemen from the structure.

Options for long-line maintenance

Helicopter long-line maintenance can be used for certain types of work including:

- Repairing damaged conductor mid-span
- Placing linemen at work locations on structures and conductor
- Transporting tools and equipment to linemen
- Landing conductor carts
- Shield wire repair
- Replacing or installing
 - aerial marker balls
 - spacers
 - dampers
 - insulators
 - guards for wire stringing over energized lines over road crossings
 - bird diverters

CUSTOMER PROFILE
SAN MIGUEL POWER ASSOCIATION

Hydropower makes mark on electric co-op

by Kevon Storie

The beauty and the challenge of renewable energy is that there is no silver-bullet resource, no one-size-fits-all portfolio, and a utility's territory may hold more than one overlooked opportunity to add new kilowatts of clean, locally generated power. Being alert to such opportunities is how San

Miguel Power Association built a power portfolio that includes 2.3 percent locally generated hydropower.

Right place, right time

Small hydropower development is highly dependent on location, and San Miguel is lucky that its southwestern Colorado service territory is rich in the resource. "Blessed," in the words of Marketing and Energy Services Manager Brad Zaporski, who added that there is more to the utility's success than water. "We have existing infrastructure from the historic mining industry so the facilities can be developed with minimal environmental impact," he said.

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One of the nation's oldest hydropower plants, the renovated Ouray micro-hydropower unit, generates about 4 million kilowatt-hours annually. (Photo by San Miguel Power Association)



“ONLY ABOUT 3 PERCENT OF THE NATION’S DAMS CURRENTLY INCLUDE HYDROPOWER. THERE IS AN ENORMOUS UNTAPPED OPPORTUNITY TO GENERATE NEW CLEAN ENERGY USING EXISTING INFRASTRUCTURE.”

In fact, commercial hydropower plants were generating electricity in the area long before the Department of Energy was created, long before Roosevelt signed the Rural Electrification Act. The Ouray hydro plant began operating Dec. 6, 1885, making it one of the oldest in the nation. Private developer HydroWest Inc. bought and renovated the inactive plant in 1992, and today it generates about 4 million kilowatt-hours annually for San Miguel.

The 11-kilowatt Mayflower Mill in Silverton is another history-making facility, the first small hydro project in Colorado to be permitted under the Hydropower Regulatory Efficiency Act. Congress passed the law in 2013 to streamline the permitting process for hydro units smaller than 5 megawatts. “That is going to make a lot more small projects feasible,” noted Zaporski.

Comes in all sizes

In many cases, however, the cooperative simply makes its own feasibility. At 8 MW, the Ridgway Reservoir hydropower plant doesn’t quite qualify for the HREA, and it is the single largest renewable energy project in San Miguel’s service territory. It generates about 24,000 megawatt-hours in an average water year, or enough electricity to power 2,500 homes annually, and far more than the co-op is able to purchase on its own.

San Miguel worked out an agreement with its wholesale power provider, Tri-State Generation and Transmission Association and plant-owner Tri-County Water. Tri-State buys the energy the plant produces between June and September, and San Miguel consumes the power. The city of Aspen, Colorado, buys the facility’s output during

the other eight months of the year.

Though considerably smaller at 320 kW, the generating station at the Pandora Water Treatment Facility in Telluride scores big points for maximum use. Four high lakes above the town send water through the Bridal Veil hydro plant above town, producing about 2 million kWh annually. The next stop is the Pandora hydro unit at the treatment facility, and from there to the homes and businesses of Telluride for consumption. The water ends its journey through the city at the Telluride wastewater plant where a large solar array produces 10 percent of the plant’s electricity needs. “And all of these things in just three miles, using existing infrastructure from the mining era,” said Zaporski.

San Miguel also has several micro-hydro units—those that generate fewer than 100 kW—in its portfolio. The 90-kW Coal Creek hydro plant just south of Ridgway was the co-op’s first micro-hydro purchase in 2009, and the 22-kW Ouray Hot Springs hydro plant is one of three net-metered hydro facilities on SMPA’s system.

Raising green for green power

Focusing on small and micro hydropower development isn’t the only creative thing about San Miguel’s approach to renewable energy, either. “We do it all on a zero-subsidy basis,” Zaporski stated proudly.

The co-op offers its members two programs that allow them to fund hydropower and other renewable projects outside of rates. Through the Green Block program, members purchase renewable energy credits, or RECs, from SMPA’s existing renewable generators to offset their energy consumption. These

Green Blocks, as the RECs are called, represent 100 kWh of renewable energy and cost \$1 per block, per month. All SMPA members can purchase as many blocks as they wish and the cost is added to the monthly bill. Local municipalities looking to offset their energy use also purchase the RECs.

The Green Cents program is another simple and easy way for members to support community renewable energy projects. Members can choose to round up their monthly bill to the nearest dollar, with the extra pennies funding new projects. Participation costs members on average around \$7 annually, and they may cancel at any time.

Opportunity keeps on knocking

In a news release about the Ridgway Dam project, Colorado Small Hydro Association President Kurt Johnson, of Ophir, said, “Only about 3 percent of the nation’s dams currently include hydropower. There is an enormous untapped opportunity to generate new clean energy using existing infrastructure.”

Zaporski agrees, noting that San Miguel has two more small hydro projects in the works. He added that the Regional Conservation Partnership Program is a good place for utilities to find funding, partners and technical assistance to develop hydropower resources in their area. “Partnership is really what makes these projects happen,” he declared. □

Note: Storie is an Energy Services marketing specialist who works under the Wyandotte Services Inc. contract in Lakewood, Colorado.