



# Powerlines

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## PowerSouth prepares for summer with reliability checks

Each spring, PowerSouth prepares its generation and transmission system for hurricane season and summer temperatures that bring the potential for unexpected power disruptions and spiking energy demands.

"We perform routine maintenance throughout the year," said PowerSouth Energy Services Manager Tim Hattaway. "But with the summer coming up, we analyze projected peak conditions to make sure we're prepared to handle that load."

### Reliability Runs

Throughout the year, Energy Control Center (ECC) operators, in coordination with plant personnel, perform key checks of PowerSouth's generating units, known as "reliability runs," which test generating equipment used less frequently during the year.

"With certain units, we want to make sure they run at least every 20 to 25 days," said Hattaway. "If we see a unit hasn't been online and generating for a while, we'll put that unit online to perform a reliability run for several hours to

ensure everything's working properly."

The ECC also constantly updates load projections to anticipate the system's real-time needs.

"We develop next-day 'operating plans,' where we look at anticipated peak scenarios and evaluate various contingencies to make sure we have adequate resources to meet peak demand," Hattaway said.

System operators participate in training exercises and drills throughout the year to prepare for possible emergency situations on the bulk electric system. They also participate in regional system restoration training and take part in emergency drills to enhance readiness.

### Power Supply

As summer approaches, the Power Supply division performs annual tests to track each plant's generation capacity. This data provides an accurate picture of how much electricity each plant can generate in a range of conditions.

"We need to know how much the combined-cycle plants (that use both gas and steam turbines) will generate because temperature affects how they handle different loads," said PowerSouth Vice President of Power Production David Powell. "Gas turbines use a lot of air, which is filtered, compressed, mixed with gas and ignited to produce power. Air is less dense at high temperatures, making this process less efficient and reducing the amount of electricity a unit can produce in the summer."

Also in preparation for the summer, the McIntosh Plant conducts a black start drill, an exercise to simulate a restart with all transmission lines out of service and when pulling power from the grid is not an option.

"We start the diesel generator on-site, and from that we can start some of our auxiliaries and gradually bring the plant up," said Powell.

### Transmission

Transmission lines and substations also receive attention during the spring, with a focus on completing routine maintenance and optimizing equipment.

PowerSouth Director of Transmission and Distribution Operations Terry Wilson said there are instances where maintenance or planned projects are shifted from summer to spring, especially in cases where having certain equipment out of service during peak demand summer conditions could present a problem.

With safety in the forefront, transmission and substation crews may start their day as early as 6 a.m. to avoid hot afternoon temperatures.

"Crews also start earlier in the summer months to complete daily work assignments and place lines and equipment back in service prior to the daily system peak," said Wilson. "Having all lines and equipment in service during the system peaks helps assure system reliability." ■

# Generation plants explore **new techniques** during spring outage

During shoulder seasons (spring and fall), when demand for electricity is at its lowest, PowerSouth conducts planned outages at its generating plants to allow for equipment inspection and maintenance without significantly impacting the cost or reliability of service to distribution members.

This spring, new techniques including sonic blasts, a honeycomb-like catalyst and a strategic use of grease were among the strategies PowerSouth employed for inspections and maintenance. These procedures were either new to PowerSouth or to the industry.

## **McWilliams Power Plant**

For the first time, sonic blasting was used to clean debris from the McWilliams Power Plant's heat recovery steam generator (HRSG). Essentially a large boiler, the HRSG uses hot exhaust gas from the combustion turbine to create steam that powers the McWilliams steam turbines. Over years of use, contaminants and debris build up, reducing the HRSG's efficiency.

Sand or ice blasting is often used to clean this type of debris, but this year PowerSouth tried a sonic blasting method pioneered by General Electric.



According to Central Generation Plant Manager David Wyatt, balloons filled with ethane gas were placed inside the HRSG. These balloons were filled with ethane gas and ignited in controlled blasts. The resulting concussion waves shook debris free.

David Wyatt, Central Generation Plant Manager, says this new approach proved very effective in removing debris during a short outage window.

## **Vann Power Plant**

The Vann Power Plant's selective catalytic reduction system (SCR) was cleaned during the spring outage.

**Lowman employees take advantage of outages to complete routine maintenance. Maintenance Technicians Joey Ramey (left) and Derrick Johnson repair a pump.**

The SCR system includes a 2-foot-thick catalyst media that covers the entire width and height of the HRSG (27 feet by 70 feet). The media has small openings and resembles a tight honeycomb. The catalyst is saturated with chemicals that react with atomized ammonia to reduce the nitrous oxide (NOx) emissions from the combustion turbine exhaust. When the injected ammonia reacts with the chemicals on the catalyst media, the NOx drops out as harmless water and nitrogen.



**Sonic blasting inside the McWilliams HRSG proved effective in cleaning debris from boiler pipes.**



Over time, however, the surface of the catalyst becomes blocked by foreign matter like dust, reducing its effective surface area. During the spring outage, PowerSouth hired a company to use a delicate air-cleaning process to restore the catalyst's full effectiveness.

"The catalyst is fragile and brittle, so they had to be careful," said Wyatt. "This cleaning process will help us get at least one more year, if not two, out of this catalyst, which is very expensive to replace."

### McIntosh Power Plant

The compressed air energy storage (CAES) unit at McIntosh is only the second of its kind in the world, which creates unique challenges for even routine maintenance.

The plant's distinguishing feature is a large underground cavern, which is pumped full of compressed air during low-demand periods. During times of peak usage, that air serves as stored energy to generate up to 110 megawatts of electricity.

The cavern is integral to the process, and inspecting it has been extremely costly and time consuming — until now.

During the spring outage, workers attached a piece of equipment sealed with grease (called a "snubbing unit") to the top of the cavern pipe. The grease sealed the cavern and allowed it to be inspected without depressurization.

Using this process, workers inspected the carbon steel casing that leads into the cavern to ensure it was intact and suitable for service.

"Carbon steel can be corroded by the salty air inside the cavern, allowing air to leak out," said McIntosh Plant Manager Lee Davis. "Our inspection found the casing to be in good condition."

Also during the outage, the cavern's volume was confirmed using sonar equipment.

These inspections found that the cavern has changed very little since its construction and that the casing pipe is in good mechanical condition.

"One problem with using caverns like this is that they could close back up," Davis said. "That's why we don't want to depressurize it for very long. Using this procedure gave us the chance to make sure ours is still the same size as when it was built."



**To inspect the CAES cavern without releasing air pressure, instruments were lowered through a unit filled with grease.**

### Lowman Power Plant

Often, an outage is simply a time for routine maintenance.

"We perform maintenance in every outage, whether it's spring or fall," said Lowman Plant Manager Robby Hunt. "We do a lot of cleaning, inspecting and repairing of all kinds of items, and this year the support structure on the recycle tank was the biggest."

The recycle tank stores slurry (ground limestone and water), agitates it, and pumps it to the absorber towers to remove sulfur dioxide (SO<sub>2</sub>) from stack gases. The used slurry is pumped to the gypsum plant, where it is dewatered and marketed to the concrete industry for beneficial use. The tank is an important part of waste recycling that helps the plant meet environmental regulations.

Both the steel support structure for the tank and the deck that covers the tank needed replacement.

"That original structure was going on 40 years old, and the gases from the recycle tank can be corrosive," Hunt said. "It was definitely time for them to be replaced." ■

## Employee Assistance Program has new look, same free services

The Alabama Rural Electric Association (AREA) Employee Assistance Program (EAP) is available to all PowerSouth employees and eligible dependents. Recently, the EAP updated its logo and refreshed its website to provide a modern, simple interface for employees looking to use its services.

Services available to all PowerSouth employees include up to six free sessions provided for issues such as:

- Grief and loss
- Coping with change
- Marital/family issues
- Interpersonal relationship difficulties
- Stress-related problems
- Referrals to other professionals when necessary

EAP also provides several work-life services:

**ELDERCARE SUPPORT SERVICES:** referrals for eldercare and resources and materials on retirement, housing concerns, grief and loss, disaster support, Medicare/Medicaid and respite.

**LEGAL COUNSELING SERVICES:** a free, comprehensive legal consultation with access to a 25 percent discounted rate for future services. (These services do not apply to employment issues.)

**FINANCIAL COUNSELING SERVICES:** a free session with a certified financial professional with access to a 15 percent discount for future services and/or local community referrals to other financial advisement resources.

**COMMUNITY SUPPORT RESOURCES:** access to referrals to thousands of community resources including 12-step groups, community mental health agencies, support groups and more.

**ONLINE SERVICES:** the American Behavioral website allows you to navigate services offered, locate a provider in your area, take surveys, and much more.



**American Behavioral**

[www.americanbehavioral.com](http://www.americanbehavioral.com)

(800) 925-5EAP (5327)

# Protect your online devices from hackers

As the Internet of Things — the expanding network of smart TVs, appliances, thermostats and more — continues to grow in homes and businesses, so does the need for security.

"Many companies have put these devices on the publicly accessible internet, which is useful for their purposes but also makes them a potential tool for others with more nefarious purposes," said PowerSouth's Network Support and Security Supervisor Mark Dayton.

One form of attack that can hijack your smart device is known as a distributed denial of service (DDoS). The hacker infiltrates as many

smart devices as possible — often across the globe — with the goal of using those devices to overwhelm a website or online service with meaningless data, sometimes called noise. When a DDoS attack succeeds, the target site cannot respond to legitimate requests.

"A hacker can throw as much noise at somebody as they can generate," said Dayton. One approach for a DDoS attack is for hackers to take over as many devices as possible and to use that combined power to launch an attack.

While attacks themselves are complex, defending your devices against them is simple:

1

## Change your username/password from the default.

Attacks like these use a piece of malware from the 1990s called Mirai. The software tries a device's manufacturer-provided default username and password, gaining access if a user never changed that information. Updating the username and password is a quick way to make Mirai ineffective.

2

## Keep your devices off public networks.

Hackers search public internet networks in the hope of bundling devices to use in attacks. Keeping webcams and other online devices behind the firewalls of a private network is an easy way to make an attack significantly more difficult for a hacker.



## Bartley elected to PowerSouth Board of Trustees

John Bartley of Wewahitchka, Florida, has been elected to represent Gulf Coast EC on the PowerSouth Board of Trustees. Bartley's appointment was approved at PowerSouth's April board meeting.

He holds undergraduate and graduate degrees in business administration and accounting. Bartley is a Certified Public Accountant and a Certified Fraudulent

Examiner, and he has completed the Rural Utilities Service borrower accounting course.

"I am very grateful for the opportunity to serve PowerSouth as a board member," Bartley said. "Serving PowerSouth is a distinguished privilege, and I look forward to working with cooperative staff and my fellow board members." ■

## Wilson brings PowerSouth perspective to national board

A little more than a year after joining the National Rural Electric Cooperative Association's (NRECA) Transmission & Distribution Strategies Member Advisory Group (TDS MAG), Terry Wilson has learned that he gets as much advice as he gives.

Wilson, PowerSouth's Director of T&D Operations, says serving on an NRECA Business & Technology Strategies advisory panel gives him a valuable sounding board.



"Other than the obvious benefits of learning about new and advancing technologies, the primary benefit for me has been the development of relationships with the members of the MAG," he says. "We've all gained relationships that allow us to call on each other for advice and input."

That's not to downplay his own contributions as a G&T representative on the panel. He brings 30 years of utility experience to the MAG, 24 years of it with PowerSouth.

"My role is to bring a perspective from the G&T cooperative viewpoint, including substation and transmission areas," Wilson says. "I'm also able to provide perspective from experience with serving 20 member systems in Alabama and the Florida Panhandle."

Finally, he appreciates the opportunity MAG membership gives him to see new tech applications at work.

"We've visited several interesting transmission and distribution field sites as well as manufacturing facilities," Wilson says. "Those visits always help give us new ideas and additional perspectives into our industry." ■

*Experts agree:*

## Local regulation is the best regulation

My colleagues and I in the Alabama Legislature know we do not work in a vacuum. We do not dream up laws out of the blue. I am a citizen-legislator, like my fellow Representatives in the House and our co-workers in the Senate. If I didn't place more importance on the "citizen" portion, then I never would have sought elected office. I work for the people in my district and for all the people in our great state.

To make the best decisions for my district, I stay in contact with my constituents to learn their concerns and to share my thoughts on how to make things better. To make the best decisions often means reaching out to experts. Many of us did this recently when I, as a member of the Southern State Energy Board, joined the Energy Institute of Alabama to host the first Energy Day in Montgomery.

Members of both the House and Senate joined stakeholders in the energy industry, including a group of United Mine Workers members, to listen and learn from a panel of experts from across a broad spectrum of the energy sector. A panel discussion covered topics from expected federal regulation changes to nuclear power to oil sands in Alabama to challenges facing our education system in training energy sector workers of the future.

Panelists were Tennessee Valley Authority President and CEO Bill Johnson, State Geologist and Oil and Gas Supervisor of Alabama Nick Tew, PowerSouth President and CEO Gary Smith, Alabama Power Executive Vice President of External Affairs Zeke Smith, Coalbed Methane Association Executive Director Dennis Lathem and ExxonMobil Mobile Bay Ops Manager Chris Golden.

Alabama is a strong player in the nation's energy sector. We rank sixth in the United States in electricity generation, eighth in electricity generation via renewable resources thanks to our amazing hydroelectric capacity. Few Alabamians are aware that our energy industry ranks 16th nationally in total energy



production and we rank 17th in the number of producing natural gas wells. Mobile is the third-largest coal exporting seaport in the U.S. Our energy industry has a \$13.2 billion economic impact on Alabama, according to a study from the Energy Institute of Alabama and the Economic Development Partnership of Alabama.

The panelists at Energy Day agreed that the best regulations are those that come from regulators "on the ground," that is, those who live and work closest to the regulated industry and who understand the consumers and businesses that must deal with the regulations. While federal regulation is necessary in some situations, the rules that work best are those that are put in place closest to home.

Alabama's Legislature wants to ensure that regulations on businesses and consumers protect us and our environment without being burdensome. Thanks to cooperation between legislators, regulators, businesses

and our citizens, we have been successful in encouraging economic growth at a fair cost.

As the TVA's Bill Johnson said, "We have the lowest electricity rates in the nation and the highest customer satisfaction. So, the simple point is, what we do here is working; why change it?" ■



**Rep. Randy Davis**

Alabama House of Representatives

*Randy Davis represents District 96 in the Alabama House of Representatives, which includes portions of Baldwin and Mobile counties.*





**Lane Taylor**  
Lowman  
40 years, June 20



**Bennie Vick**  
Lowman  
40 years, June 20



**Ceil Smith**  
Transmission O&M  
39 years, June 16



**Jay Farrington**  
Planning, Reg. & Compliance  
38 years, June 4



**Robby Hunt**  
Lowman  
38 years, June 4



**Norma King**  
Comp. Info. Services  
37 years, June 16



**Kenny Lee**  
Substation O&M  
37 years, June 30



**Sammy Hogg**  
T&D Eng. & Const.  
36 years, June 22



**Keith Lynch**  
Substation O&M  
34 years, June 13



**John Shaw**  
Bulk Power Services  
31 years, June 16



**Ralph Gunter**  
Energy Services  
31 years, June 22



**John Twitty**  
T&D Eng. & Const.  
31 years, June 30



**Paige Culbreth**  
Financial Planning  
30 years, June 8



**Ronda Kirkland**  
Central Generation  
29 years, June 6



**Jim Kelley**  
Planning, Reg. & Compliance  
28 years, June 19



**Julie O'Connor**  
Comp. Info. Services  
28 years, June 19



**Lisa Williamson**  
HR Services  
27 years, June 25



**Beth Woodard**  
Legal & Corp. Affairs  
26 years, June 3



**Bryan Pansing**  
Lowman  
25 years, June 1



**Randy Grimes**  
Power Production  
25 years, June 29



**Veronica Wallace**  
T&D Eng. and Const.  
24 years, June 16



**Keith Castleberry**  
Telecom Services  
23 years, June 28



**David Purvis**  
McIntosh  
19 years, June 1



**Kim Arrington**  
Fuels  
18 years, June 7



**Russell Keith**  
Lowman  
18 years, June 21



**Andrew Thrash**  
Lowman  
18 years, June 21



**Heather Anderson**  
Finance & Accounting  
17 years, June 5



**Carol Page**  
Legal Affairs  
17 years, June 12



**Jamie Hawkins**  
T&D Technical Services  
16 years, June 11



**Michael Hattaway**  
Substation O&M  
15 years, June 3



**Paul Dubose**  
Comp. Info. Services  
14 years, June 9



**Doyle Mills**  
Substation O&M  
13 years, June 28



**Casey Jackson**  
T&D Technical Services  
11 years, June 26



**Sherry Criswell**  
Lowman  
10 years, June 25



**Penny Nichols**  
Lowman  
10 years, June 25



**Chris Flood**  
Communications  
9 years, June 9



**Taylor Williams**  
External Affairs  
8 years, June 1



**Scotty Moseley**  
Transmission O&M  
7 years, June 14



**Josh Blackburn**  
Substation O&M  
7 years, June 28



**Al Mosley**  
Lowman  
6 years, June 13



**Courtney Bowers**  
T&D Eng. & Const.  
4 years, June 17



**Tommy Averill**  
Safety Services  
4 years, June 24



**Miles Hammac**  
Planning, Reg. & Compliance  
4 years, June 24



**James Hogg**  
Substation O&M  
4 years, June 24



**Michael Ballard**  
Central Generation  
2 years, June 1



**John Lanier**  
Central Generation  
2 years, June 1



**Colton Sims**  
T&D Technical Services  
2 years, June 1



**Kevin Freaney**  
Central Generation  
2 years, June 8



**Bo McKathan**  
Central Generation  
2 years, June 8



**Harrison Obenhofer**  
Central Generation  
2 years, June 8



**Ryan Sanders**  
Central Generation  
2 years, June 8



**Dustin Kilcrease**  
Environmental Svcs.  
2 years, June 15



**Colby Cohon**  
Engineering  
1 year, June 6



**Will Blount**  
Environmental Svcs.  
1 year, June 13

# Comings and goings

## Welcome

**Lucas Worley**, Work Study in Building Maintenance, effective April 17.

## Promotion

**Chris Dunbar** was promoted to Multimedia & Member Accounts Specialist I from AV - Multimedia Specialist in Communications, effective April 23.

## Goodbye and good luck

**Landon Hughes**, Co-op Engineer at Central Generation, effective April 27.

**Triston Hilburn**, Work Study in Member Services, effective May 1.

**Adam Kilcrease**, Work Study in Legal Affairs, effective May 5.

**Dylan Rhodes**, Work Study in Safety Services, effective May 5.

**Madison Turner**, Work Study in Financial Services, effective May 10.

## Retirement

Congratulations to **Jimmy Marley**, who retired on May 5 after 36 years of service. His most recent position was Training and Development Specialist. ■

# Happy Birthday!

- June 3..... Steven King
- June 4..... Brett Mack  
Tammy Mount  
Mitch Pugh
- June 5..... Julie O'Connor  
Chris Powell
- June 7..... Marvin Hicks  
Darrell Lathan
- June 10..... Keith Curry  
Gary Goldman
- June 11..... George Rhodes  
Scott Rogers  
Wes Scott
- June 12..... Greig Foshee  
Tiffany Johnson
- June 13..... Dustin Dunagan  
Jay Farrington
- June 14..... Paige Culbreth  
Jeremy Hardy  
Stanley Poole
- June 15..... Mark Elmore  
Andy Parnell
- June 17..... Joe Boyd  
Colby Cohron  
Josh Mullen
- June 19..... Kim Johns
- June 20..... Daryl Beck  
Michael Dauphin  
Erica Echols  
Eric Hicks
- June 22..... Dewayne Foshee  
Will McVay
- June 23..... Travis Martin
- June 24..... Seth Hammett
- June 25..... Derrick Johnson  
Phillip Spivey
- June 27..... Michael Blackledge  
Tim Hattaway
- June 28..... Chad Henderson
- June 29..... Bob Little



## CO-OP *kids*

# Miss Troy 2017

Congratulations to **Kayla Lynn Mitchell**, daughter of **Michael Mitchell (Telecommunications)**, who was named Miss Troy 2017. She won interview, verbal communication, and the written communication portion as well. She will now travel to Dothan to compete for Miss Peanut.





**RONALD McDONALD HOUSE CHARITIES®**

PowerSouth is teaming up with Ronald McDonald House Charities of Alabama to collect aluminum pop tabs. Ronald McDonald House collects tabs throughout the year to raise money to serve children and families outside of the Birmingham area.

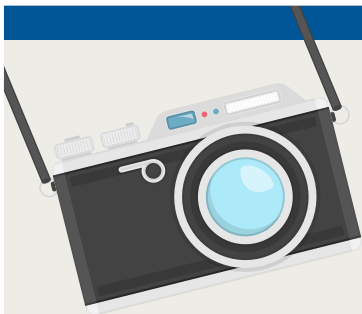
PowerSouth employees can help by saving their tabs from the office and by bringing them from home to donate. Either place tabs in the collection boxes in break rooms or send them via office mail to Christi Scruggs. ■



## Board meeting

Mark your calendars for Friday, June 23.

Headquarters employees should wear business professional attire on board meeting days.

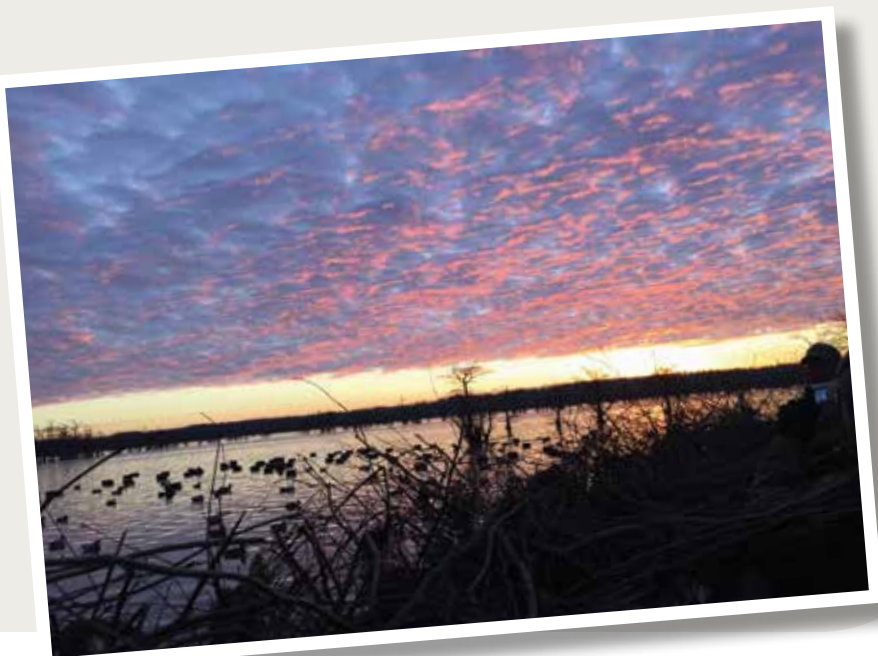


## May photo contest winner: **Branson Williams**

Congratulations to Branson Williams, who captured this beautiful sunset.

Submit your photos now for the June contest. If sending an electronic file, please send the highest quality possible. The winner selected on June 20 will receive a 75th anniversary tumbler and be featured in the July issue of *Powerlines*.

**Send your entries to Christi Scruggs at [christi.scruggs@powersouth.com](mailto:christi.scruggs@powersouth.com) or via interoffice mail. ■**



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