ASSOCIATION of TENNESSEE VALLEY GOVERNMENTS

September Newsletter 2017

TVA Enhancing Power Distribution Reliability Using Sensors

Scott Self, CIO with Tennessee Valley Authority recently outlined some of the challenges faced by the energy sector today that technology has proved to be adept at solving.

"The energy sector is facing several challenges, specifically around reduced per capita consumption and the introduction of more distributed/renewable energy generation. In this changing environment, it is essential that TVA continue to optimize operations so that every generated megawatt of power can be reliably provided to our customers at the lowest feasible cost.

For example, to improve our performance we have actively been using instrumentation on plant and substation equipment to help minimize failures and unexpected outages. TVA's Monitoring and Diagnostics Center, managed by Power Operations, uses the generated data to predict equipment failures for our nuclear, coal, gas and hydro facilities. Along the way, one challenge that we've encountered is that the traditional installation of cable and conduit from the equipment to a data collection device is cost prohibitive. However, with the convergence of ever-increasing computing power, reduction in storage costs, the enhanced capabilities of 3D printing, and the overall maturation of technology, this concern has been recently resolved. Currently, TVA IT is working with plant engineering staff to develop wireless mobile sensor units that can be quickly deployed to monitor adverse conditions of plant equipment. These units will provide engineers with real-time information on any step change that occurs on plant equipment.

I would be amiss if I didn't also mention the value of stronger partnerships between our IT personnel and field/plant personnel in delivering these kinds of solutions. Those partnerships are critical to IT's role as a trusted advisor. One specific example of these partnerships involved a conversation between an IT staff member and employee at a nuclear site around how to get wireless access in their emergency response vehicle. That engagement resulted in an innovative solution to not only equip the vehicle with wireless sensors but to enable the data collected to be streamed to an analyst in real-time. Engaging individuals who were deeply interested in knowing 'why' something was needed, served as a catalyst for a step-change solution versus providing an only incremental improvement.

It's our job to ensure that sensor information can be delivered and analyzed in real-time to provide insights that improve decision-making and lead to timely action. The whole energy sector is at the cusp of a technological revolution with the concept of the "Sensor" at the front and center of this upheaval.

More sensors throughout our power and transmission systems will inevitably be coming online. This is not being done for the sake of technology, rather it will make the power delivered to your house and mine more reliable and increase efficiencies in maintaining the overall power system. These sensors need to be easily configured, extremely secure, and relatively inexpensive to purchase and maintain. It's our job as IT professionals to ensure that sensor information can be delivered and analyzed in real-time to provide insights that improve decision-making and lead to timely action."

Hawkins County Hopes to Work With TVA to Develop Old Steam Plant Property

As it did with the Phipps Bend Industrial Park 35 years ago, Hawkins County hopes to work with the Tennessee Valley Authority to prepare the retired John Sevier Steam Plant site for potential industrial development.

Hawkins County Industrial Development Board Chairman Larry Elkins told the IDB that he recently met with the TVA and some of its site development consultants on the property just south of Rogersville, which until earlier this year was home to the old steam plant facility.

The coal burning plant was constructed in 1956 and produced electricity until the new gas plant next door went online in 2012. Demolition of the old plant began last year, and in May the last remaining structures, the two 350-foot-tall smokestacks were brought down.

As was the case when the TVA's Phipps Bend nuclear plant project was scrapped in 1980, demolition of the old steam plant has left a substantial piece of vacant land that is prime for industrial development. The power plant itself sat on 50 acres, but TVA owns hundreds of vacant acres in the vicinity.

Elkins said the TVA is currently developing a new footprint to determine how much of that property can potentially be developed and for what possible uses.

"They'd like to see it developed, and we'd love to work with them," Elkins told the IDB Thursday. "I encouraged this from the get-go about letting us get involved. We've been pretty successful at Phipps Bend and that abandoned site, and we can work with them on this one also."

Elkins noted that the property would have been perfect for some companies in need of a lot of electricity, raw water, and rail access that have considered Hawkins County for development in the past.

"You've got the raw water intake built by TVA in the 1950s, and you've got the slew putting it back in," Elkins told the board. "It's a perfect place if you've got the right kind of industry."

TVA Vice President of General Construction Bob Deacy told the Times-News this past December that the steam plant would be prime industrial property once the demolition had been completed.

"We are committed to working with local officials for future use of this site," Deacy said. "TVA has an economic development group that will work with the local officials as we look to determine what the future use of this site could be.

From LEGO League To Software Engineer

If your child expresses interest in a school robotics program, take action. For one curious little girl, it turned out to be the first step on the path to a career as a software engineer at a FORTUNE 500 company.

Like most 11-year-olds, Laura Ayres thought building a robot would be "really cool." But when her mom asked if she'd like to be part of a middle-school LEGO League robotics team, she wasn't sure.

"I was more interested in music and computer games," she recalls. "Plus, there weren't any other girls on the team. It didn't take Laura long, though, to get hooked. "After I proved to the boys that I had a brain, it was fun," she says. "I'll never forget the first time we actually got Ed, our robot, to do what we wanted him to do. We were able to back him up when he hit a wall, which doesn't sound like much. But for a bunch of sixth and seventh graders, it was an incredible feeling—to realize that you'd built something that actually worked."

Today, Laura is a software engineer at Unum, a Fortune 500 insurance company, but sometimes she gets a similar feeling, she says with a laugh.

"When I'm trying to solve a software problem, it can feel like I'm hitting my head against the wall, and I have the same sense of accomplishment when I finally figure it out."

Looking back, Laura can see how the dots connected. "Building robots and participating in competitions sparked a practical interest in technology," she says. "I enjoyed it, and I discovered I was good at it. If I could program a robot, I figured I could program other things."

TVA supports robotics programs in over 500 schools, serving over 10,000 students across the Valley. In the 2017-2018 school year, TVA will sponsor more than 60 robotics competitions. In addition, about 20 local power companies support school robotics programs and competitions.

ATVG REPORT:

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ATVG is a 501(c) (4), not-for-profit, public interest organization. ATVG advocates for the interests of county and city/town governments residing within the seven-state TVA region and their partners in the public and private sectors.

For details about ATVG's mission and program of work, visit us on line at: www.atvg.org

TVA Moving to More Diverse Power Generation

For most of its eight-decade history, the Tennessee Valley Authority has been linked closely with the coal industry. When thinking of TVA it is easy to think of coal-powered plants spewing smoke as they create the electricity that powers homes and businesses in parts of seven states. It is time to think again.

Justin Maierhofer, TVA's vice president for government relations, recently pointed out during a visit to Bowling Green, KY that the federally owned corporation that was created in 1933 to bring electricity and economic development to the Tennessee Valley has departed from its fossil fuel-dependent past.

"We have a very diverse generation portfolio," he said after speaking at the Bowling Green Area Chamber of Commerce's August meeting at the Knicely Conference Center. "We have nuclear, coal, natural gas, hydroelectric, wind and solar. We do a little of everything, which benefits the consumer."

The transition from coal has been dramatic, dropping from 58 percent in 2007 to roughly 24 percent today. As part of that transition, TVA's Paradise Fossil Plant in Muhlenberg County closed two of its three coal-fired units and built a $1 billion gas-fired plant to replace the two units that were retired.
"Natural gas has fewer pollutants than coal," Maierhofer said. "We have retired some older coal plants because they're not very efficient."

Looking for increased efficiency, TVA has turned more to nuclear power. Its three nuclear plants now generate about 40 percent of the electricity TVA provides to distributors such as Bowling Green Municipal Utilities and Warren Rural Electric Cooperative Corp.

TVA is also increasing its use of renewables such as wind and solar. "Solar prices are coming down," Maierhofer said. "We see tremendous value in solar. We have some customers who demand renewable energy. A lot of high-tech companies are interested in clean energy."

LG Breaks Ground On First U.S. Appliance Plant

LG Electronics took a ceremonial step closer to domestic manufacturing at the end of August when dignitaries including U.S. Commerce Department Secretary Wilbur Ross and Tennessee Senator Bob Corker joined management in breaking ground on the company's first U.S. appliance plant.

The $250 million washer factory, to be built in Clarksville, Tennessee, will house both fabrication and sub-assembly operations, and promises to be the world's most advanced production plant for washing machines, LG said. Employing 600 workers, the highly-automated facility will be capable of spitting out 10 fully-assembled front- or top-load washers every 10 seconds, and will permit production line model changes in less than four minutes.

LG said a U.S. manufacturing presence "will accelerate delivery of its laundry line to better meet domestic demand," and that the 310-acre Montgomery County site offers the potential for expansion into other categories.

LG also stated that it has accelerated the construction timeline and now expects to begin producing washers in Tennessee as early as the first quarter of 2019. It has already begun hiring for the project. "We are proud to make further investments in America, to create even more U.S. jobs, and to bring state-of-the-art home appliance production technology to the great state of Tennessee," said Dan Song, president, LG Home Appliance and Air Solutions Co. "We couldn't have selected a better location for our state-of-the-art facility. This groundbreaking in Clarksville brings us another step closer to producing premium LG washing machines in the United States."

Added Secretary Ross, "The fact that one of the world's most innovative and successful home appliance companies is establishing its largest U.S. home appliance operation here in Tennessee is a testament to the strength of our country's business climate, the promise of our long-term prosperity and our exceptional U.S. workforce. This is exactly the kind of job creation and investment that the Administration is seeking for American workers, and I look forward to having LG's high-quality home appliances made right here in the United States starting in early 2019."

Under terms of the development deal, LG will receive support for construction, infrastructure improvements, job training and veteran recruitment from Tennessee and Montgomery County. The project also includes incentives from the Tennessee Valley Authority.

LG will be the third major corporate presence in Clarksville, following Hankook, the Korean tire manufacturer, and Google, which maintains a data center there.

ASSOCIATION of TENNESSEE VALLEY GOVERNMENTS

Association of Tennessee Valley Governments
Fall Meeting October 17 & 18, 2017
Black Bear Inn – Gatlinburg, TN – 1-800-933-0777

October 17, 2017 (Eastern Time Zone)

ATVG Program

2:00 p.m.	**ATVG Annual Meeting and Election**	
2:45 p.m.	**Welcome and Introductions**	- *Mayor Gary Reasons, ATVG President* - *Mike Arms, ATVG Executive Director*
3:00 p.m.	**Associated Valley Industries**	- *Odell Frye, Executive Director*
3:30 p.m.	**Tourism & Tennessee Distillers Guild**	- *Kris Tatum; President of Distillers Guild*
4:00 p.m.	**Opening Reception and Networking**	
6:30 p.m.	**Dinner at Park Grill**	

October 18, 2017

8:00 a.m.	**Breakfast at the Black Bear Inn lobby**	
9:00 a.m.	**Nature Walk (Optional Activity)**	
12 Noon	**Pizza Lunch (Optional or lunch on your own)**	
1:00 p.m.	**Welcome**	- *Mayor Gary Reasons*
1:15 p.m.	**TVA Update**	- *Bert Robinson, TVA*
1:45 p.m.	**Wildfire Recovery**	- *Mayor Larry Waters*
	Sevier County Utility District	- *Matt Ballard; President SCUD*
2:30 p.m.	**Break**	
2:45 p.m.	**Environmental Update SMNP**	- *Jim Renfro; SMNP*
3:15 p.m.	**Environmental Update TVA**	- *Brenda Brickhouse; TVA*
3:45 p.m.	**Break**	
4:00 p.m.	**Aquatic Plant Management**	- *Brett Harris*
4:30 p.m.	**Dam Safety**	- *David Bowling*
5:30 p.m.	**Hospitality**	- *Polk Suite*
6:30 p.m.	**Dinner at Crockett's Skillet**	

Please help us make necessary arrangements by letting us know if you will be attending. Send the enclosed registration form by email to: registration@atvg.org or by U.S. mail to: ATVG, P.O. Box 3578, Clarksville, TN 37043.

Association of Tennessee Valley Governments Meeting Registration Form

Registration Fee: $40.00 for members and affiliates; $95.00 for non-members

Name: _____

E-Mail: _____

Spouse's Name: _____

Registration Fee for spouse is included/No additional charge

Company/Organization: _____

Full Address: _____

Make checks payable to: *Association of Tennessee Valley Governments- P.O. Box 3578 – Clarksville, TN 37043*

Despite Rumors, TVA Still Spraying

TVA continues to spray herbicides in Guntersville Lake to control aquatic vegetation, despite some rumors to the contrary. Word has been going around that TVA stopped its spraying after getting a cease-and-desist order. That's not what happened.

"The last week in August we received a concern from a stakeholder about aquatic plant management activities, specifically on Watts Bar Reservoir," TVA spokesman Scott Fielder said. "Safety is our primary concern. We wanted to provide the facts about our aquatic plant management procedures to avoid any confusion. We've done that and resumed our normal treatment schedule."

TVA contractors now have signs on their air boats saying "TVA Contractor" and flashing lights on top while treating an area. "This should help folks better understand the areas TVA treats and that we will only treat our normal near-shore areas with EPA-approved aquatic herbicides," Fiedler said.

He said the confusion at Watts Bar might be why people on Guntersville notice the new signs and lights on spray boats here. They are also adding information to the TVA website about the signs and spray boats.

He said not everyone around the valley understands the spraying program as much as Guntersville residents, since it's been going on so long here and since TVA has had efforts to educate the public.

Interest Grows in SMRs Despite Setbacks with Full Size Reactors

Canadian National Laboratories said on August 18, 2017, that more than 70 organizations submitted responses to its request for expressions of interest in small modular reactors (SMRs). More than 15 expressions of interest were for the construction of a prototype or demonstration SMR at a CNL site.

CNL, Canada's premier nuclear science and technology company, said the 70-plus organizations included SMR technology developers, potential end users, potential host communities, members of the nuclear supply chain and academic institutions. CNL said the responses demonstrated a global interest in advancing SMR technology in Canada and align with its goal of siting a new SMR on CNL's Chalk River site in Ontario province by 2026. SMRs provide a potential alternative to large-scale nuclear power reactors, and CNL said the technology holds opportunities particularly for remote communities and industrial sites.

Advantages over traditional technologies include the ability to purchase and construct in a modular way, decreased up-front capital costs through simpler, less complex plants, and reduced staff. Designs can also bring greater efficiency and systems which are inherently safe. SMRs could also be integrated in overall energy plans with applications as varied as district heating, co-generation, energy storage, desalination, or hydrogen production. Small modular reactors are being developed with electrical power outputs of as little as 5-10 MW.

SMR LLC, a subsidiary of Florida-based Holtec International, has been granted access to the Oak Ridge National Laboratory (ORNL) by the US Department of Energy (DOE) in support of the development of the SMR-160 small modular reactor design. Holtec said DOE's support will come in the form of a voucher worth $500,000, which will be used for access to "expertise and capabilities" at the national laboratory in Tennessee. The funding will come from DOE's Gateway for Accelerated Innovation in Nuclear (Gain) program, established to provide the US nuclear community with technical, regulatory and financial support in commercializing nuclear innovation.

2 Area Sites on Alabama's Early List for Auto Plant

Alabama and several other states are vying for a 4,000-job automotive plant, and sites in Lawrence and Limestone counties are on a preliminary list of locations that could meet requirements, officials said.

"I can't really talk about it, other than the fact that we do have a site that does qualify for it," Tony Stockton, president of the Lawrence County Economic Development Association, recently said, "There are a lot of sites over the state that meets the acreage requirement and we're fortunate to have one here."

Similarly, Tom Hill, president of the Limestone County Economic Development Association, declined to talk specifics. "All I can tell you is we have a really nice site out there that's a (Tennessee Valley Authority) mega site," Hill said.

The 1,252-acre area in Huntsville's limits was declared a mega site last year. To earn the TVA certification, a site must be at least 1,000 acres with interstate access, have the potential for rail service, and have utility service capable of serving a major manufacturing company.

ATVG Upcoming October Meeting

The ATVG meeting in Gatlinburg, Tennessee this October has some outstanding programs planned (please see the complete agenda and speakers inside). This will also be our annual meeting which includes elections of our officers and new Board members.

Our officer slate for 2018 is:

- President: John Gentry; McMinn County, TN
- Vice – President: Brad Warning; Morgan County, KY
- 2nd Vice – President: Kirk Day; Cherokee County, AL
- Treasurer: Brent Greer; Henry County, TN
- Secretary: Frank McKee; CTAS (Retired)

Please mark your 2018 calendars for our Winter Meeting in Murfreesboro, TN (January 24th and 25th at the Embassy Suites) and our Spring Meeting in Paris, TN (April 25th and 26th includes the Fish Fry). We will also be in Muscle Shoals, AL in July, so make plans now to join us!