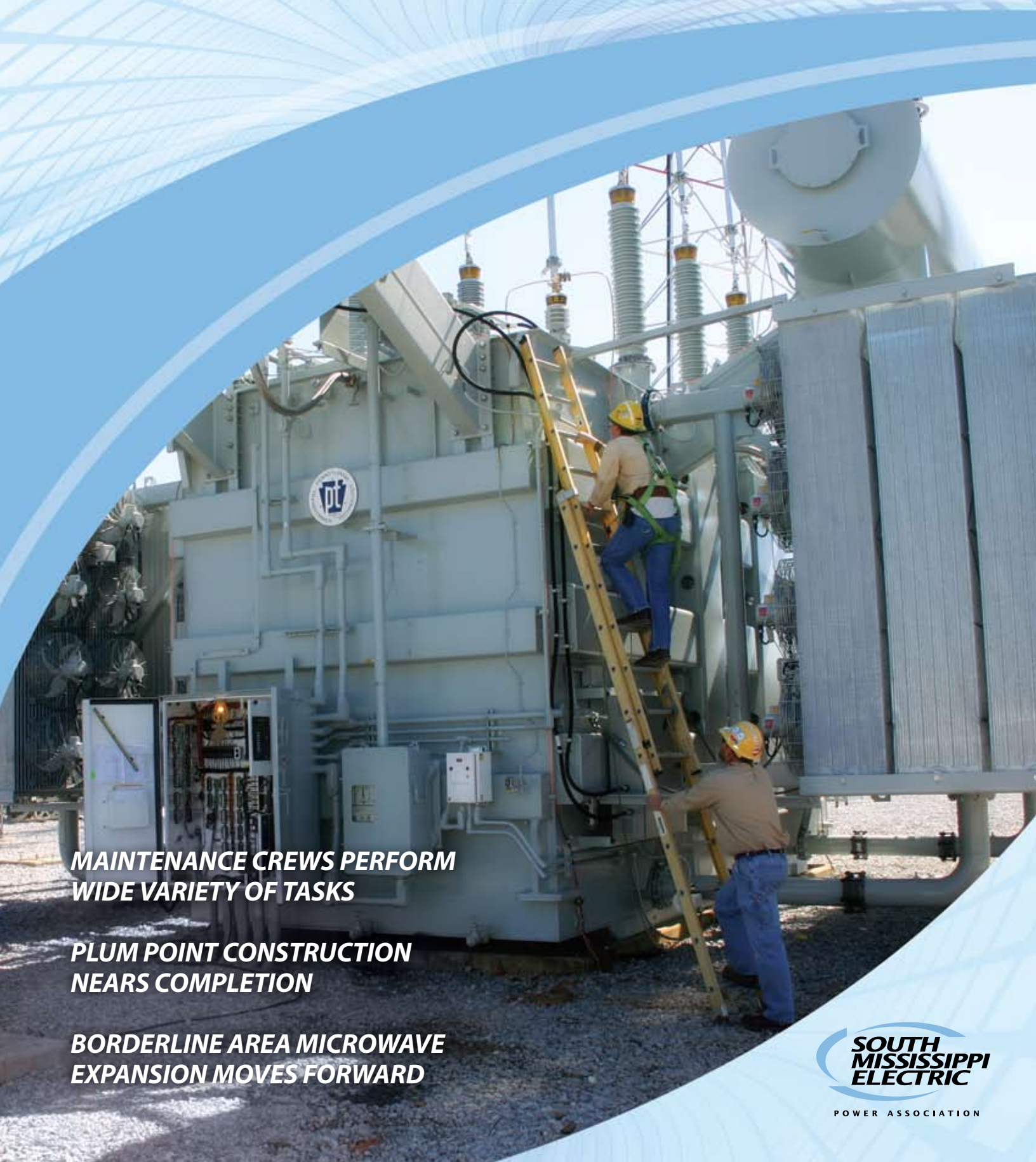
SCANNER

MAY 2010 - VOLUME THREE - ISSUE TWO



MAINTENANCE CREWS PERFORM WIDE VARIETY OF TASKS

PLUM POINT CONSTRUCTION NEARS COMPLETION

BORDERLINE AREA MICROWAVE EXPANSION MOVES FORWARD

SOUTH MISSISSIPPI ELECTRIC

POWER ASSOCIATION

SCANNER

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The Scanner Magazine is published quarterly for
employees and retirees of South Mississippi Electric
Editor: Kurt Brautigam, APR
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Cover photo: Technicians Josh Beech (on ladder) and Matt Simpson help with final installation of the new 448MVA transformer at Purvis Bulk substation

ELECTRICITY IS THE KEY DIFFERENCE BETWEEN AMERICA'S PRESENT AND PAST

Jim Compton,
General Manager/CEO

I am currently reading *Team of Rivals* by Doris Kearns Goodwin, a noted U.S. historian. The book follows the four candidates for the 1860 Republican Presidential nomination, including their early lives, their families and their political struggles. Ultimately, Abraham Lincoln won the party nomination and was then elected President. The men he defeated–William Seward, Salmon Chase and Edward Bates–all believed that Lincoln was the wrong choice. Despite that, the victorious Lincoln made the unprecedented move to ask all three rivals to serve in his cabinet. Those rivals, who disdained Lincoln initially, ultimately became a strong team, with Lincoln as undisputed captain, and led our country through perhaps its most difficult times.

As the book details the personal lives of the four rivals, it is shocking how many lives were cut short in that era. Chase's father died when Chase was eight. Later, he lost three wives to early deaths: Catherine died of childbirth complications; Eliza died of tuberculosis at twenty-five; and Sarah also died early. Chase also lost two children, at ages one and five. Bates was eleven when his father died, and his brother was killed in a duel. He also lost several children early. Seward was the only one of the four whose parents lived into his adulthood. He lost his wife, Frances, as well as several children. Lincoln lost his mother when he was nine, two of his own children before they reached adulthood, and his older sister died in childbirth. Few people of that era knew their grandparents, as men were lucky to live to age forty-five, according to the book. Those examples made me curious about life expectancy for that era.

After some research, I found life expectancy tables for males and females living in Massachusetts in 1850 and 1890. In 1850, males lived to an average age of 38.3 years and females an average of 40.5 years, despite staggering numbers of deaths during childbirth. By 1890, life expectancy for the same state had risen to 42.5 years for men and 44.5 years for women. Life expectancy has continued to increase since then, to where it is now essentially double that of 150 years ago. It is amazing to me that although recorded human history extends back for thousands of years, only in the past century and a half has life expectancy significantly changed.

What has occurred since the last half of the 19th century to increase life expectancy? One factor was the Industrial Revolution and the introduction of the steam turbine and steam engine, which revolutionized shipping. These inventions permitted railroads and steamships to transport goods and people reliably and economically. The petroleum industry began, with the corresponding development of the chemical industry. But most importantly, electrical engineering began to transform electricity from a scientific curiosity into energy that could be used productively and transported long distances. By the end of the 19th century, American engineers had developed alternating current, three-phase power, and had built America's first hydroelectric generating plant at Niagara Falls. Electricity would transform the world through lighting, food preparation and storage, industrial processes, and communication.

Electric energy has revolutionized the conditions under which we live. With electricity, we can better control our working and living environments, avoiding exposure to insects and disease. Medical technology, hospitals and clinics, and diagnostic equipment all rely on electric energy to help us prevent and treat diseases or other health issues. As a result, we now live longer and live better.

Of course, the production and delivery of electric energy has its own drawbacks and challenges. Direct contact with electric current can be deadly. Traditionally, the generation of electricity requires fuel, which must be mined or otherwise extracted from the earth. Utilization of such fuels results in residual chemical elements, which must be appropriately addressed. We strive to improve our ability to lessen the adverse environmental impacts from electric generation, but there will always be some environmental impact resulting from energy usage. The next anticipated political challenge is associated with carbon regulation and legislation. We believe that it is fairly debatable whether CO_2 is actually a pollutant of concern. That scientific debate is not yet over, although some have tried to suggest that there is now a final scientific consensus. Nonetheless, regulating processes are underway to limit carbon emissions from electric generation.

The great concern we in the electric industry have–and it should be a general concern for all consumers–is that analysis of the proposed regulation and legislation relative to carbon leads several commentators to conclude that we would return to a "carbon footprint" or energy usage equivalent to that of America around the Civil War. In other words, unless there is an incredible breakthrough in energy technology, we would be required to make draconian reductions in our energy use from fossil fuels in the next two decades to achieve the proposed carbon reductions.

But will that diminished level of energy use take us back to a similar quality of life that existed in 19th century America? Would we lose the scientific and medical advances which electric energy has created for us, including longer life expectancies? One of the 19th century advances was to move from wind to steam as the motive force for ships. With sails, the ship only moved when the wind blew, and that made timely schedules impossible. Yet in today's debate regarding electric generation, we seem to be reversing that improvement and going from steam back to wind as the motive force, with a resulting loss of the ability to meet a schedule.

Let us continue our political and educational efforts to see that all who are making decisions about our industry recognize the great value of electric energy in our lives, and the need to balance environmental concerns with the prospect of a dark and dangerous world without reliable, affordable electricity. Let us also continue to remember how important our work is and the value South Mississippi Electric brings to the lives of more than one million Mississippians.

Substation Maintenance Tasks Expand with SMEPA's System

Imagine the force required to break the current flow at 161,000 volts into or from a transmission substation. Like any switch or breaker in your home, the circuits that connect South Mississippi Electric's various lines and substations all have protective equipment to isolate sections that experience a fault.

The power on each three-phase line, whether 69kV, 161kV or 230kV, passes through a circuit breaker as it enters or exits a substation on the way to a transformer or switch, either to feed a Member delivery point or to tie into other lines added over the years to reliably feed SME's expanding system. Each line and all major pieces of equipment within a substation are protected by a relaying system that monitors the flow of power and interrupts that flow if any problem or excessive current is detected. If the relay system senses a fault, massive breakers—which under normal operations are closed—are forced open, breaking the circuit in order to prevent the potential problem from affecting the rest of the system.

Technicians Matt Simpson and Kenny Casanova perform battery maintenance at Waynesboro

SME's transmission system has 270 breakers, 65 transformers, 142 motor-operated switches, 28 circuit switchers, 100 battery banks and chargers and 56 control buildings. Of course, as the system expands, those numbers steadily increase, but many of the components have been in service since their initial installation as far back as the late 1960s.

Although the technology related to circuit breakers has changed dramatically over the years, the mechanical process has not; whenever a fault is detected, a strong mechanism using either a spring, air or hydraulics displaces a mechanical linkage inside the breaker to physically break the electrical connection, interrupting the fault current on that circuit. Doing so causes a massive arc, which is suppressed either by mineral oil, a vacuum, or a very dense inert gas (sulphur hexofluoride, or SF6), depending on the technology used by the breaker interrupters inside each tank.

"The entire system is designed to prevent any kind of fault from causing more damage to the transmission system," said John Gilbertson, substation and communications manager. "Our breakers are able to interrupt an arc within three to five cycles (0.05 to 0.083 seconds) if necessary and will reclose if the fault clears. However, the arc caused by opening a faulted circuit is significant and could cause quite a lot of damage if not contained within the breaker."

And because there are relatively frequent faults and breaker operations somewhere on the system, there is a continuing need for maintaining the equipment that responds to such incidents. "SMEPA has always placed a high priority on maintenance," said Supervisor of Substation Maintenance Jeff Ladner, who has been with the Association for 31 years. "The substation maintenance crews are responsible for regularly maintaining all the equipment in our stations, as well as transformers, motor-operated switches, battery banks and substation control buildings. We do routine inspections, make repairs and paint equipment as needed.

"The equipment we maintain is built to last—much of it was here before I got here and most of it will be here long after I'm gone."

Precise records are kept on each piece of equipment, and maintenance is performed on regular schedules. The crews also respond to any needs revealed through monthly visual inspections. "If there is a leak, we fix it," Ladner noted. "If something is not right, we fix it. All substation equipment is on a preventive maintenance (PM) schedule, and we will adjust the schedule whenever necessary to ensure that all components continue to function properly."

The older breakers can be ten to twelve feet tall and hold about one thousand gallons of mineral oil in each of three tanks that house the interrupters. Whenever a breaker operates, the resulting arc creates carbon residue and gases that will eventually reduce the oil's capability to properly contain the violent event. During maintenance, the oil is drained, filtered and tested to ensure its dielectric capacity to perform. Maintenance crew members must also physically climb into the close confines of the breaker to clean the tank interiors and inspect the interrupters. Then the filtered oil is returned.

Technicians Josh Beech and Matt Simpson both have an associate's degree in electronics, which have helped them adapt to the new testing equipment, electronic controls and equipment in the field, and to the computers that are now part of the maintenance program. While many of the tests still measure the same kinds of mechanical processes performed by components on the system, the diagnostic equipment has evolved, which helps with maintaining performance records for each component.

"As much as we work with a wide variety of technology, it can still be a tough, physical job," said Beech. "We are responsible for so many different components; we have to crawl in tanks and change out bad bushings. We work on oil breakers at least once every three to five years and gas breakers every five years. Transformers are also on a three-year schedule. Motor-operated switches, circuit switchers and battery banks are on a semi-annual schedule.

"Our substation equipment is in amazingly good condition, especially the older pieces. The maintenance program has obviously helped prolong the effective life of all the equipment."

Circuit breaker maintenance also includes inspecting the interrupter contacts and mechanisms that control the operation and breaker contact travel and speed, and checking and testing all other components and functions, including alarms, breaker timing, current transformer ratios, saturation and insulation, and power factor tolerances.

Transformer maintenance has many parts. Measurements are taken for the power factor of transformer windings and bushings, transformer turns ratio (TTR), oil dielectric level, and insulation resistance. Tests are performed on current transformers (CTs), all electronic and analog gauges, nitrogen regulation systems, sudden pressure relays, and all transformer alarms and indications that are monitored by the control center. Typical maintenance also involves testing, inspecting, and cleaning the load tap changer (LTC), as well as collecting oil samples for dissolved gas analysis (DGA).

"Gaining experience working with all the different equipment is the most important aspect of our jobs," said Simpson. "There are so many different kinds of controls and equipment that it really takes being out here for several years to know what to expect on each job, especially when we are troubleshooting."

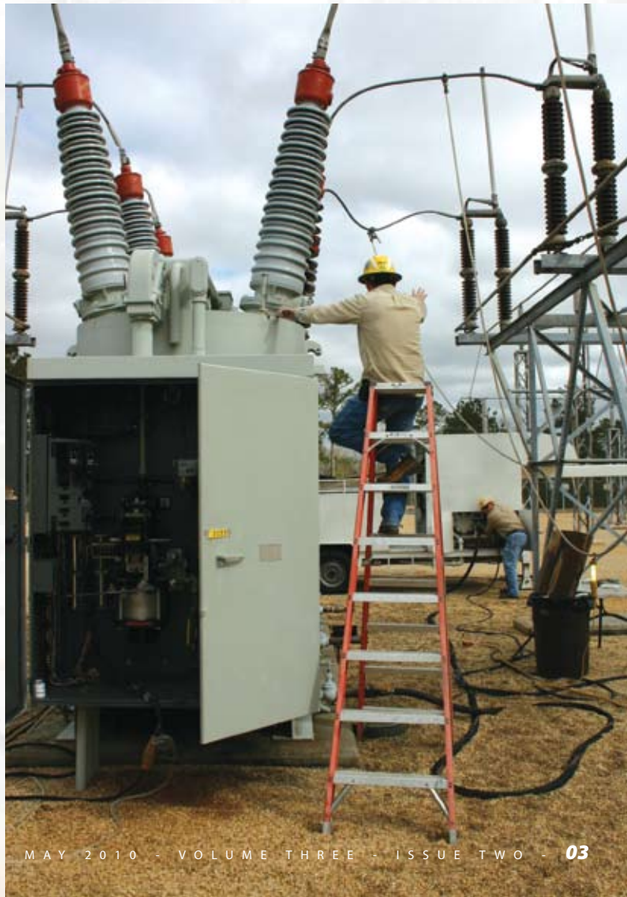
The eleven-man substation maintenance group shares the wide variety of continuous tasks required all around the system. These employees also are available to provide help to Members, as needed, with oil handling equipment and breaker and transformer testing equipment—which many Members do not have—and with helping to set up the mobile substations whenever and wherever needed. The technicians also make annual infrared inspections for most Members, as well as for the Association's transmission and generation sites.

Many of the jobs require working closely with the system operators and Bulk Power Operations planners in order to schedule outages, especially for transformers and breakers that must be off line to undergo maintenance. "We work closely in order to maintain reliability and compliance with NERC regulations," said Ladner. "Scheduling can become difficult if we experience weather delays and system loading issues, especially as the system expands. There are only so many months in the year when we can take outages at most of our substations, and we try to plan two weeks to several months ahead for outages at major facilities." One of the more overlooked but important jobs assigned to the substation maintenance crews is maintaining the DC (direct current) batteries located at each facility. The batteries provide an isolated, continuous power supply to operate protective relays, equipment control circuits, and circuit breakers in the substation.

"While there are components of a station that run on AC (alternating current), the batteries provide the stable power supply to operate the substation equipment when it is needed the most—during a fault on the transmission system," explained Kenny Casanova, technician I. "It is essential that we can maintain the critical communication and operations functions within our facilities at all times, so the battery banks are inspected regularly to make sure they stay at full strength."

Inspections include load testing, internal cell conductance, and specific gravity measurements, as well as ensuring that the cell connections are clean and functioning properly. Each substation may have up to 60 cells for a 125vdc battery bank that acts as a combined source of power for the operation of protective circuits and equipment. The battery banks are attached to a charger to keep the cells at full strength; generally the batteries last about twenty years if maintained properly.

Technicians Josh Beech (on ladder) and Matt Simpson refill the oil on a 161kV breaker at Columbia



Plant Morrow Maintenance Crews Face Unique Challenges

During major planned outages and throughout the rest of the year, mechanical maintenance crews at Plant Morrow work continuously to inspect, repair, and replace equipment. Their responsibility is to ensure the overall reliability of the plant. More than 25 employees–including supervisors, mechanics, painters, laborers and a tool room issuer–work together to regularly examine each detail of more than 2,000 assets that contribute to the plant's complex systems, a responsibility not taken lightly by the crews.

"Each member of the maintenance team understands the significance of his work," said Mechanical Maintenance Superintendent Jeff Brown. "The plant's systems are so complex and interrelated that one malfunction can have broad consequences. Our responsibility is vital, and we take that role very seriously."

Coal is abrasive and corrosive by its very nature; therefore, most of the equipment at Plant Morrow requires frequent inspection and repair. From the coal pile through the conveying system and on to the bunkers, feeders, crushers, ball mills, and classifiers, the abrasiveness of the coal constantly wears away at the machinery. When the sulfur in the coal, fly ash, or un-scrubbed boiler exhaust gas mixes with moisture, sulfuric acid is generated. This causes a constant battle with corrosion.

"Much of the equipment that comes in direct contact with the coal is repaired or replaced during each outage," Brown said, "and not all of those repairs are easy to make. The crews must crawl into tight spaces in order to weld, repair, or replace much of the equipment. The conditions are not ideal, but the work must be done correctly in order for the equipment to operate properly and at its highest level of efficiency."

Even after the coal is pulverized and burned in the boiler, the by-products (fly ash and bottom ash) are abrasive to the equipment that it passes on the way to the precipitator or to the bottom of the boiler. Boiler repairs are frequently necessary because the ash, carried by extremely hot flue gases, comes into contact with the tubes inside the boiler. The components inside the duct work and precipitators are also affected.

Mechanic I Charles Gray grinds a part while making repairs to a classifier

(photo at left) A ruptured boiler tube gives an indication of the pressure and heat to which the tubes are subjected

But that is far from the beginning or end of plant maintenance. "From the coal pit to the control room and the turbine to the toilet, there are always maintenance repairs that need to be made," said Brown. "Recently during a scheduled outage, a tiny leak was found in a boiler tube, which emphasizes the need for regular detailed inspections. Had the small leak not been found, a major leak would ultimately have developed, causing a forced outage at some point in the future."

With nearly 57 miles of tubing in each boiler and 24 different types of tubes throughout the units, identifying and repairing boiler tube leaks are a major part of plant maintenance. The common causes of boiler tube leaks at the plant are corrosion, fly ash erosion, soot blower erosion, and thermal stress cracks.

"Every three years we perform non-destructive examination (NDE) testing on select areas of the boiler, headers, and high energy piping," said Brown, "but boiler tube leaks can occur at any time. During an outage, leaks can be found by identifying dark spots on the tubes where the steam has cleaned the fly ash from tube surfaces. We can also find leaks by performing air tests during an outage and listening for leaks while crawling through the boiler. When a tube leaks during operation, we can hear it; or sometimes we are able to see the result of the leak on the daily water usage. Leaks in the economizer area that are not detected in a timely manner can cause further maintenance activities downstream of the boiler."

Before repairs can be made on the tubes, the air temperature inside the boiler must be reduced to below 120 °F. This process can take 12 to 24 hours. When the repair is in the furnace side of the boiler and requires the use of the spider climber, the penthouse metal temperature must be below 250 °F to prevent damage to the safety ropes. This usually requires an additional 12- to 24-hour delay before repairs can begin. Repairs must be performed when the equipment is prepared for the work and with the conditions safe for the crews.

"During planned outages, we work hard to find small leaks and eroded areas that are potential leak points so that we can prevent a forced outage down the road," added Brown. "The forced outage rate due to boiler tube leaks at Plant Morrow is less than half of the national average for similarly sized coal units." *(Editor's note: From 2004-2008, Plant Morrow's forced outage rate was 1.33 per 8,760 operating hours, compared to 3.06 for all units 200-299MW.)*

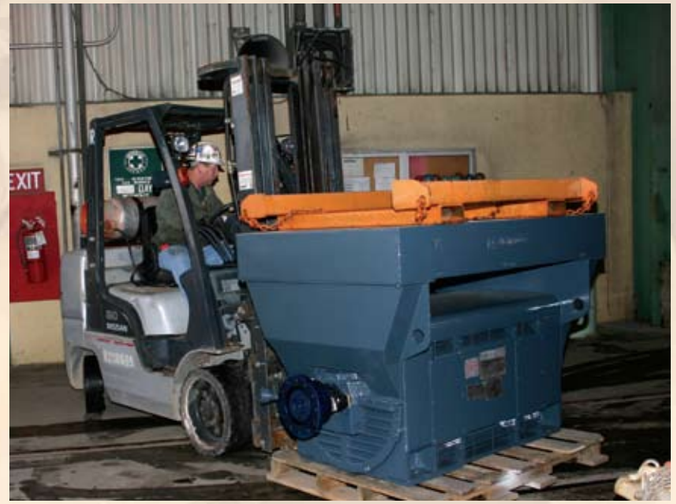
Planned outages normally occur every spring and fall to perform preventive maintenance tasks that cannot be completed while the units are in service.

Major repair projects, which involve the plant's maintenance crews and outside contractors, are also completed during these times.

"Routine tasks for planned outages include oil and filter changing, greasing equipment and drive couplings, repacking valves, replacing damaged valves, and replacing worn components on critical equipment," said Mechanical Maintenance Foreman Jerry Nelson. "Over the years, however, our outage windows have become smaller and our work load larger due to power demand and the age of our plant. This is evident by the increased use of contract labor and the fact that our department has only three more mechanics than it did in 1978."

Last fall, the entire Plant Morrow team had a unique opportunity to inspect major components when both units were off line at the same time.

"The major reason for the total plant outage was to inspect the main circulating water system and refurbish the large butterfly valves," said Nelson. "This system is common to both units. The engineering department, operations group, and contractors were the most involved with this project. This project went well and we received a good report."



Mechanic I Landell Smith transports a primary air fan motor to be installed

"During the outage, mechanical maintenance crews removed access covers, installed ventilation fans, and replaced vent valves in preparation for the circulating water line inspection," said Tommy Mills, mechanical maintenance planner. "It was a unique experience being able to look inside the underground circulating water pipes when they were empty. It is hard to imagine the amount of water they carry to the plant every day. I can remember only two or three times when the plant was that quiet (with both units down) in my 31 years of service, with one of those being after Hurricane Katrina."

Also during the total plant outage, routine outage tasks were ongoing on both units. "We took this opportunity to repair several pieces of equipment in the dewatering building that could be accomplished with one unit operating, but it was much easier done with both units down," said Brown.

The crews remain busy throughout the year–even between planned outages. Crews are responsible for the day-to-day operation of each piece of machinery in order to maintain the performance of all the plant's systems and equipment. Work orders are submitted from every department at the facility, but a majority comes from operations, as they are the ones running the equipment. As work orders are submitted, Mills gathers the materials and develops a plan of action with the foremen, Nelson and Doug Hartfield. The foremen assign tasks to the crews and maintain the flow of work until the projects are completed. Often equipment can be repaired while the units are on line or by scheduling equipment that will be out of service for repairs by reducing a unit's load rather than taking a unit outage.

"A large amount of prep work is completed between outages," said Brown. "Materials are ordered, work scopes are developed, and contracts are issued for the major maintenance tasks. All work orders, routine and non-routine, are planned to determine manpower and material requirements. Whenever possible, items are pre-fabricated and materials are staged in the plant to reduce the workload during the outages. This helps to ensure that planned outages are completed on schedule and that spare parts and equipment are ready in the event of an unplanned outage."

As with other departments throughout the Association, preparing a workforce that can respond to future needs is an issue that must be addressed.

"In the last few years, the mechanical maintenance department has lost several veteran mechanics to promotions, retirement, and moving to other SMEPA facilities," said Nelson. "The training of our younger mechanics is a top priority and one of our greatest current challenges. We have talented employees who are accepting this responsibility."

"At Plant Morrow, the mechanical maintenance crews may be exposed to some of the most dangerous working conditions within the Association," said Hartfield. "We are required to work in very hot, dusty and noisy conditions and at heights that can exceed 200 feet. We work around piping and equipment with steam pressures of 2400 PSI and temperatures of 1000 °F. Safety is always the greatest challenge we are faced with, whether in a planned outage or just a routine day at work. During the outages the crews are faced with difficult deadlines that must be met. It takes talented and skilled people to meet the demands that the mechanical maintenance department is faced with on a daily basis."

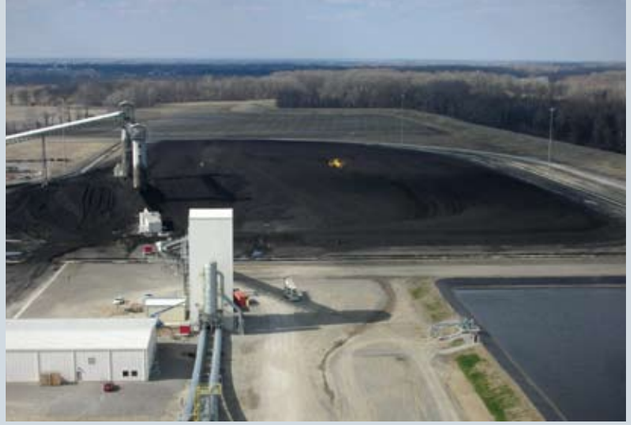
Plum Point Construction Nearly Complete

A new, key addition to South Mississippi Electric's generation mix is on schedule to come on line later this year. The 665MW Plum Point Energy Station, a state-of-the-art coal-fired facility located on the Mississippi River near Osceloa, Arkansas, is expected to begin commercial operation in July.

SME has a 30-year power purchase agreement (PPA) for 200MW of the new plant's output. The rest of the facility's output is divided among several other utilities, including Southwestern (Ill.) Electric Cooperative (78MW), the Missouri Joint Municipal Electric Utility Commission (197MW), East Texas Electric Cooperative (50 MW), Empire District Electric Company (100MW), and the Municipal Energy Agency of Mississippi (40MW).

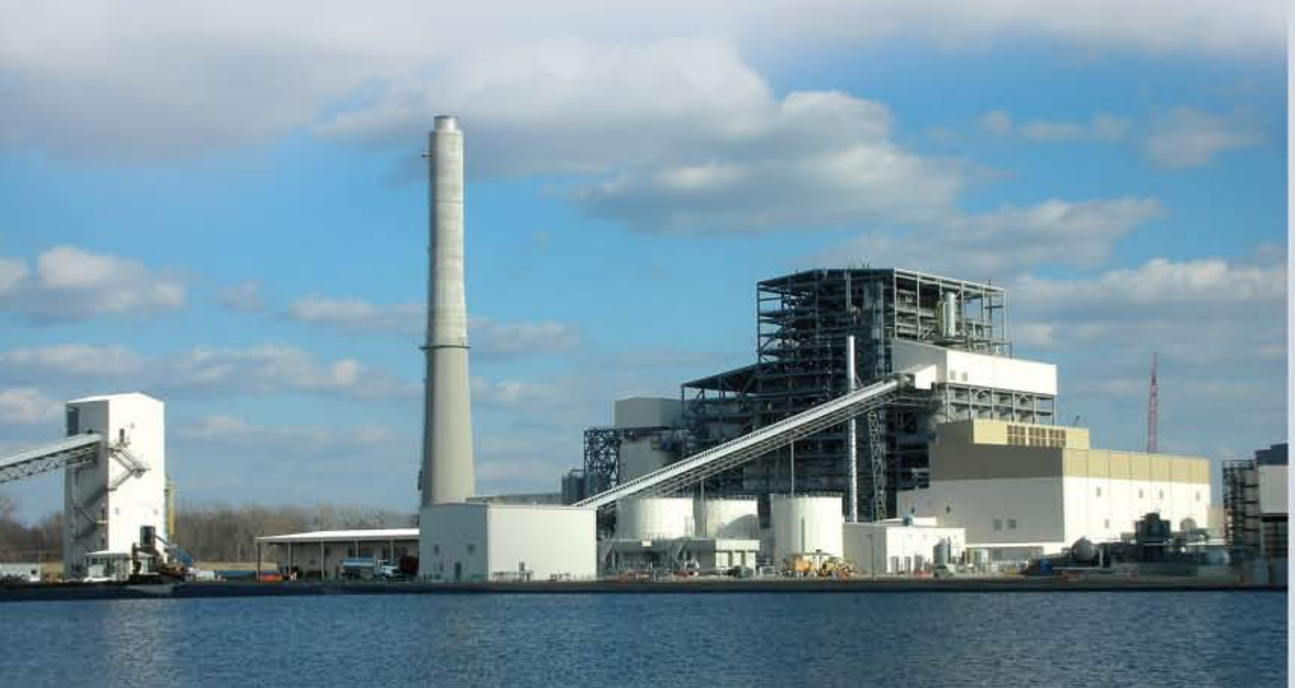
While SME's contract is with Plum Point Energy Associates, the overall project has been developed by Dynegy Services, a large player in the U.S. wholesale electric industry with more than 12,000MW of capacity located in the Midwest, Northeast and West Coast. North American Energy Services Corporation (NAES), a global generation services company, will oversee the operation and maintenance of the plant. Approximately 80 full-time workers will man the facility when it comes on line.

"We began looking for new baseload generation resources about five years ago, and there were several options available at the time," said John Carley, power supply consultant. "In addition to considering self-build options, SMEPA issued a request for proposals (RFP) to market participants. Although Plum Point was not the leader in the original short list of respondents, further negotiations ensued, and the Plum Point power purchase proposal was later deemed to be the best overall option. This was primarily due to the delivered cost of fuel, the capacity cost, and the overall efficiency of the facility.



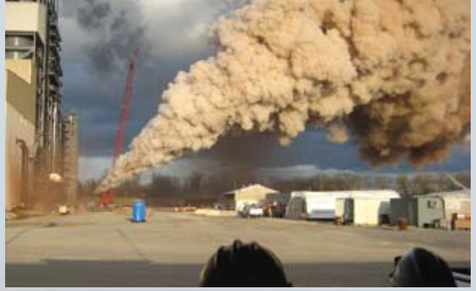
"At the end of the agreement, we will have the option of extending the PPA for an additional ten years at a very favorable capacity cost or buying our portion of the plant at fair market value."

SME signed the PPA in July 2006, several months after the project had received its initial permits and approvals. Construction began in November of that year, and the first foundations were laid in February 2007. Other milestones have included beginning construction on the boiler structure (July 2007); building the rail interconnection for coal delivery (August 2007); receiving the initial coal delivery (November 2009); and initiating the first coal fire in the boiler and synchronizing the generator to the grid (March 2010).



(photo at left) The plant's coal storage area can accommodate a 62-day coal supply

(photos at right) During construction, more than 500 steam blows were conducted to purge the system of debris and impurities



The first 24-hour operation at full plant load occurred in April, after which the plant was shut down to allow for inspection and the removal of fine mesh screens placed in the steam turbine's inlet stop valves for the initial run. To date, more than seven million man-hours have been expended in the construction of the facility.

"The construction has gone very well," said Assistant General Manager Marcus Ware, who has acted as the Association's liaison with the developers. "As with any project of this size and complexity, Dynegy has encountered its share of challenges; but they have managed each very well."

The plant, which is situated on 880 acres of delta land approximately 55 miles north of Memphis, will use treated water from the Mississippi River for its operations, including boiler feed water and the cooling tower systems. Potable water will be supplied through the Osceola city water system.

Plum Point's boiler is designed to burn Powder River Basin or Illinois coal and will function with steam temperatures and pressures comparable to Plant Morrow. To meet environmental regulations, the plant has installed lime spray dryer type scrubbers for SO_2 removal, SCRs (selective catalytic reduction units) for NOx removal, a baghouse for particulate collection (the plant does not have precipitators), and activated carbon injection for mercury control. Once collected, the fly ash and scrubber waste will be transported to an on-site landfill, which has the capacity to serve the facility for more than 30 years. Bottom ash will also be placed in the landfill.

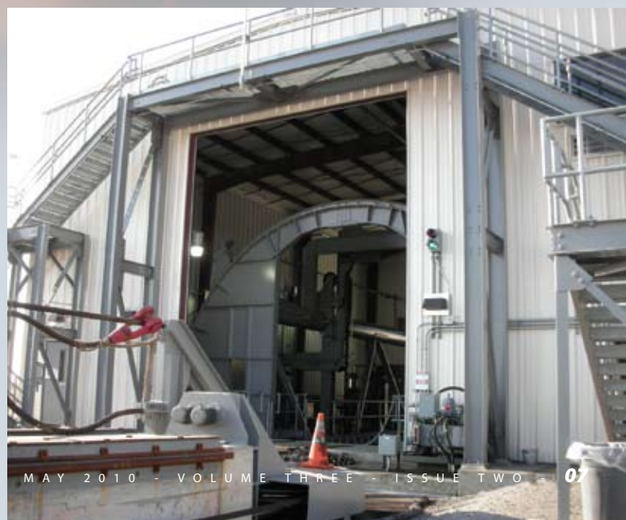
Unlike coal delivery at Plant Morrow, where the trains pass over a trestle to drop coal into a long pit and then onto a conveyor system, Plum Point's coal unloading system will actually use a rotary coal dumping system that physically flips each railcar to empty the coal. The Plum Point process will take approximately five hours to unload a train, compared to the hour or less required to empty a train at Morrow. From Plum Point's unloading area, the coal can be routed to a storage silo that feeds the plant directly or moved to a storage pile. The coal storage area, which will initially be capable of maintaining a 62-day supply, has room to allow for expansion if necessary.

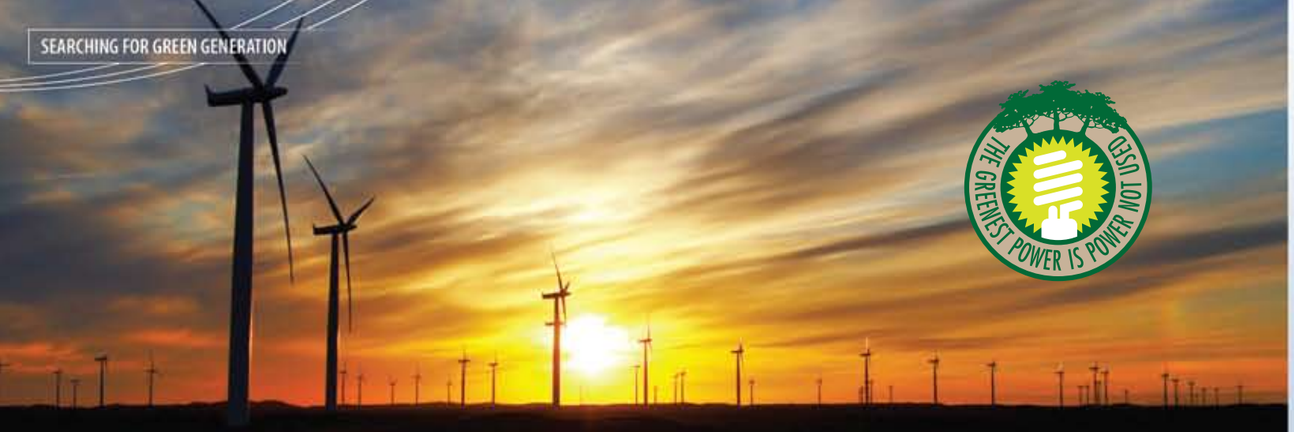
The rotary dump system is designed to flip each railcar upside down to unload the coal

The plant will burn approximately three million tons of coal per year, which will be delivered via the Burlington Northern Santa Fe (BNSF) mainline that is adjacent to the plant site. Four trains of 135 railcars will provide fuel for the new plant, each running on seven- to ten-day cycles, depending on rail congestion. Overall, 715 railcars have been purchased for the operation, allowing for an additional train to be used as needed. During February and March, sixteen trains carrying 262,000 tons of coal were delivered; at that point the plant had received more than 527,000 tons overall.

The facility's energy output will be produced by a single Toshiba turbine-generator and will enter the grid at 500kV in Entergy Arkansas' service territory. SME executed a Transmission Service Agreement with Entergy to obtain the firm point-to-point transmission service required to deliver the output of the facility to Association load within the Entergy Transmission System. Firm transmission service began on May 1, 2010 and extends through the life of the PPA.

"With the overall construction essentially complete, we are now beginning to see everything come together," said Ware. "In the last two months, construction crews continued to test and commission numerous components, especially those associated with putting the coal fire in the boiler, including water treatment systems, ash collection systems, pulverizing systems, sootblowers and control equipment. When the facility begins commercial operation sometime this summer, it will be a very valuable addition to our fleet of owned and controlled generation resources."





Large-Scale Use of Renewables Still Far from a Reality

Despite increased efforts over the past several years, finding economical ways to make use of renewable resources to produce bulk power in Mississippi remains an elusive goal. While Congress continues to debate legislative options and federal officials continue to look for answers, the reality is that renewables are typically more expensive and less available and reliable than conventional generating resources the industry has in place to meet customer demand, especially in the Southeast.

The search for cleaner, self-sustaining energy sources has been pursued in the U.S. since the late 1970s. Most efforts to help develop viable renewable sources have required significant subsidies, but the relative cost of most projects involving wind, solar and other "green" sources remains high. After more than thirty years of trying to find alternative resources, more than 90% of America's large-scale electric generation is still provided by coal, natural gas and nuclear facilities.

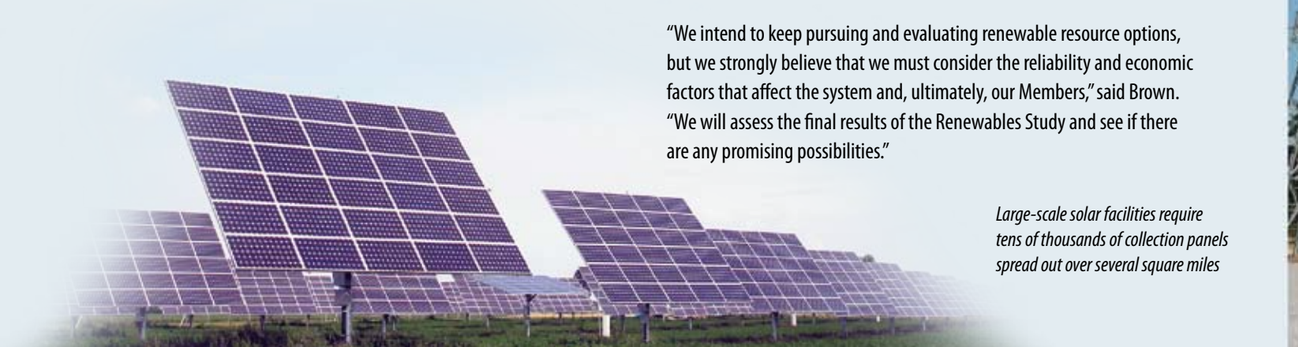
The most recent push for renewables has come within the past few years, as many states have passed requirements calling for fixed percentages of electric generation to be "green" and the Obama administration has pressed for national renewable portfolio standards. To date, a few states have reached their short-term goals, but many are reassessing the cost of expanding such measures. This year regulators in California, Rhode Island, Florida and Kentucky have rejected renewable-related projects because of associated rate impacts.

"South Mississippi Electric and its Members support the idea of finding ways to generate and deliver green power, but the issue needs be considered within the proper economic realities," said Nathan Brown, chief operating officer. "We have had conversations with numerous individuals and companies that would like to provide energy or fuel based on some kind of renewable technology; but when the details of the proposals are fully analyzed, the costs wind up being prohibitive."

South Mississippi Electric is in the process of developing a Renewables Study. A request for proposals (RFP) for renewable projects was issued last August, which resulted in seven responses. While the responses are still being analyzed and compared to potential conversion at existing resources and new self-build projects, the preliminary results confirm that costs typically range from two to three times that of current baseload and intermediate generation sources.

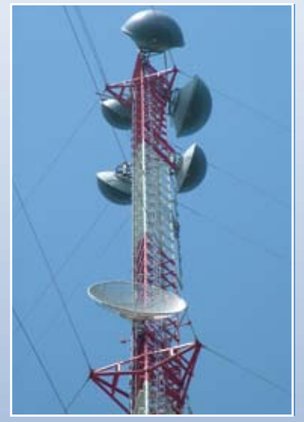
Another possible, although relatively small, opportunity arose earlier this year through the National Renewables Cooperative Organization (NRCO), a program established by SME and other G&Ts around the country to investigate renewable projects. NRCO identified several wind projects, including one in Illinois, that appeared promising; and the SME Board of Directors voted to approve additional discussion. However, indications now suggest that any output sold from the project would result in substantial losses for the Association.

"We intend to keep pursuing and evaluating renewable resource options, but we strongly believe that we must consider the reliability and economic factors that affect the system and, ultimately, our Members," said Brown. "We will assess the final results of the Renewables Study and see if there are any promising possibilities."



Large-scale solar facilities require tens of thousands of collection panels spread out over several square miles

Additions to Microwave System Address Growing Needs



In 2008, South Mississippi Electric advised Southern Company of its intent to take over generation responsibility for thirteen Member delivery points in the Mississippi Power Company service area in April 2011. These loads, which total approximately 145MW, are presently designated as Market Based (MB) loads due to the nature of rate provisions in the existing operating agreement.

In order to meet reliability standards associated with measuring and monitoring the new loads, SME must replace the existing metering equipment at the affected delivery points with its own metering and communications equipment. Currently the Association has such capability only at delivery points within the on-system transmission service area.

An extensive expansion of SME's existing digital microwave network is now underway to provide the communications backbone and infrastructure necessary for serving the converted MB load. The new system will relay real-time telemetering data from each of the acquired delivery points to the control center, providing the information required for the Association's generation resources to instantaneously respond to constantly-changing demand.

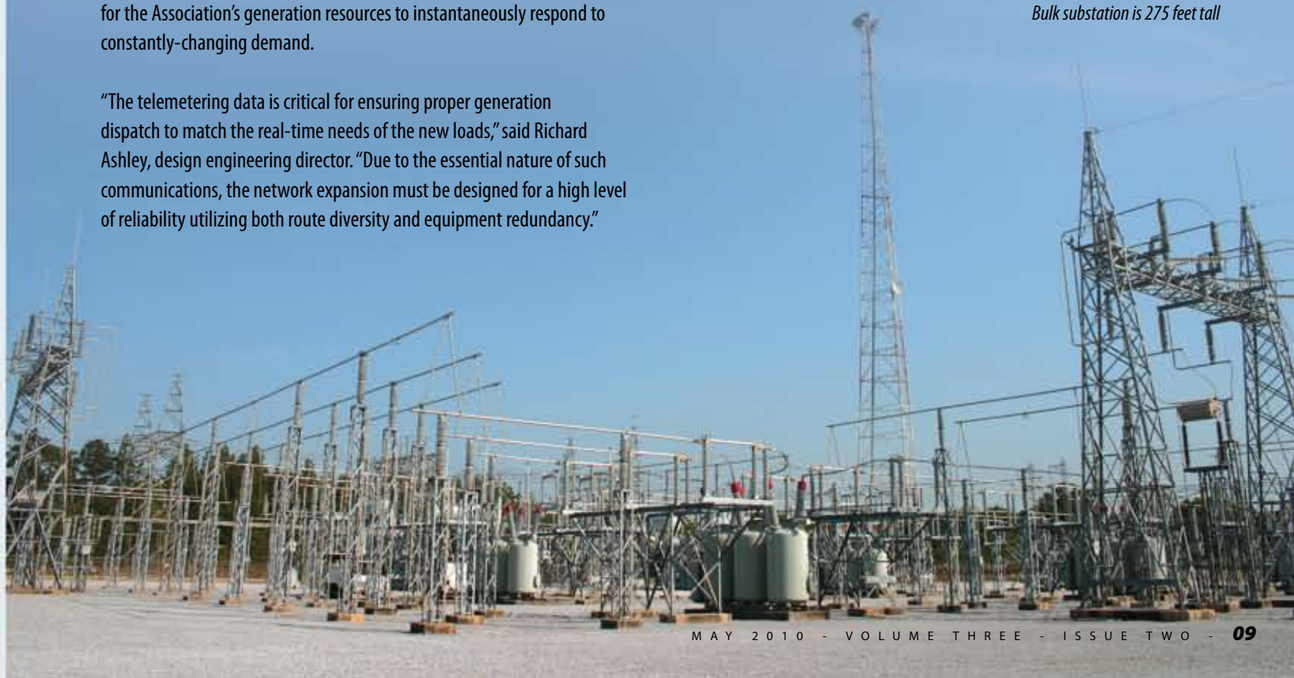
"The telemetering data is critical for ensuring proper generation dispatch to match the real-time needs of the new loads," said Richard Ashley, design engineering director. "Due to the essential nature of such communications, the network expansion must be designed for a high level of reliability utilizing both route diversity and equipment redundancy."

The new network will also allow for future options related to enhanced consumer usage and demand response. "The construction of an adequate and flexible communications infrastructure is the fundamental first step in building the Smart Grid," Ashley noted. "When people talk about a Smart Grid, they are essentially talking about communication from the generator to beyond the distribution meter, with multiple points of control and monitoring in-between. This project lays the foundation for that communication by providing the backhaul or transport network for high volumes of data and voice communications."

Overall, the project will add nine new towers or monopoles, equipment and buildings to accommodate nine new six-gigahertz licensed communication paths in the Borderline (MPCo) transmission area. It will also add 1.14 miles of new fiber optic cable to connect with the existing fiber system, as well as two new 2.4-gigahertz paths. In addition, the project will provide infrastructure for private data and voice connectivity between SME and the headquarters offices of Coast Electric and Singing River Electric.

Bids for the Borderline project were accepted in April, and construction is expected to be completed by the end of this year or early 2011. Planning is currently underway to conduct a similar expansion of the microwave system in the Entergy Mississippi (off-system) service area within the next few years.

The microwave tower at the Purvis Bulk substation is 275 feet tall



New Consumer Ads Promote Efficiency and Safety

A new series of print advertisements was produced earlier this year to help Member systems continue spreading the importance of wise energy use to consumers. The series, which included two different looks, featured brief, concise messages that build on many of the concepts that have been produced in the past.

"We have tried to be consistent with the tips and advice we create related to reducing energy use," said Kurt Brautigam, communication and member services director. "This time, our Members really wanted to make the messages short and to the point."

The ads feature short headlines such as "Turn it off," "Turn it down," "Caulk," "Buy Energy Star," and "Change filters." Each ad includes a single picture related to the topic, as well as an additional sentence to provide context to the message. Members can customize the ads with their logos and website addresses.

"The Members involved with Touchstone Energy were already able to use a new national campaign," said Communication Coordinator Nicole Ruhnke, who helped develop the SME ads. "Those Members who are not affiliated with Touchstone, though, needed something new to use in their publications, so we tried to complement what was already available in order for everyone to have similar messages.

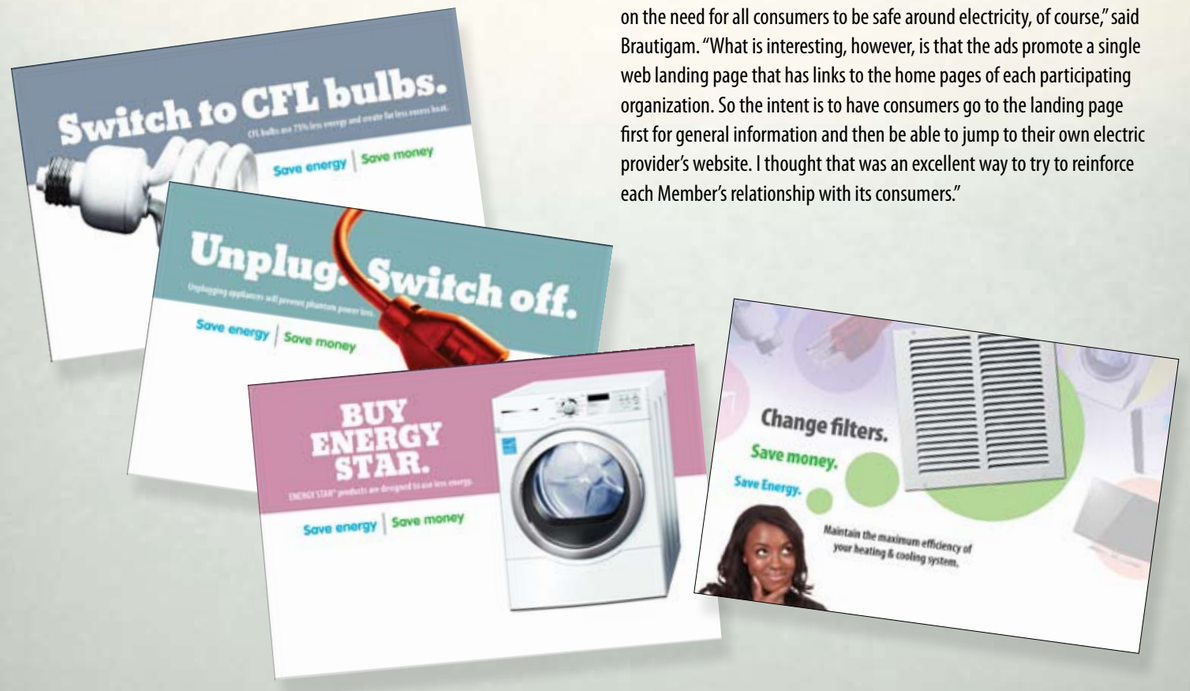
"The overall tag line for the ads is 'Save Energy, Save Money.' That is particularly important for most consumers these days—it certainly was when we were developing the ads in January during the very cold weather."

Rick Bice at Bice Advertising developed several different treatments for the same messages to give Member communicators a choice of what they might like best. By the end of the process, everyone involved liked two of the looks, which allows for much more flexibility and longevity for the campaign.

"The essence of the messages will not change," said Brautigam, "but designing them in several different ways will provide numerous options over the next year in where and how the ads can be used. Most Members run them in their editions of *Today in Mississippi,* and several run them in local newspapers."

The energy efficiency ads were developed soon after the most recent joint safety campaign with Mississippi Power Company was released. Members that have overlapping service areas with MPCo have long shared expenses for safety advertising, which benefits everyone by saving money and increasing exposure.

"The safety ads, which are running on radio, television and in print, focus on the need for all consumers to be safe around electricity, of course," said Brautigam. "What is interesting, however, is that the ads promote a single web landing page that has links to the home pages of each participating organization. So the intent is to have consumers go to the landing page first for general information and then be able to jump to their own electric provider's website. I thought that was an excellent way to try to reinforce each Member's relationship with its consumers."



New Employees

Scott Speed joined the engineering department at Headquarters as a design engineer on January 4. He graduated from Mississippi State University in 2009 with a degree in electrical engineering after working with the Association as a co-op student. Scott is a native of Tylertown and enjoys all sports.

Kris Sartin started as an I&E tech at Plant Moselle on February 15. Kris holds an associate's degree in science instrumentation from Pearl River Community College and a bachelor's degree in electronic engineering technology from the University of Southern Mississippi. Kris previously taught instrumentation classes at Pearl River Community College and also worked as an engineering technician at Stennis Space Center. Kris enjoys riding and working on ATVs, cars, and trucks, as well as spending time with his wife, Valerie, and son, Scot.

Jamie Hearn, CPA, began working as senior auditor at Headquarters on February 22. Jamie is a native of Collins and a graduate of Jones County Junior College and the University of Southern Mississippi, where she earned a degree in accounting. Before joining SME, Jamie was a senior associate with KPMG in Jackson. She also worked for Carr, Riggs, & Ingram as an audit associate. Jamie enjoys exercising, reading, and spending time with her family.

Kevin Grace, CPA, joined the finance department as the director of treasury services at Headquarters on March 15. A native of St. Joseph, Louisiana, Kevin previously served as Executive Vice President and Chief Operations Officer of Cross Keys Bank. He is a graduate of Millsaps College with a degree in accounting. Kevin and his wife, Nicole, have four children; Ryan, Sawyer, Jack Riley, and Vivian. He enjoys swimming, playing cards, and supporting his children in their many activities.

Ken Sumrall began working as network/systems administrator at Headquarters on March 15. He holds a bachelors of science degree in computer science from the University of Southern Mississippi. Ken served in the U.S. Navy for six years and most recently worked as the network operations manager at MegaGate in Hattiesburg. Ken resides in Oak Grove with his wife, Christina, and daughters, Lauren and Reagan. He enjoys running and spending time outdoors.

Leah Davis joined SME as financial analyst at Headquarters on March 22. She is a native of Petal and holds an accounting degree from the University of Southern Mississippi. Previously, Leah worked as the controller of Physician's Services at Wesley Medical Center. She is married to Anthony and they have two sons, Malachi and Joseph. Leah is also the granddaughter of the late George B. Taylor, former SME General Manager.

Deric Thompson began working as network/systems administrator at Headquarters on March 22. He is a native of Newton and a graduate of the University of Southern Mississippi with a degree in software engineering technology. Before coming to SME, Deric worked as systems administrator for Grand Bank in Hattiesburg. Deric enjoys all sports, fishing, and spending time with his daughter, Camryn.

Tricia Rogers started as executive assistant to the General Manager/CEO on April 5. Prior to joining SME, Tricia worked as the secretary to the plant manager at Kohler Engines. She enjoys reading and keeping up with college basketball. She is a native of Brooklyn where she still resides with her husband, Claude. Tricia has one son, Justin.

Tim Jones began working as a laborer at Plant Morrow on April 7. A native of Lumberton, Tim has worked as a farmer for the past several years. He enjoys hunting, fishing, and spending time with his family. He is married to Angela and they have three children, Elizabeth, Benjamin, and Will.

Scanner Wins Second National Award

For the second consecutive year, the Scanner has been recognized as the Best Internal Newsletter or Newspaper/Magazine in the Spotlight on Excellence Awards, an annual competition sponsored by the Council of Rural Electric Communicators and NRECA.

The quarterly employee publication, produced by Kurt Brautigam and Nicole Ruhnke, won the top award against entries submitted by other G&Ts from around the country. The competition is judged by journalism professionals and educators.

"To win this award two years in a row is outstanding," said Jim Compton, general manager/CEO. "Nicole and Kurt work very hard to create communications pieces that not only help employees to stay informed about our organization and industry, but also to tell the stories of how well our employees do their jobs."

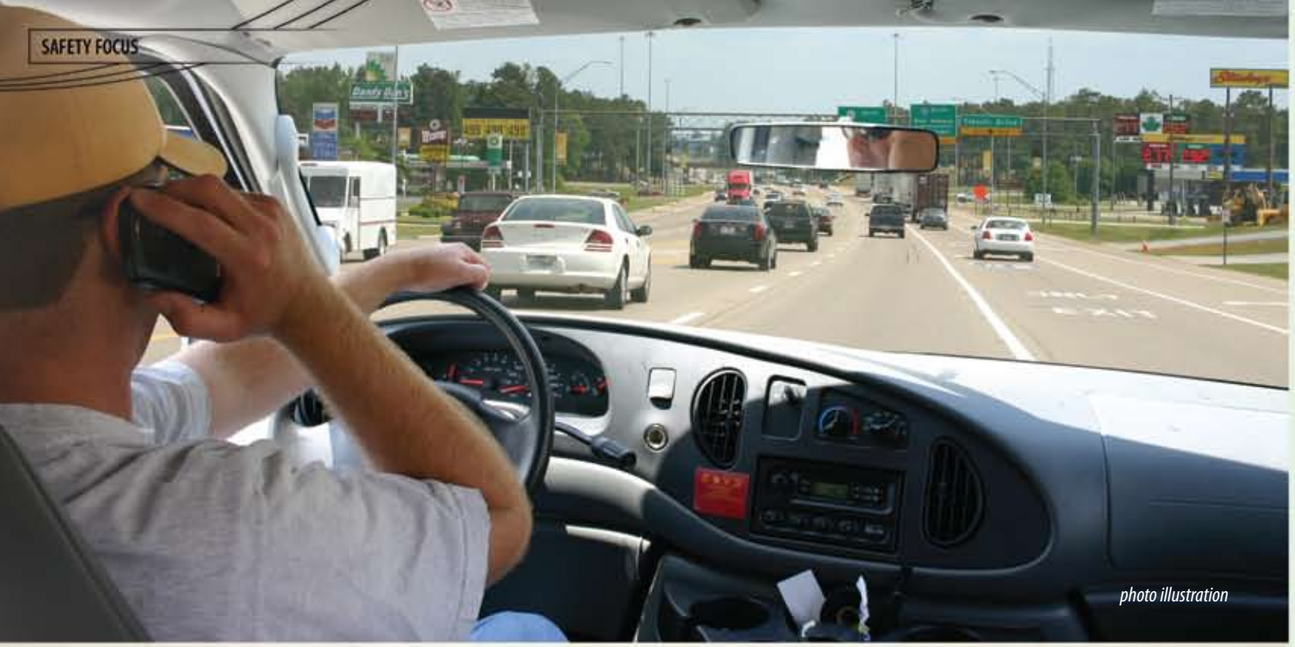


photo illustration

It's a Fact: *Cell Phone Use While Driving Increases Accidents*

Distracted driving has become a leading cause in motor vehicle crashes, partly due to the dramatic growth of cell phone use across the United States. In fact, distractions while driving now join alcohol and speeding as leading factors in fatal and serious-injury vehicle crashes. Despite recent efforts by vehicle manufacturers and state legislators across the nation to reduce distractions by installing and mandating hands-free cell phone devices, the National Safety Council believes that using hands-free cell phone devices is still risky behavior.

According to the National Safety Council's March 2010 White Paper, hands-free devices may eliminate visual and manual distractions, but they do not eliminate cognitive distraction–taking your mind off the road. Based on information provided in the White Paper, there are four major risks associated with cell phone conversations while driving:

Inattention Blindness–Vision is the most important sense that we use for safe driving, yet drivers using hands-free and handheld cell phones have a tendency to look at but not see nearly 50% of objects in their driving environment. Inattention blindness narrows the field of view and reduces the driver's ability to process everything in the roadway that is necessary to effectively monitor surroundings, identify potential hazards, and respond to unexpected situations. Even drivers using hands-free devices are more likely to not see both high and low relevant objects and miss critical visual cues such as exits, red lights, and stop signs.

Slower Response Time and Reaction Time–The White Paper notes that our brains cannot actually multitask, but rather switch attention from one task to another. While this process may take only a fraction of a second, all of the switches do take time. When driving, fractions of seconds can be the time between a crash or no crash, injury or no injury, life or death.

In various studies, response and reaction times were delayed when drivers talked on both hands-free and handheld cell phones. In one specific study, drivers talking on hands-free devices in simulated work zones took longer to reduce their speed and were more likely to brake hard than drivers not on the phone at all. Significantly longer reaction times were also shown during a test of rear-end collision warning systems.

Problems Staying in the Appropriate Lane–While most performance problems associated with drivers using cell phones involve significant reaction time impairment, there are other consequences associated with inattention to the task at hand, such as lane keeping (the driver's ability to maintain the vehicle within a lane).

Avoiding hazards requires drivers to watch for unexpected events, choose an appropriate response, and act. This requires information processing and decision-making that is more cognitively demanding than lane keeping.

Increased Crash Risk–Beyond the driver performance problems seen in controlled simulations and studies, increased injury and property damage crashes have been documented as a result of cell phone use while driving. Studies conducted in the United States, Australia, and Canada found the same shocking result: driving while talking on cell phones–both handheld and hands-free–increases the risk of injury and property damage crashes by a factor of four.

Eliminating driver distractions related to cell phone use is certainly a challenge. Even when people are aware of the risks, they tend to believe that they are more skilled than other drivers and continue to engage in distracting phone calls while behind the wheel. There is a shared responsibility among drivers to simply avoid cell phone conversations while driving–for the safety of everyone on the road.

The Power of 12

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Our Mission:
Deliver the South's best value for safe and reliable electric energy and serve as a common resource for our Member-owners

Our Daily Responsibility:
Knowing and complying with all environmental and regulatory requirements

Our Competitive Strengths:
- An experienced, skilled work force
- A commitment to employee safety and system reliability
- A long-term contractual relationship with our Member systems
- Financial health, including that of our Members
- Sustained load growth in our Members' service territories
- Long range planning for cost-effective generation resources
- Fuel diversity in generation resources

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