

# SCANNER

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**LAB EMPLOYEES CONTRIBUTE  
TO OPERATIONS AND COMPLIANCE**

**PLANT CONSTRUCTION UPDATES**

**NEW NATURAL GAS OPTIONS  
ENHANCE RELIABILITY**

The Scanner Magazine is published quarterly for employees and retirees of South Mississippi Electric

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**Cover Photo:** Construction on the new limestone ball mill and the support structure for the associated limestone slurry hydroclones continues as part of Plant Morrow's scrubber project. The existing limestone silos behind the support structure will be replaced beginning in February 2011.

**Photo this page:** Work is completed on Plant Morrow's new 262,200-gallon filter feed tank, which is designed to hold one day's capacity of gypsum by-product from the new upgraded scrubbers when they are placed into service.

## SOME MEMORIES OF HENRY THOMAS



Jim Compton,  
General Manager/CEO

About a year after I began practicing law with a firm in Biloxi in 1977, I was assigned to work on a case defending Coast Electric. Some people were moving a Citizen's Band (CB) radio antenna from one end of a trailer to the other for better reception. In the process, the individuals lost control of the antenna and it fell onto a Coast distribution line, killing two of the participants. The suit was assigned to a senior partner in the firm, but because the suit was filed in Biloxi, where I was located, I was chosen to assist in the matter.

In working on the case, I became acquainted with Henry Thomas, then the manager of Coast Electric. The trial went well and I handled a part of it, including most of the closing argument. The jury ruled that Coast Electric was not at fault. Several months later, another suit was filed in federal court relating to the other fatality. When the suit was served on Mr. Thomas, he had it sent directly to me to defend, bypassing the senior partner. From that point on, I handled all of Coast Electric's litigation and soon was also representing Singing River and, later, other cooperatives.

In 1985, Henry became General Manager at South Mississippi Electric. About a month after he started, I received a call to meet him about the first of many legal issues for the G&T. In the next several years, I worked a number of issues, including the Sandy Fork contract regarding SME's coal supply from property owned in Kentucky; Grand Gulf construction and audit issues; and cooperative takeover problems involving SME members. In 1992, I became board attorney for SME, and was selected to become general manager in 2003. Looking back, Henry's decision for me to defend Coast Electric more than thirty years ago set me on a path in rural electrification that led to a very different career than I was planning at that time.

Since his death, I have given considerable thought to what I would consider as Henry's most important achievement at SME. Ultimately, I narrowed it down to an achievement and a decision. When SME was first formed, one of its initial Members was Capital Electric. Capital's service territory surrounded Jackson, extending west to near Vicksburg. Ultimately, Capital elected to leave SME and become independent. As a result of providing increasingly poor service to their members, when Mississippi Power and Light (MP&L, now Entergy Mississippi) made an attempt to buy Capital, the members voted to sell. The sad thing is that these members received only their capital credits, which were already theirs, and were not compensated for the real value of the association. Today, Capital's service territory would include

most of Madison and Ridgeland, the Nissan plant, and Byram. If Capital had remained in the cooperative program, it quite likely would be one of the largest co-ops in Mississippi.

Some years later, this same type of takeover was attempted at Southern Pine and Singing River. In both cases, Henry jumped with full force into the fight to defend our Members. Litigation was filed in both attempts, successfully exposing the plan to buy these associations for much less than their true value, and that effort ended the takeover attempts.

This takeover problem led to Henry organizing an effort to change Mississippi law so that anyone attempting to buy an electric power association in Mississippi would have to pay fair value. Henry organized a team of retired managers, including Tim Dudley, Sr., and I was assigned to assist as their lawyer. MP&L fought the legislation vigorously, but the cooperative effort prevailed and the anti-takeover bill was signed into law during the 1988 legislative session. As a result, today SME is protected because we know that we will not unexpectedly lose Members, and the distribution member-owners are protected from losing the value they have invested in their local cooperatives. This achievement was accomplished in large part due to the initiative and efforts of Henry Thomas.

The best decision that Henry Thomas made, in my opinion, was early in his career at SME. Due to construction cost overruns at the Grand Gulf Nuclear Station, SME had exhausted all of its credit. The Grand Gulf Unit 2 costs kept mounting, so the decision had to be made to cancel SME's participation in Unit 2, despite the Association's \$125 million investment—which is a lot of money now and was much more so in 1985.

The Unit 2 cancellation stopped the cash flow problem, but SME still had much more debt at Grand Gulf than the asset was worth. Other G&Ts with nuclear cost overruns were filing for bankruptcy protection, both to reduce debt and to avoid large rate increases. Henry refused to consider bankruptcy for SME. He believed very strongly that SME should keep its word, especially to creditors, and pay back what was owed. He was also a strong believer in the REA (now RUS) program and did not want the REA loan fund to be diminished by a SME bankruptcy.

Today, our excellent credit rating is supported by the history of Henry's determination to repay creditors, even when the easy way out would have been declaring bankruptcy. This decision showed his character, and it was a defining moment for our Association.

*See additional information about Mr. Thomas on the last page of this edition.*

## Plant Labs Are Key to Operations and Compliance

Meeting environmental responsibilities and maintaining the functionality and reliability of South Mississippi Electric's power generation units depends on an elaborate system of equipment, computers and employees. Integral components of that system are the chemistry labs, chemists, and lab technicians at Plants Moselle and Morrow.

The chemists and technicians are charged with monitoring the quality of the water, fuel and other materials that are used throughout their respective plants, and also with ensuring that the products or by-products discharged as part of the power generation process meet all regulations. While the two labs share the common goal of helping to maintain their plant's equipment and protect the environment—and lab employees at both facilities spend about an equal amount of time with tasks associated with each role—they vary in terms of their operations and daily responsibilities.

"One of the primary functions of both labs is to preserve the quality of the water that is used daily in the power generation process and then ultimately leaves the plants, whether it is discharged into receiving streams or evaporates through the cooling towers," said Rodney Culpepper, a chemist at Plant Moselle who has also worked at Morrow. "Water used in our boilers must be very clean in order to maintain the quality and reliability of our equipment and to uphold our environmental responsibility."

Both facilities chemically treat, sample and analyze the cooling tower circulating water and raw water produced from eight water wells (five at Morrow and three at Moselle) to ensure consistent water quality.

Each of the two units at Morrow use closed-loop systems that circulate 100,000 gallons of water during operation, in addition to two 90,000 gallon

reserves. The three original units at Moselle circulate a total of 90,000 gallons of water continuously with two 40,000 gallon reserves. Chemist Wes Long and lab technicians Randy Hogan and Bryan Lindley analyze the water that flows through both boiler units at Plant Morrow, as do Culpepper and Lab Technician Dennis Butler at Moselle.

Plant Moselle samples water from 21 points (seven sample points on each of the three original units) that flow continuously to the lab for analysis. The sample water leaves each sample point at up to 950 degrees Fahrenheit and 1250 pounds per square inch (psi) and enters a chiller panel for conditioning prior to analysis. The chiller panel reduces the temperature to 72 degrees Fahrenheit and depressurizes the water to 10-15 psi, creating consistent sample conditions before it reaches the lab.

Those samples flow through one of 14 automated analyzers in the lab to examine the chemical content of the water. The analyzers provide Culpepper and Butler the information needed to maintain proper boiler water chemistry for each unit.

Water used at Plant Morrow undergoes special treatment before it enters the system, first flowing through a carbon filter, a demineralizer, and then a polisher. The water then travels to the lab through a system similar to Moselle's to lower its temperature and pressure for analysis.

"Water pumped from the ground would be too damaging to the plant's equipment, especially the turbine blades," said Lindley. "Before we will allow the water to flow through our boiler tubes, we want to verify that it is as pure as it can be. We test for the presence of sodium and silica, and make sure that the pH levels are within an acceptable range."

When the analyzers indicate one substance in the water is higher or lower than optimal limits, the water is then analyzed manually to ensure the reading is accurate and not skewed due to an analyzer malfunction. If the readings from the manual test confirm the original analysis, the source of the problem has to be determined and corrected as rapidly as possible by either adding chemicals or additional high purity water to the process water. The most common chemicals added are oxygen scavengers (which tie up oxygen in water to prevent corrosion), phosphates, ammonia, and caustic soda.

One common problem is an increase in silica that often occurs during a unit start up. Silica deposits on the inside of the boiler tubes, which can lead to premature boiler tube



Lab Technician Dennis Butler checks reagents for the online phosphate analyzer at Plant Moselle.

failure. Other problems identified through the analyzers include increased amounts of copper, indicating a possible problem with the tubes inside the condensers, which are made of copper alloy, or increased amounts of iron, indicating a possible problem with the boiler tubes, which are made of iron and steel alloys.

"The analyzers also track historical readings of each sample test, aiding in the trending of the analyses," said Butler. "This also allows us to pinpoint things that occurred while the lab is unmanned, providing an explanation for a variation in sample readings." For example, when the analyzers document a change in the phosphate or pH levels in the water at a particular time, lab personnel can check with the control room to determine if the change coincides with an increase in load or the start up of a pump. Significant changes in the readings will activate an alarm in the control room during hours when the lab is unmanned, and a staff member will be called in to help remedy the condition.

Water from the boilers and cooling towers ultimately evaporates or discharges into a nearby receiving stream, demanding that SME adhere to environmental compliance regulations set forth by the Mississippi Department of Environmental Quality (MDEQ). Moselle (along with Sylvarena) discharges into Leaf River and Morrow discharges into Black Creek.

"At Morrow, all discharged water passes through the scrubber supply pond, the coal pile run off pond, or the cooling towers blowdown pond, giving us three chances to remove any restricted substances," said Lindley. "We test the water in the ponds regularly and if it does not fall within certain parameters, it must be treated before it can be released."

Both labs also try to enhance their plant's environmental integrity by incorporating environmentally-friendly products into their processes. "We make every effort to use as few harmful substances as possible," said Culpepper. "The DEQ has to approve all chemicals we use to treat the water, so this effort really pays off."

In addition to analyzing the water that processes through each plant, both labs must also approve all fuels and perform several additional tasks unique to their plants.

Culpepper and Butler collect samples of the natural gas that fuels Moselle. The gas is analyzed before it comes into the facility to ensure that it meets SME standards, thus resulting in proper performance of plant boiler and turbine equipment. The duo also has similar responsibilities for the combustion-turbine units at Sylvarena and Silver Creek.

The lab at Plant Moselle will undergo significant changes in the next year as a result of the current repowering project. One noticeable change will be the addition of a new analyzer panel that will add 39 new analyzers, increasing the lab's total count to 53, which will significantly increase the amount of samples and tests.

The lab at Plant Morrow examines the coal used to fuel the boilers to ensure the proper heat content (BTU) and the correct moisture and chemical characteristics. The lab also analyzes the limestone used in the process of scrubbing the flue gas, ensuring the presence of the appropriate levels of calcium and magnesium.

Long, Hogan, and Lindley are also responsible for the periodic testing of the plant's slurry, which is a by-product of the scrubber process. The test results indicate the effectiveness of the scrubber in removing sulfur dioxide from the flue gas. Although the test is typically performed monthly on each unit, the test is currently being performed daily on Unit 2 in order to determine what adjustments need to be made as the upgraded scrubber is being commissioned.

"Some plants outsource their lab duties or assign some of the duties to their operations staff," said Culpepper. "As in-house labs, though, we can respond to and diagnose problems as they occur rather than wait on contractors to arrive on site. It is also important that we have the ability to help prevent problems rather than react to them."

"Without the labs and the guys that run them, our plants would not stay online on a daily basis," said Long. "The labs are essential to the process of maintaining our equipment and environment."



Plant Morrow Lab Technician Bryan Lindley uses an Atomic Absorbance Spectrometer to analyze a sample of process water to determine its concentration of trace metals.



## New Gas Supply and Storage Options Add to Reliability

*Southcross Energy is constructing the connection for the new gas pipeline at Moselle and will continue building the pipeline to the north.*

Nothing is more fundamental to the reliability of a generating unit than ensuring a stable and economical fuel supply. Unexpected commodity shortages, transportation issues or any other unforeseen obstacle that might interrupt or reduce fuel delivery to a unit or facility can have an immediate effect. Such occurrences have happened before; back in the 1970s, significant supply shortages and demand surges reached the point that Congress had to step in and pass the Natural Gas Policy Act to regulate the natural gas market.

Things would seem to be different now, with natural gas production at all-time highs and its use in the electric industry steadily expanding. For South Mississippi Electric, however, the lack of a backup resource for delivering the natural gas that fuels Plant Moselle has long been a concern. One gas pipeline has been the sole supplier of high-pressure natural gas since the Unit 4 combustion turbine was placed into operation in 1997. Another pipeline that serves the plant provides only low-pressure supply, which is suitable for operation of the original steam units. This low-pressure supply has not been utilized for quite some time.

The plant's units currently operate mainly as peaking and reliability resources; however, the additional capacity and efficiency that will result from the repowering project will transition some of the units to intermediate generation sources beginning in 2012. The increased demand and reliance on Moselle and all of the other gas-fired units in SME's fleet have heightened the need to develop additional fuel resource options to ensure the availability of the fuel supply.

Two new resources will be put in place in 2011 to broaden the Association's natural gas supply flexibility. One long-awaited resource is access to a natural gas storage facility. In April, SME will enter into a 20-year contract with Petal Gas Storage.

Petal Gas Storage, a subsidiary of Enterprise Products Partners, L.P., is a salt dome storage facility located less than fifteen miles from Plant Moselle. The facility has the capacity to store 20 billion cubic feet of natural gas, enough to run the Association's entire gas fleet for one year. SME's portion of the capacity is 0.5 billion cubic feet. The majority of the storage capacity is located in caverns that start 1000 feet below the earth's surface.

"We have attempted to procure storage space at this facility in the past, but nothing was available until now," said Joey Ward, director of environmental affairs and fuels. "Beginning in April, we will have the capacity to store enough natural gas to run SMEPA's natural gas-fired generation fleet for three days at our record peak demand."

The Fuel Risk Management Committee, which is led by Steve McElhaney and includes Ward, Jim Compton, Marcus Ware, Nathan Brown, Ray Haley, Mike McCrary, Bobby Vinson, John Carley, Camille Daglio, and Rick Gilbert as members, recommended the opportunity to SME's Board of Directors, noting that the facility was state-of-the-art and well-maintained. The board authorized the agreement, which boasted favorable terms, and contracts were signed in November 2010.

"Having a readily-accessible supply of gas in storage will allow our system operators a lot of operational flexibility when they need to start our combustion-turbine peaking units quickly," said Ward. "It will also be advantageous when emergencies occur, like hurricanes, or in times of extreme heat or extreme cold."

An additional benefit of the Petal storage facility is that it is interconnected with Tennessee Gas Pipeline and the Southeastern Supply Header (SESH) pipeline. Tennessee Gas Pipeline gives SME the ability to flow gas from storage to the Batesville unit, although transportation capacity would have to be arranged if the need arose.

The SESH pipeline is SME's other new resource for supplying fuel to Moselle. It is a 274-mile pipeline with a capacity of one billion cubic feet of natural gas per day, and it links the onshore gas supply basins of East Texas and Northern Louisiana to Mississippi and other Southeast U.S. markets. Alternative options to the SESH pipeline were examined by the Fuel Risk Management Committee, but each proved to be costly and met only approximately 40 percent of SME's needs.

"We had considered several options for transporting gas to Plant Moselle," said Ward. "Southeastern Supply Header, a relatively new pipeline, proved to

be our best option. We were able to develop an agreement with Southcross Energy for them to build a pipeline connecting Moselle with SESH."

Southcross operates the largest intrastate natural gas pipeline system in Mississippi, with 640 miles of transmission and gathering pipelines. The connection point with SESH is only eight miles from the plant, and the pipeline will have more than enough capacity and pressure to run the entire facility.

The new pipeline can provide 100 percent redundancy for Moselle's gas supply and will also have the ability to supply the units at Silver Creek and Sylvarena via the Southcross system. SME will pay for the capital costs associated with constructing the new pipeline between the plant and interconnection point through gas transportation rates over the next ten years. The line will be owned and operated by Southcross and is expected to be completed by April.

"We have recognized the need for a reserve supply for our natural gas requirements well before now, but it took us finding the right opportunity for all the pieces to fall into place," said Ward. "The timing is perfect with the addition of the new combustion-turbine units at Moselle. I am confident this will pay off in the future and pay for itself. One day we will look back and wonder how we ever got along without it."

## SALT DOME STORAGE

Salt dome caverns are underground formations that provide a viable natural gas storage option with very high levels of deliverability, including interconnection with pipelines for transportation.

Salt domes are thick formations created from natural salt deposits that, over time, leach up through overlying sedimentary layers to form large dome-type structures. They can be as large as a mile in diameter, and 30,000 feet in height. Typically, salt domes used for natural gas storage are between 6,000 and 1,500 feet beneath the surface, although in certain circumstances they can come much closer to the surface.

The caverns are formed within existing salt deposits that have been injected with a highly-pressurized water flow, dissolving the salt and creating a cavern to specific dimensions. Salt is impermeable to gas, and the walls have the structural strength of steel, making the domes very resilient over the life of the facility. The storage facilities are located predominantly in the Gulf Coast region, including Mississippi.

Gas may be stored indefinitely. The stored gas is more readily and quickly withdrawn from caverns than from other types of storage facilities, making them ideally suited for peak-load storage. Moreover, salt caverns can readily begin flowing gas on as little as one hour's notice, providing customers with reliability and flexibility. Salt caverns may also be replenished more quickly than other types of underground storage facilities.

Sources: [www.naturalgas.org](http://www.naturalgas.org), [www.saltcavernstorage.com](http://www.saltcavernstorage.com)

*Photo courtesy of Enterprise Products Partners, LP*



Natural gas is stored between 650 and 3,200 psi. A minimum pressure must be maintained at all times in the caverns, so storage service providers own a percentage of all the gas in the ground, known as base, or cushion, gas. Customers' gas is known as working gas.

Petal Gas Storage's facilities—located approximately 15 miles south of the Moselle Generating Station—consist of multiple caverns, some of which are more than 1,200 feet tall and are positioned nearly a mile below ground. Petal has interconnections with six gas transportation pipelines, which enables the facility to quickly send customers their supplies on short, intra-day notice.

## Construction Continues at Plants Moselle and Morrow

Over the past two months the pace of construction for the Moselle Repowering Project has increased, with more than 150 contract workers currently on site.

James Construction Group, which is in charge of site preparation and foundation and underground utility installation, has completed work on the foundations for the combustion-turbines (CT) and generators, as well as for the heat recovery steam generators (HRSGs). The foundations for each of the CTs and generators required 347 cubic yards of concrete, while each foundation for the HRSGs required 690 cubic yards of concrete.

James is also continuing work on completing various miscellaneous foundations, with the main focus of their work being the completion of all underground piping and electrical duct bank.

Teton Industrial Construction, responsible for one of two major mechanical construction packages, has also mobilized. Teton workers are installing and assembling the CTs, generators, and associated equipment for both units. In December, each CT, generator, and accessory module was moved from the on-site storage area and placed on their respective foundations. This process required more than a week to complete. With the units in place, Teton began preliminary alignment of the equipment and also began to install other miscellaneous CT equipment, including the fuel gas modules and filter house support steel.

Saxon Construct Group, which was awarded the second major mechanical construction contract, will soon start assembling the heat recovery steam generators, beginning with the bypass stack system. Saxon will also be responsible for connecting the HRSGs to Units 1 and 2 in the plant, as well as installing all other remaining plant equipment and erecting the pipe rack.

Managing so much construction within a relatively confined space with so many different contractors is now the challenge for SME employees and the Burns and McDonald construction management team on site. "Coordinating all of the work is critical to the success of the project," said Chris Rhodes, generation projects manager. "It is like a huge, moving jigsaw puzzle—you have to get the pieces to come together by managing the timing of when different steps occur. This can be challenging, especially with so many contractors in a congested construction area, each with different responsibilities."

"As a part of the bidding process, we stress to each contractor our expectations that everyone must work together to ensure that the project progresses as it should. Now that we are well into the project, we have weekly meetings with all the contractors to discuss their status and needs. Right now there are many components coming together at once, so it is crucial that everyone cooperate in order to complete the critical paths that are tied to major milestones."

So far, the project is on schedule and more than 75% of the costs have been confirmed, many of which were under budget. "All of the equipment purchases have been completed and the major construction contracts awarded," Rhodes said. "We notified the Board of Directors in January that we have reduced the project budget by \$30 million. If we are able to maintain that status, the result will be an even better value for our Members."

Seven months into construction on the scrubber upgrade at Plant Morrow, the project team comprised of South Mississippi Electric personnel, URS Corporation, and their subcontractor workers recently surpassed one significant project milestone and are charting the course towards the next.

Plant Morrow's Unit 2 came back online December 10 after a six-week planned outage, which was coordinated to coincide with a stage of the scrubber project that required the unit to be shut down completely.

During the outage, work completed on the scrubber upgrade included:

- Installation of new, modified inlet and outlet ductwork and dampers;
- Replacement of the scrubber module's existing internal components with the new three-level slurry spray system, which includes new recycle pumps and valves, new fiberglass reinforced plastic (FRP) piping and slurry distribution headers, a new distribution tray, and new liquid distribution rings;
- Installation of new mist eliminators;
- Modifications to the recycle tank, including four new agitators and forced oxidation air piping;
- New DCS controls;
- Heat tracing and insulation installed on scrubber water pipes to prevent freezing; and
- Installation of new piping, valves, and pumps for other related systems.

"Work on Unit 2 is essentially complete," said Darryl Roberts, plant engineer. "We still have a punch list of minor items to complete, such as constructing a few platforms, replacing handrails, and touching up paint, but Unit 2 is mostly done."

"The start up of the unit went amazingly well considering the amount of work that was completed during the outage. We shut back down after one and a half weeks because of lack of load and this allowed us to repair a few leaks and do an inspection, but it has run well since then."

Crews are currently staging for a similar six-week outage on Unit 1 (scheduled to start February 13) by running piping and conduit and pulling wires for instrumentation and electrical equipment. "The work scheduled for Unit 1 will be identical to that on Unit 2, but will hopefully flow even better now that we have the experience on Unit 2 behind us," said Roberts. "We learned a lot of lessons from the process on Unit 2 and will carry those lessons over. The team will meet before the start of the outage to address these lessons and determine what should be done differently."

During the outage, crews will be removing the internal components of the scrubber and replacing with new, more efficient components, such as the

new distribution tray to replace the original rod decks, and three levels of slurry spray headers to replace the original one level of spray nozzles. Nine weeks will elapse between the completion of the Unit 2 outage and the beginning of the Unit 1 scrubber outage, allowing crews to resume work on the dewatering building area, the limestone ball mill, limestone silos, and the slurry storage tank.

New piping and pumps are being installed in the dewatering building area, and work on the limestone ball mill is currently ahead of schedule, with mostly electrical work remaining. Four new limestone silos will be installed in the same location as the existing silos, requiring each of the original silos to be torn down just prior to installing the replacements. In addition, work to install the new larger limestone slurry tank, which is common to both units and will provide additional slurry storage capacity, will be completed.

As with the Moselle repower project, organizing all components of the project, including scheduling subcontractors, managing contract employees, and coordinating unit outages with construction schedules, is critical to completing the project on time and on budget.

"A project of this magnitude is a huge undertaking," said Roberts. "URS has been a great asset for us as contractor. They are managing large portions of the job, as well as handling all of the small details. That allows SMEPA personnel to coordinate the bigger details, such as the outages, and ensure that everything is installed correctly and that it is working as it should."

Major construction is slated for completion in May, with the exception of the final limestone silo, which is scheduled for completion in late summer after the new limestone ball mill becomes operational in June. Performance testing is scheduled for the fall following another round of unit outages for inspection. Completion of the project is scheduled by 2012.

*The layout of the new Moselle units are now clearly visible. Unit 2 is on the left; the CTs are on the left side of each unit and the generators are to the right, while the HRSGs will extend forward toward the plant. The closest (circular) foundations will be for the HRSG exhaust stacks.*



# Emergency Rescue Teams Practice Life-Saving Skills

Employees who work in the electric industry know that they are exposed to more hazards than in most other work environments. These employees must always be aware of their surroundings, take all necessary precautions and embrace a culture of safe behavior.

Discovering an injured co-worker in a remote, virtually inaccessible section of a power plant or substation is not the time to wonder how to safely rescue an individual. It is the time to put planning into action and take command of the situation. It is the place where hours of safety training gets put to the test.

Teams of South Mississippi Electric employees from the Field Operations Center, Plant Morrow, and Plant Moselle participate in annual training and practice sessions to learn how to respond to such emergency situations. ROCO, a company that SME has worked with for nearly twenty years, trains industrial employees on simple, proven techniques for executing a safe, effective response to emergency situations.

The Occupational Health and Safety Administration (OSHA) requires SME to have a qualified in-house rescue team or an arrangement with an outside source to provide rescue services due to the presence of work areas or spaces classified as permit-required confined spaces with atmospheric or physical hazards. SME has both permit required and non-permit required confined spaces. Non-permit spaces have minimal hazards; permit spaces, however, restrict access only to individuals who are qualified to enter due to a potentially hazardous atmosphere or hazardous physical configurations. (Examples of permit required spaces include the coal bunkers and ball mills at Plant Morrow.)

During sessions every year, trainers conduct instructional courses for SME's confined-space rescue teams, followed by field exercises that simulate realistic emergency situations at each plant or inside large transformers at substations.



"The goal of these simulations is to train our employees in the proper rescue techniques needed to safely move an individual from a hard-to-access location to a place for 911 transport," said Roy Foster, job training and safety manager. "Our employees must sometimes work in potentially hazardous conditions and spaces, so it is imperative that we make those conditions as safe as possible and, if necessary, we must be able to provide the most skilled rescue available."

*Michael Truitt prepares to rappel to a lower floor during ROCO training.*



*(left to right) Ben Guthrie, Jeremy Parker, Jay Fairchild, and Kenny Casanova work to properly package a mock patient, Josh Beech, in order to move him to a location accessible by emergency responders.*

While SME rescue teams are not necessarily trained to be medical responders, they are trained to relocate individuals without creating further injuries.

Michael Truitt, a laborer at Plant Moselle, recently participated in his first ROCO training. "I initially volunteered for the training because I thought it would be a good learning experience," said Truitt. "During the training I realized the importance of the rescue teams and the need for employees to have these skills."

The training simulations include patient packaging and the use of mechanical-advantage hauling systems to raise and/or lower packaged patients. Participants must demonstrate the ability to assist in removing mannequins, or personnel from actual confined spaces or from representative confined spaces.

"We learned several skills during the training, such as proper knot tying and communication," said Truitt. "We were able to rappel from one level to a lower level, and then be hoisted back up [to simulate transporting a rescue worker]. This part was a lot of fun. The most important skill we learned, though, was teamwork."

"Our rescue team members have a sincere desire to be trained so that they are capable of rescuing a co-worker," said Foster. "Since SMEPA began ROCO training in the early 1990s, our team at Plant Morrow has had two opportunities to put their skills to work rescuing contract workers—one from the precipitator and one from the boiler. The team's skills expedited the process of seeking medical attention for the injured individuals in both cases."

"Our employees often have to go into confined spaces around the plant, and it is very reassuring to know that there is a rescue plan in place if ever needed," said Truitt. "ROCO is a great safety measure for SMEPA to have in place."

*Parker and Guthrie help lower their patient to Plant Moselle's generator floor.*



## Safety Reporting Leads to Accident Prevention

The uppermost job priority for all South Mississippi Electric employees should be personal safety and the safety of others. SME invests a great deal of time and effort each year training employees about safe practices, providing safety devices, and issuing personal protective equipment. Much emphasis is also placed in proactively identifying potential hazards. Unfortunately, despite our best efforts to enhance workplace safety, accidents can still occur.

"After an accident, a thorough investigation is the first step to preventing future incidents," said Roy Foster, job training and safety manager. "The investigation may reveal a better way of completing a task or identify necessary protective devices to implement. It may also help identify possible patterns in accident occurrences."

In December, the safety department analyzed all accident reports generated at SME facilities in 2010, looking for possible trends. Overall there were 29 personnel incidents, including near misses, incidents that required first aid and recordable accidents, as well as 17 vehicle accidents and citations.

"Each report was examined to identify common denominators that could be leading to the accidents," said Foster. "The most noted trends were related to the nature of the injury, the body part affected, job classification, and years of service."

The majority of injuries reported were cuts and sprains, accounting for one half of all injuries last year. The next most common injury, which occurred much less frequently, involved contusions or bruises. Injuries to the arm (including hands and shoulder) or leg (including feet and ankles) were by far

the majority of the body parts affected in last year's incidents. A very small percentage of injuries occurred to the full body or to the back.

"Most of the accidents occurred with production employees at the power plants, but that is to be expected because these locations have the most employees and they are exposed to higher risks in their work environment," Foster noted. "Employees at the Field Operations Center were next susceptible, followed by headquarters employees."

"Years of service also seemed to play a key role in the prevalence of accidents," said Foster. "Most accidents occurred within an employee's first year on the job. Employees with two to three years experience were next in line, followed closely by employees with four to five years experience. This trend showed a definite decline in accidents relative to years of employment, indicating that employees with more experience may either be more aware of the inherent danger, or perhaps they may be more familiar with safe practices."

Another noticeable trend is related to the time and day of the week on which accidents occurred. In the past 12 months, accidents most typically occurred in the morning hours and were more common on Wednesdays, followed closely by Monday. Thursdays and Tuesdays had fewer accidents. The least number of accidents occurred on Fridays, presumably due to the compressed work schedule resulting in fewer employees being present on Fridays.

One trend that changed from the 2009 study was vehicular accidents. The number of accidents involving employees in company-owned vehicles dropped significantly in 2010, from 24 to 15.

"The trends we found among the accident reports are a great starting point for developing new safety action plans, and some indicate a need to continue ongoing safety efforts," said Foster. "One key step in reducing accidents this year will be the implementation of a job hazard analysis for each job task, in addition to increased employee involvement in safety activities and driver safety training. We also plan to develop a more comprehensive safety component for the new employee orientation, which will hopefully curb the number of accidents involving less-experienced employees."

"It is vital that all incidents be reported, so that we can have a complete picture of what is happening within the organization and fully understand the risks employees face. The process is what enables us to investigate all accidents and make adjustments, so that we can continue to keep safety our top focus for 2011."

# South Mississippi Electric Sues Norfolk Southern in Dispute

As a not-for-profit provider of wholesale electricity, South Mississippi Electric's responsibility is to ensure reliable, economical energy for its Member systems, which serve some of the most impoverished rural areas of the state. The per capita income of SME's ultimate member-owners is well below the Mississippi average, which is the lowest in the nation.

In every aspect of doing business, SME employees are challenged to consistently pursue the most economical means for providing service to Members—that is the nature of working for a cooperative. As costs continue to rise on all fronts, that mission is more important than ever.

One area that has seen costs increase significantly is rail transportation for delivering coal from Appalachia to Plant Morrow. Norfolk Southern (NS) is the only rail carrier able to serve the route, thus making SME a captive shipper. NS exerts sole control over the rates, rules and other terms of transporting coal to Morrow and has been the sole carrier of fuel since the plant began operation in 1978. Contracts between the two parties normally cover three- to four-year periods, but the Association has very little leverage in negotiating terms because of its captive shipper status.

During negotiations for a new contract for rail service beginning in 2011, NS proposed rates that continued the trend of significantly increasing transportation costs. Based on base rates, fuel surcharges and the amount of coal delivered during the most recent contract years, SME's costs for 2004-2006 were 80% higher than for 2001-2003; costs for 2007-2010 were 60% higher than 2004-2006; and costs proposed by NS for 2011 and beyond were 273% higher than during 2001-2003. (see chart)

"As Norfolk Southern's transportation charges have continued to rise excessively, their service has also deteriorated steadily," noted Jim Compton, general manager/CEO. "Last year's average delivery cycle was twelve days, up from six days in 2004 and eight days in 2008. The railroad also failed to deliver 130,000 tons of coal that SMEPA had scheduled for shipment last year, which NS proposes to deliver in 2011 under the new, higher rates.

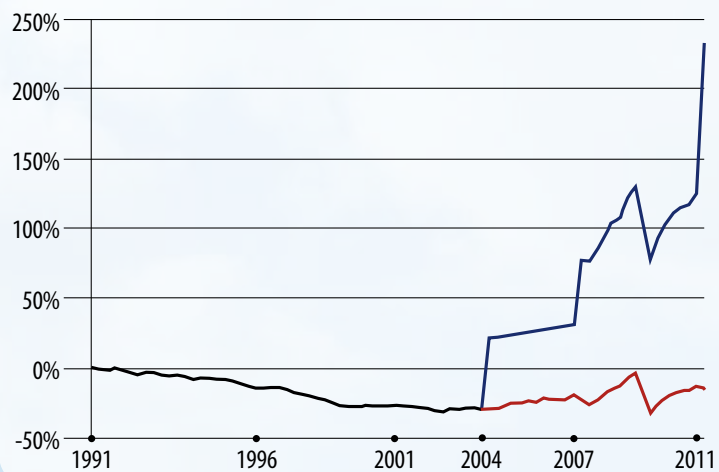
"NS is the most profitable railroad in the country, and it is troubling that we received no reasonable or substantive response to our concerns as we negotiated a new contract. It reached the point where we have had

enough, and it was my recommendation to our Board of Directors that we seek legal relief from the monopolistic abuse to which NS has subjected us."

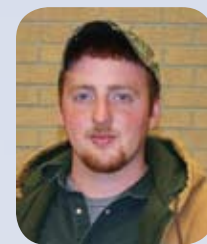
The Board agreed and in late December the Association filed a complaint against NS in the United States District Court for the Southern District of Mississippi, Hattiesburg Division, claiming breach of the most recent coal transportation contract. A separate complaint was also filed in Washington, D.C., with the Surface Transportation Board (STB), which oversees the country's rail carriers, seeking relief from excessive and unreasonable rates proposed by NS.

"It may take several years for the legal process to run its course and it will be difficult, but we firmly believe this is the right thing to do," Compton said. "We are taking this action to protect the interests of our Members and their consumers. It is unreasonable, indefensible and simply wrong for such a highly profitable, monopolistic entity to unfairly exploit a customer simply because it can."

This chart shows the change (by percentage) in Norfolk Southern's rates to SME over the past 20 years. The black line up until 2004 indicates actual charges. The red line indicates what rates would be based on normal cost adjustments, including the railroad's expected productivity and inflation. The blue line reflects the actual charges to SME during the last two series of contracts and the tariff NS imposed during 2011.



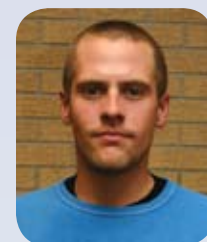
## MEET OUR NEW EMPLOYEES



**Andrew Kirkland** joined SME on December 13 as a laborer at Plant Morrow. Andrew, a Perkinston native, previously worked as a welder for Cornell Enterprises and as a heavy equipment operator. In his free time, he enjoys horses, hunting, and fishing, and he is currently enrolled in on-line courses at Mississippi Gulf Coast Community College-Perkinston campus. Andrew and his wife Meagan have a daughter, Allie.



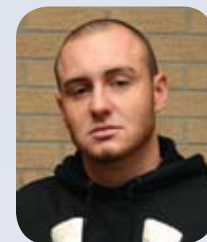
**Kim Jackson** joined SME on December 20 as part-time clerk at headquarters. A Hattiesburg native, Kim graduated from Hattiesburg High School and earned a degree in property management. Prior to coming to SME, she served as medical records manager at HeartSouth. Kim enjoys reading, cooking and spending time with family, including her 16-year-old daughter, Mauresha.



Lineman Helper **Drew Mayhugh** began working at the Field Operations Center on December 15. Drew is a third-year lineman apprentice from Texas A&M University. Prior to joining SME, Drew worked for Irby Construction throughout Louisiana, Texas, and Arkansas. He is a native of New Hebron and enjoys hunting and fishing.



Laborer **Cody Moody** began work at Plant Morrow on December 27. The Columbia native is a graduate of Pine Burr Christian Academy. Cody's previous work experience includes serving as an electrician helper at Infinity Construction and most recently as a forklift operator at Columbia Block and Brick. He preaches at Pine Burr Church of the Lord Jesus Christ and enjoys hunting and fishing. Cody will marry fiancé Bethany Holston on March 19, 2011.



**Ryan Brown** began work on December 15 as a laborer at Plant Morrow. The Hattiesburg native is a graduate of Forrest County Agricultural High School and previously was a welder for Chicago Bridge and Iron. His pastimes include hunting, fishing, and coaching youth football. Ryan has a one-year-old son, Brady.



**Greg Lykens** began work as mechanical maintenance engineer at Plant Morrow on January 10. Greg earned a bachelor's degree in mechanical engineering from Pennsylvania State University and a master's degree in business administration from William Woods University. Greg has 23 years of experience in the power industry, having worked as a mechanical engineer. The Pennsylvania native enjoys exercising, hiking, and landscaping. He and his wife Faith are parents to Holly and Daniel.

## LONGTIME EMPLOYEES RETIRE



Larry Faris



Monroe Lofton



Yvette Evans

Three valued friends and colleagues recently retired from South Mississippi Electric after dedicating much of their careers to the Association. Larry Faris, Monroe Lofton, and Yvette Evans take with them more than 80 years of experience collectively.

Larry Faris began at SME in November 1972 as a lineman. Over the span of his 38-year career, Larry progressed to lineman foreman, where he served from

1980 to 2001. He finished out his service as construction inspector at the Field Operations Center.

Monroe Lofton joined the Association in April 1988 as the director of substation maintenance, a position he held until May 1993 when he was promoted to substation coordinator. Monroe served in that position for the remainder of his almost 23 years with SME.

Yvette Evans worked at SME for a combined total of 20 years, first joining the Association in 1983 as secretary to support services. From 1985 until 1988, Yvette served as secretary and then executive secretary to the general manager. From 1989 to 1995 she was an information specialist and then communications supervisor. She again rejoined SME in 2000 as executive secretary, where she remained until retiring in January 2011.

All of us at South Mississippi Electric have benefited greatly from the effort, commitment, dedication and friendship of each of these individuals and we wish them well in retirement.

# Budget Requirements Remain Stable for 2011

South Mississippi Electric's 2011 operating budget, which was approved by the Board of Directors in November, projects revenue requirements of just over \$776 million. Last year, the 2010 budget forecast was \$745 million and, at year-end, unaudited 2010 revenues were approximately \$774 million.

The budget reflects projected 2011 system sales of 10.5 million megawatt hours (MWh) to Members, slightly less than sales in 2010. Weather conditions during 2010 drove year-end Member sales to 10.6 million MWh, an eight percent increase over the year's forecasts and nine percent higher than 2009 sales. 2010 was the first year that SME sold more than 10 million MWh to Members.

The 2011 average wholesale rate for Members of 73.63 mills/kWh will remain stable compared to 2010. Last year's average rate was 73.51 mills/kWh; in 2009 it was 79.39.

"Our Board has been very instrumental in helping us to maintain stable rates for the past two years," said Jim Compton, general manager/CEO. "The challenges we faced in 2008-09 were due primarily to volatile fuel costs. While those costs have stabilized, we are now entering several years of rising capital costs associated with adding new generation, so our challenges really have only shifted."

Capital projects planned for 2011 total more than \$300 million, with the majority of those costs attributable to ongoing projects—including the Moselle Repowering Project, Grand Gulf's Extended Power Upgrade, Plant Morrow's Air Quality Control project—and the initial expenses associated with the Kemper County IGCC facility.

In addition to other ongoing capital projects carried over at Plant Morrow from 2010, new projects include replacing the limestone silos and upgrading

the #6 conveyor structure. Planned capital transmission system projects for the year will total more than \$30 million. Major projects include completing the upgrades to the microwave system along the Coast, beginning construction on the microwave system upgrade in the Delta area, and upgrading several existing transmissions lines.

Fuel expenses and purchased power will again make up about 76% of the overall operating budget, which is comparable to 2010. For 2011, however, fuel costs are expected to decline approximately \$32.1 million to \$99.1 million and purchased power will increase by \$43 million. Plant Morrow's projected generation output will be down approximately 20% due to outages needed to complete the scrubber project, while Grand Gulf's output from last year will increase slightly without a refueling outage in 2011.

The mix of SME's contracted generation resources will also shift somewhat in 2011, as Plum Point will be online for the entire year—it is budgeted to provide 14% of total system output—and the contract with NRG (Louisiana Generating) will expire in March. On April 1, SME will also be assuming generation responsibilities for thirteen Member delivery points which are currently served by Mississippi Power, and a new power purchase agreement with Mississippi Power will help meet that load.

"We work hard to provide information related to our operations for the members of the Budget and Finance Committee, as well as for the full board of directors," said Ray Haley, chief financial officer. "A great deal of thought and planning goes into developing the assumptions and proposed projects necessary to meet the wholesale power requirements of our Members effectively. Each annual budget reflects our efforts to be focused on delivering great value and to be cost-efficient with the projects required to function as a modern, growing G&T."



## In Memorium

Henry Thomas, South Mississippi Electric's general manager from 1985 to 2004, died on January 1, 2011. He was 72.

Under his direction, the Association experienced significant growth and maintained low rates to its eleven Member systems. SME grew from serving 247,000 meters with revenues of \$193 million in 1985 to serving 377,000 meters and generating \$464 million in revenue by 2004.

Thomas served on the National Rural Electric Cooperative Association (NRECA) Board of Directors from 1985 to 1988 as well as the NRECA Resolution Committee. In 2005 he received the NRECA Regional Outstanding Service Award.

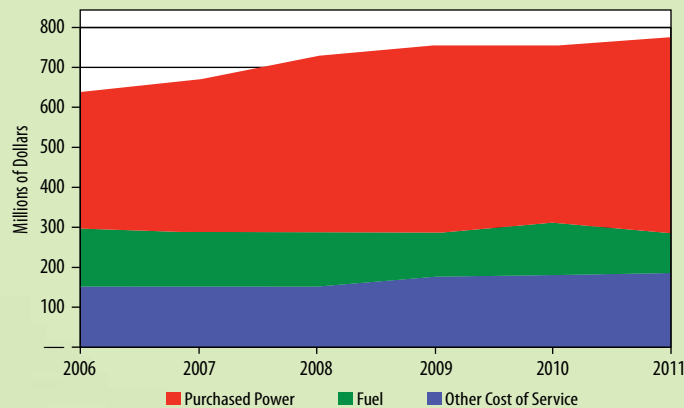
In 2008, the newly constructed Field Operations Center was named in his honor. "Naming the Field Operations Center after Henry is a chance to honor

him for his dedicated service to South Mississippi Electric and to the rural electrification effort in our state and nation," Assistant General Manager Marcus Ware said during dedication ceremonies.

Prior to joining South Mississippi Electric, Thomas spent 16 years with Coast Electric Power Association, serving as a district manager beginning in 1970 and later as general manager until 1985. After graduating from the University of Southern Mississippi, he began his working career as a teacher at Poplarville High School and as principal at Harrison Central High School.

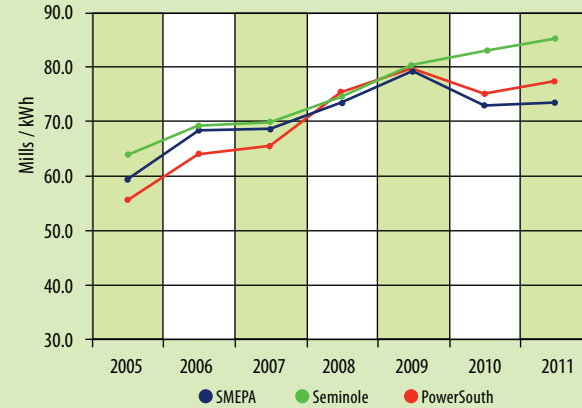
Thomas is survived by two sons, Jason Thomas of Gulfport and Phillip Thomas of Jackson; a daughter, Holly Arnoult of Gulfport; a sister, Mary Dean Skinner of Biloxi; and nine grandchildren. Memorials may be made to the Pearl River Community College Scholarship Foundation.

BUDGET COST DRIVERS



BUDGET COST DRIVERS (Millions of Dollars)	10-2 Forecast					Proposed Budget
	2006	2007	2008	2009	2010	2011
Purchased Power	\$ 336	\$ 375	\$ 432	\$ 463	\$ 437	\$ 483
Fuel	140	134	132	105	129	99
Other Cost of Service	152	150	152	175	177	183
<b>Total Cost of Electric Service</b>	<b>\$ 628</b>	<b>\$ 659</b>	<b>\$ 716</b>	<b>\$ 743</b>	<b>\$ 743</b>	<b>\$ 765</b>

COMPARISON OF WHOLESALE COST TO MEMBERS



WHOLESALE COST TO MEMBERS (Mills/kWh)	2005	2006	2007	2008	2009	2010	2011
SMEPA	59.8	68.2	67.1	73.6	79.4	73.51	73.63
Seminole	64.6	68.6	69.2	74.5	80.3	83.90	85.92
PowerSouth	56.5	64.5	66.7	75.1	79.3	75.38	77.32



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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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