

## **Moselle Repowering Project Moving Forward**

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A major step toward meeting the additional power needs of South Mississippi Electric's Members has moved beyond the research and planning stage.

SME's board of directors has approved a \$236 million project that will add approximately 150 megawatts of new capacity at the Moselle Generating Station, while also making the plant's existing generating units much more efficient.

"Trying to meet the ever-expanding supply needs of our Members is a challenge that requires careful thought and planning," said Nathan Brown, chief operating officer. "It also means looking at many possible solutions to find the best overall answer for our system."

After reviewing numerous responses to a request for proposals (RFP) for purchased power, as well as evaluating potential construction projects to provide new capacity, Brown and his team have determined that the best and most economical option is to add generation at Moselle and repower two of the existing units at the facility.

Two new GE Frame 7EA combustion turbines, similar to Moselle's Units 4 and 5, will be installed behind the boilers that currently provide steam for Units 1 and 2. The 7EAs are simple cycle units with a summer capacity of 75 megawatts each. Two Heat Recovery Steam Generators (HRSGs) will also be installed. The exhaust heat from the combustion turbines, which exceeds 1,000 degrees F., will be routed through the HRSGs to produce steam to drive the turbine-generators of Units 1 and 2.

Each of the existing steam units is rated at 59 MW. When coupled with a 75 MW combustion turbine, the result is a 134 MW combined cycle unit. "In addition to the extra generating capacity, the resulting combined cycle units will be 30 percent more efficient than Units 1 and 2 currently are, thus requiring less fuel to produce the same power output," said Chris Rhodes, plant manager.

"By themselves, the 7EAs operate at about 12,000 BTU/kWh, as do Units 1 and 2," said Rhodes. "Once the repower project is completed, the overall efficiency of the resulting combined cycle units is projected to be 8,100 BTU/kWh. This improvement in overall plant and system efficiency will result in a significant annual fuel cost savings.

"With the volatility we have seen over the past few years in fuel markets, it is especially important to improve our overall system efficiency," added Brown.

The combined cycle tandems provide more operating flexibility because each can be operated over a load range of 65 to 134 megawatts. "We are excited about this project, as it fits SMEPA's needs very well," Brown said. "The combined cycle units will improve the overall efficiency of existing SMEPA

generating resources and meet our control area needs, such as voltage support, spinning reserve, and system regulation. In addition, the project can be completed within the necessary time-frame.”

The services of Burns and McDonnell have been secured to assist in the permitting process, as well as performing preliminary engineering, detailed design, and construction management. The project will also include the purchase and installation of miscellaneous plant equipment, generator step-up transformers, and modifications to the existing switchyard to accommodate the additional output.

Work on the required environmental permitting has already begun and is expected to take at least a year to complete. Much of the new equipment will be purchased during that time, but construction and installation will proceed only after all permits are received. If all goes as planned, the units will be completed and placed into service by the spring of 2012.