

# Fast-Paced Modernization of Generator Control Systems Meets Increased Power Demand

When Santee Cooper, a leading southeastern utility provider, inherited peaking generator units with unreliable control systems, the company launched a modernization project to improve the systems' reliability and ease of operation. Unfortunately, the company lacked adequate remote monitoring capabilities and the documentation regarding system maintenance.

## Main Objective

Santee Cooper contracted MAVERICK Technologies to replace six generator control systems for remote peaking units at various sites throughout upstate South Carolina, to meet a tight deadline. The project was high-profile — both internally and externally — because the sites provide peak and backup power to various industrial facilities and residential customers throughout the region.

## Customer Results

MAVERICK began by developing a new control strategy based on old code, drawings and previous projects. Weekly progress reports allowed Santee Cooper to confidently schedule outings with local cooperatives.

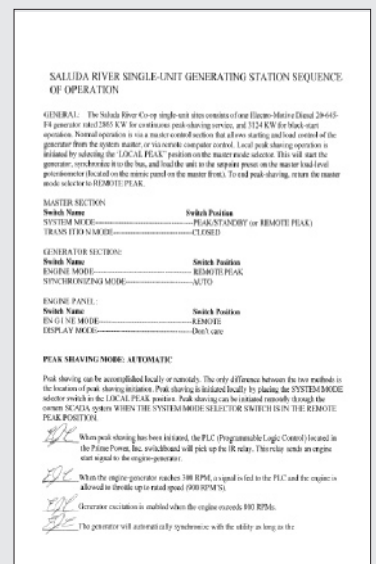
After completing about half the upgrades, the control systems were put to the test. Because of increasing power usage in the area, the plant was asked to provide additional power from the peaking units. Typically, personnel would be deployed to each site to start the generators and verify operations. However, with the upgrade on several of the systems, the plant's operating control station was able to remotely start and monitor the generators. The systems exceeded expectations, and the plant received positive feedback from corporate headquarters for its quick response.

## Application Description

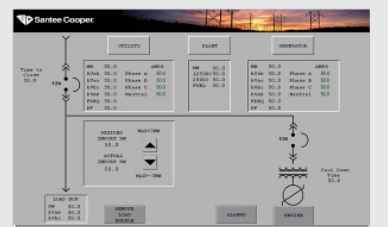
- Programmable Logic Controller (PLC) Design and Configuration:** The existing Siemens® S5 PLCs were upgraded to Allen-Bradley ControlLogix PLCs. The original bid specifications requested Allen-Bradley FlexLogix, but MAVERICK's engineering team recommended the ControlLogix PLCs because they are more compatible with the existing PLC panels, making installation more efficient. A serial interface was developed to communicate with remote ABB protective relays and a Veeder-Root system. The obtained data eliminated a continuing maintenance issue with system printers, creating a more reliable process.
- Human Machine Interface (HMI) Software:** MAVERICK's engineering team recommended Rockwell Automation's RSVIEW over the HMI listed in the bid specification in order to maintain consistency with other generating sites. Seven HMIs were configured — one for each site, and a "master" station at the Rainey operations control room. An OPC server was configured and tested to allow a Rockwell Automation Historian server located at corporate headquarters in Moncks Corner, SC, to collect and store critical data. MAVERICK's engineering team provided Santee Cooper with a tagPOINT database for the Historian.



Generator Overview



## System Acceptance Test Documentation



Generator One-Line Power Information