QUESTION:
Please provide all documents related to the distribution supervisory control and data acquisition (DSCADA) program, referenced in interrogatory 180.

RESPONSE:
Gulf objects to OPC's Fourth Request for Production of Documents No. 66 on the basis that it is irrelevant, overly broad, unduly burdensome, and unlikely to lead to admissible evidence. OPC's Fourth Request for Production of Documents No. 66 is not properly limited in scope because it seeks all documents related to the distribution supervisory control and data acquisition (DSCADA) program, many of which are highly technical in nature and unrelated to whether Gulf's 2020-2029 SPP meets the requirements of Rule 25-6.030, F.A.C. Notwithstanding, and without waiving any objection, please see attached responsive document "Project Plan (DA)" for a general overview of the DSCADA system and project plan.

A. Electric Distribution Systems – Project Tasks

3.) Distribution Automation

For more than 15 years, Southern Company's operating companies have utilized various aspects of DA to help manage the distribution system for improved system operations and reliability. Southern Company is among the industry leaders in utilizing DA devices and systems, with more than 2,600 smart devices deployed on the distribution system, and deployed in more than 95 percent of substations. This project will accelerate the deployment of these devices.

Also, as devices are deployed on the distribution system, the Company must continue to expand its communications network with connectivity solutions to enable the Smart Grid. This project will expand the number of base radio sites to enable additional device communication.

Distribution Automation Project:

- SCADA-controlled reclosers will be placed at approximately the mid-way point of the distribution feeder. Additional reclosers or automated line switches will be deployed on long or critical circuits to further segment the feeder for outage restoration. These devices, which protect downstream from temporary faults, will be controlled remotely by the operator in the control center and/or placed in an automated restoration scheme.

- Automated line switches will be installed at the normal open point between two adjacent feeders. Likewise, these switches will be operated remotely and/or placed in an automatic scheme. The general configuration of these devices and their communication methods are conceptually represented in Figure 2. Device to Control Center and Peer-to-Peer Communication below.

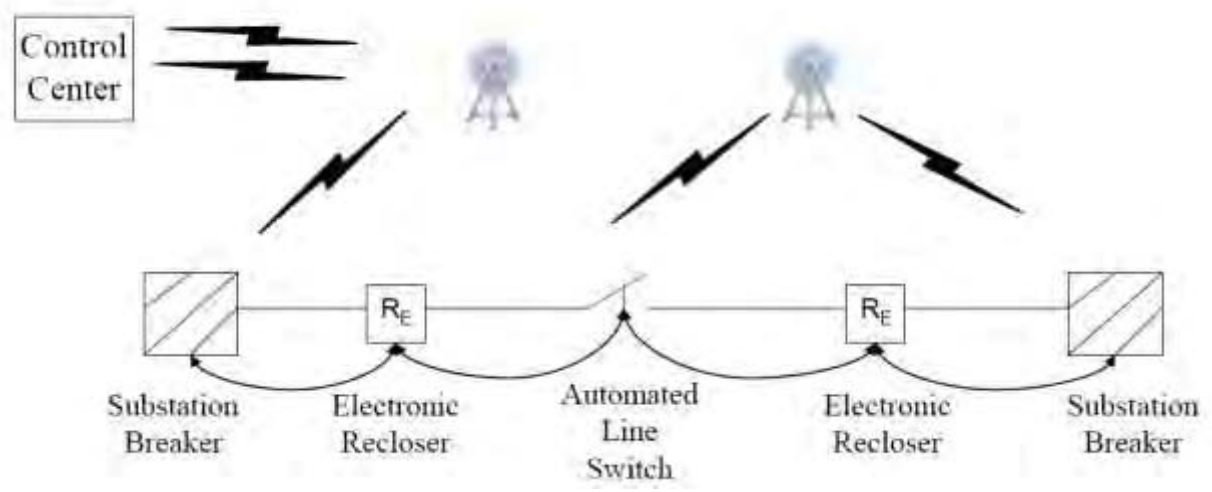

Figure 2. Device to Control Center and Peer-to-Peer Communication

- Motor-operated gang switches, switched cap banks, and some recloser SCADA installations will use sensors to measure the line voltage and current for reporting over SCADA and to determine automatic operations. These sensors are important to load flow and harmonic measurements as well as fault detection and voltage detection in

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automated switching.

- Many of the devices to be deployed will be configured as an Automatic Fault Isolation and Restoration Scheme, or self-healing network. The control of the devices will be an automated 'peer-to-peer' control or automated control from a central computer application, known as the DMS. This self-healing grid will acquire data, execute decision-support algorithms, isolate the line segment that experienced the outage, and restore service to unaffected sections of the circuit.

Description of Distribution Devices/Systems to be installed:
Each operating company is proposing to install significant numbers of smart devices during this project. Considering the large amount of existing automated devices on the system, new device selection for each circuit will depend partially on the devices already deployed. For example, automated switches will be added to circuits that have existing automated reclosers, and reclosers and switches will be added to circuits without existing automation. The projected numbers and types of devices added are summarized in Table 2. Three-Year Southern Company Device Installation Totals.

Table 2. Three-Year Southern Company Device Installation Totals

Automated Line Devices		Additions					
Southern Company	**1999-2009**	**2010**	**2011**	**2 Yr Total**	**2012**	**Total Additions**	**% Increase**
Smart Reclosers	1,909	284	311	595	277	872	46
Smart Switches	748	286	325	611	303	914	122
Self Healing Networks	106	61	148	209	149	358	338

The addition of these automated devices will increase Southern Company's distribution smart device and self-healing network utilization by **78 percent**.

Distribution Automation Project Plan:
The DA tasks are as follows:

- Circuit Selection: Circuits that have the greatest combination of load served and poor performance history will be targeted to achieve the greatest reliability improvement.
- Design: The engineering team will design the individual projects and procure equipment.
- Scheduling and Construction: The work order will be scheduled for construction and field checked for accuracy when complete.
- Commissioning: The units will be added to the SCADA network, tested for operability, and placed in service.

Communications Infrastructure Expansion Project
Southern Company has three robust wireless options for distribution and transmission line devices: Licensed Radio Multiple Address System (MAS), Unlicensed spread spectrum (Utilinet), and a Private IDEN carrier (SouthernLINC). This project provides for the expansion of the MAS and SouthernLINC.

Since the recent FCC re-banding, SouthernLINC has the technical ability to expand its service coverage and fill in geographic coverage gaps. GPC has a contract with SouthernLINC to fund the expansion of radio sites where GPC is the primary recipient of the service. This expansio
will result in 20 additional radio sites and associated communication equipment in the GPC

territory. These installations will expand the data communication coverage to an additional 1,600 square miles and enable communications to 300 additional automated line devices.

The other connectivity solution for this project is offered through the MAS wireless networks. This project will add to communication infrastructure for the MAS network by installing 90 additional communication base radios and associated communication equipment. These installations will expand the data communication coverage for APC to an additional 225 feeders and 753 devices.

C. Project Schedules

Table 4. Milestones

Project	2010	2011	2012
Distribution Automation *2010 & 2011 Total: $50 M* *Project Total: $69.5 M*	• 284 Electronic reclosers • 286 Automated line switches	• 311 Electronic reclosers • 325 Automated line switches	• 277 Electronic reclosers • 303 Automated line switches

A. Relevance to SGIG Goals

The fulfillment of Southern Company's project plan will help to accelerate the modernization of the electric transmission and distribution grid by increasing the penetration of secure Smart Grid technologies. See Table 5. Project Relevance to SGIG Goals.

Table 5. Project Relevance to SGIG Goals

Program	Projects	Relevance to SGIG Goals
Distribution Automation	– SCADA Enabled, Automated Line Devices, Self-Healing Networks, Communication	– Providing for power quality – Responding to system disturbances – Improving reliability and safety

4. ENABLING SMART GRID FUNCTIONS

C. Distribution Automation

To improve the reliability of the electric distribution system, adding two-way communication-enabled, automated devices has proven to be one of the most cost-effective Smart Grid technologies. Southern Company operating companies currently have over 2600 such Smart devices deployed on their systems. Each operating company plans to significantly increase the number of automated line devices on the distribution system. Moreover, the companies have SCADA installed in more than 95 percent of substations. Southern Company uses the industry-accepted SAIDI and SAIFI (System Average Interruption Frequency Index) indices to assess the reliability of its distribution system. In 2008, Southern Company's SAIDI was 130 minutes while its SAIFI was 1.41 events. Consistently delivering reliable service to its customers has contributed to Southern Company's industry-leading customer satisfaction ratings.

The DA project proposal will focus on accelerating the installation of advanced digital devices and technologies on the Southern Company distribution system and expanding the communications network that enables these Smart Grid devices. Specifically, the goal is to

install several hundred electronic line sensors, line switches and reclosers at strategic locations on identified distribution circuits. The devices to be used are controlled by MP-based relays and communicate to the EMS and SCADA systems in place at Southern Company. The equipment will store and report various energy flow measurements and will monitor and make isolation and restoration decisions based on the real-time information received. The faulted circuit segment information will be communicated to the Outage Management Systems to assist system operators and direct field personnel for further isolation and restoration.

The control of the devices will be a combination of direct operator control, automated 'peer-to-peer' control, and automated control from a central computer application, known as the Distribution Management System. These peer-to-peer and centralized automated control systems will function as self-healing networks. This self-healing grid will automatically acquire data, execute decision-support algorithms, isolate the line segment that experienced the outage, and restore service to unaffected sections of the circuit. All these decisions will occur automatically, without operator intervention.

The resulting Smart Grid network will greatly improve reliability for Southern Company customers throughout the service territory by maintaining electrical energy service to the greatest number of customers possible under all system conditions. Customers will see reductions in both the frequency and duration of service interruptions because of this effort. The self-restoring nature of the network will also present an opportunity to reduce the environmental impact of a service truck patrolling an entire circuit looking for a fault. The expertise that Southern Company has developed in this area will ensure a seamless integration of the larger network of intelligent devices and self-restoring schemes.

It is expected that the benefits from this project will reduce the duration of outages on the selected distribution feeders by a minimum of 20 percent. This project will enable Southern Company to significantly increase the amount of load and customers that will be served through Smart Grid technologies.

Communications Project:
Secure, dependable, interoperable data communication systems are critical to operating a Smart Grid. Southern Company has three robust wireless options for Distribution and Transmission Line devices: Licensed MAS Radio Unlicensed spread spectrum (Utilinet), and a Private IDEN carrier (SouthernLINC). The majority of Southern Company's line devices utilize the MAS or Utilinet radio systems. The utilization of SouthernLINC began in 2008. SouthernLINC became a viable Smart Grid option when the cellular modem companies began to create hardened devices. This project will expand the coverage of the SouthernLINC network to provide a connectivity solution to hundreds of Smart Grid devices.

GPC has been able to create a stable, secure, interoperable IP connection to line and substation devices by creating a communication package that has a hardened modem and utilizes the SouthernLINC communication data network. The IP connection allows GPC to poll devices with DNP 3.0 wrapped in TCP/IP. Because direct polling with DNP over IP enables fault data retrieval, GPC has aggressively deployed SouthernLINC to key distribution and transmission devices that need fault retrieval or engineering access. Currently, 20 percent of devices have a SouthernLINC connection. Access to this wireless IP technology is enabling Smart Grid functions. Southern Company was recently approached by the S&C Electric Company to consider IP-based SouthernLINC communication for peer-to-peer communication of their IntelliTEAM II devices.

6. PROJECT COSTS AND BENEFITS

A. Total Project Costs

Project	Three-Year Project Costs	Additional Costs
Distribution Automation	*Project Total: $69.5 M*	Ongoing operating and maintenance cost $4M

B. Project Benefits

Table 12. Project Benefits

Benefit/Project Category	Benefit	Source of Benefit	Goal/ExpectedBenefit	Information Reported by Project
Reliability and Power Quality *IDMS/SCADA* *Distribution Automation*	Greater service availability	Fewer sustained outages	Reduction in SAIFI on selected feeders	Actual SAIFI improvement on selected feeders
		Faster fault isolation Faster restoration of electric service	20% Reduction in SAIDI on selected feeders	Actual SAIDI on selected feeders
			IDMS/SCADA/ Fault Locating - 10% Reduction in SAIDI system-wide	System SAIDI

C. Data Collection

2.) Distribution Line Automation

Feeder Selection:

At the end of each year, outage statistics will be compiled for the previous 24 months and totaled by feeder. The feeders will be ranked by number of CI and total customer minutes interrupted (CMI). The ranking will be summed to compute a combined score. Feeders will then be ranked by combined score. Each year, the worst-performing feeders will be selected for automated line device additions.

Data Collection and Reporting:

The Outage Management Systems will capture all outage data, both frequency and duration of events, for reporting purposes. Twelve months following completion of improvements a report will be created that will compare the total CMI for each feeder to the 24 months prior to improvements (baseline). The final project reports will also contain the cost benefit analysis for the entire project, as well as identify feeder topologies where improvements were the most successful.