ORIGINAL

CCA Official Filing
5/31/2006 2:35 PM********** 2:35 PM********** Timolyn Henry******1

Timolyn Henry 060198

From: S. Denise Hill [dhill@publicpower.com]
Sent: Wednesday, May 31, 2006 2:23 PM
To: Filings@psc.state.fl.us
Subject: GRU Storm Preparedness

Attachments: GRU Storm Preparedness.doc

GRU Storm eparedness.doc (91

Dear Sir/Madam,

Attached is the Implementation Plan for Ongoing Storm Preparedness for the Gainesville Regional Utilities.

Thank you,

Denise

S. Denise Hill
Information Technology Specialist
Florida Municipal Electric Association
P.O. Box 10114
Tallahassee, FL 32302-2114
O: 850-224-3314, ext. 6
F: 850-224-0358
dhill@publicpower.com
www.publicpower.com

AP ____
OM ____
TR ____
CR ____
GCL ____
OPC ____
RCA ____
SCR ____
SGA ____
SEC 1
OTH ____

2006 Season Storm Preparedness
Gainesville Regional Utilities Implementation Plan
May 12, 2006

A. Introduction

This Storm Preparedness report is intended to identify the routine and any newly initiated corporate efforts to prepare the Gainesville Regional Utilities (GRU) electric power system for the 2006 Storm Season. The intent of this preparation is to limit, as much as practicable, damage sustained during typical as well as extraordinary events and to permit the speediest possible recovery.

The Gainesville electric service territory covers approximately 130 square miles and includes the City of Gainesville proper and much of the urban fringe. The City of Gainesville is located in Alachua County, in north central Florida. For additional information, contact:

Mr. David Beaulieu
Asst. General Manager / Energy Delivery
301 SE 4th Avenue
PO Box 147117
Gainesville, FL. 32614-7117
352-393-1511
beaulieude@gru.com

GRU serves approximately 87,700 electric customers. The bulk of GRU's service territory, the City of Gainesville, is an inland community roughly equidistant to the east and west coast of peninsular Florida. This area is generally considered 'insulated' from high category wind threats such as hurricanes. However, it is recognized that nationwide, Gainesville, as well as much of north central Florida, is second only to the Tampa/Orlando corridor in the number of thunder-days per year and the potential exposure to extraordinary weather incidents. A thunder-day is defined as the number of calendar days annually where thunder is heard from a given location.

Hurricanes Frances and Jeanne of 2004 represent the first and second significant threats to our community since September of 1960 when Hurricane Donna crossed north central Florida from the southwest to the northeast and exited the peninsula near the St. Augustine/Jacksonville coastline to the Atlantic. While utility recovery data for Donna is not available, Frances and Jeanne resulted in the loss of about 60,000 and 35,000 customers, respectively. These two hurricanes represented the first significant use of mutual-aid assistance by GRU.

B. Three Year Vegetation Management Cycle

The Vegetation Management Division is staffed with a manager, two professional Forester/Arborists and two rank and file employees to manage and supervise a qualified vegetation maintenance contractor. This group maintains approximately 650 miles of 12 kV distribution lines on a three year rotating cycle. Distribution circuits range in length from approximately two to twenty five miles. GRU's vegetation management philosophy is to schedule and execute work on a complete circuit basis. The circuits are prioritized based upon distribution system performance (reliability) and condition of the vegetation along the circuit corridor.

The distribution vegetation maintenance program is based upon nationally recognized standards of tree care and vegetation management practices and adopted to Gainesville's environment and specific operating concerns. A recent North American Electric Reliability Council (NERC) audit identified GRU's Vegetation Management program to be especially effective and listed it among the utilities' best practices.

These standards and practices include, but are not limited to the following:

- National Electric Safety Code
- ANSI A300 (Tree care - standard practices)
- ANSI Z133.1 (Tree care - safety practices)
- Shigo - Pruning trees near electrical utility lines.
- Shigo - Tree Pruning.
- Matheny and Clark - Evaluation of hazardous trees in urban areas.

Components of the distribution maintenance program are:

- Routine utility tree pruning.
- Selective tree removals based upon hazardous conditions.
- Selective use of herbicides.
- Selective use of tree growth regulators.
- Wood chip recycling.

GRU's electric transmission system is an approximately 125 mile, looped, 138 kV system, mounted predominately on steel structures. GRU maintains three inter-tie points, a 230kV/230kV and a 138kV/69 kV with Progress Energy Florida and a 138kV/138kV with Florida Power & Light. The GRU transmission line to FP&L at Bradford substation, about 18 miles, is mounted on 75 foot wood structures. The only remaining connection to GRU's transmission system is a 2.5 mile tap to Clay Electric's Jonesville Substation and was built on 70 foot wood structures.

The GRU transmission system is served by two generation stations, John R. Kelly and the Deerhaven power stations. The transmission system serves 9 local GRU distribution substations with 1 imbedded distribution substation serving the City of Alachua.

The transmission system right-of-way is routinely inspected twice annually by Vegetation Management personnel and once annually (pole to pole) by Line personnel. Following any significant weather event, the transmission system is damage assessed visually by air in cooperation with local law enforcement's air resources with an immediate follow up, ground level inspection by Line and/or Engineering personnel.

C. Transmission and Distribution Geographic Information System

GRU's transmission and distribution systems have been surveyed and mapped including GPS location for all facilities, equipment and attachments identified. The software platform used is ARC Info, an ESRI product. In addition, procedures and processes have been established to ensure that new construction, additions and changes, field switching and system reconfigurations are posted to the facility database as soon as practical. Information is maintained on high voltage as well as distribution primary and secondary voltage systems down to the customer meter. Pole and conductor data includes but is not limited to size, class, birthmark, installation date, construction type, material, treatment and attachments.

GIS data files are electronically linked to the utility Outage Management System to ensure data consistency between data storage and processing systems and recovery operations systems. An addition, all traffic signals within the service territory have recently been identified with their power sources, GPS located, and planned for inclusion to these GIS data files. In the field, specific markings to easily identify these power sources are currently being installed.

D. Wooden Transmission vs. Concrete Transmission Structures.

Of the approximately 125 miles of transmission system owned and operated by GRU, about 84% are 80 foot steel structures. The remaining 16% are 75 foot wood poles on the Deerhaven to Bradford line and 70 foot wood poles on the GRU/Clay Tap.

In preparation for the coming 2006 Storm Season, the transmission system was inspected, pole to pole, by line personnel and the right-of-way was inspected by Vegetation Management personnel. Particular attention was paid to the Deerhaven/Bradford corridor in anticipation of insulator replacement work. This line connects GRU's Deerhaven Generating Station to FP&L's Bradford

Substation and is constructed within a 100 foot right-of-way and on 75 foot wood poles with each corner pole, a concrete pole.

While considerable work was completed in 2005 to strengthen and boost the reliability of this corridor, early 2006 saw the completion of the scheduled change out of all insulators and three wood poles. All poles found to be at risk from animal intrusion were treated and wrapped to strengthen and prevent damage. The entire corridor was also inspected for proper vegetation clearances, and sprayed with approved herbicides. Three identified 'danger' tree were removed. A danger tree is any dead/dying or diseased vegetation/growth of sufficient size or proximity to transmission facilities to warrant removal. Routine inspections on the GRU/Bradford right-of-way corridor are performed bi-annually, once in March-April and again following Storm season in October-November. It is also inspected following any significant weather event or threat from fire.

There are no plans at this time to rebuild this line with either concrete or steel structures.

Engineering studies are underway to determine the remaining life of, and future construction options for, the GRU/Clay tap. This line originates from a GRU transmission line (a three way switching point) and is a radial feed to Clay Electric's Jonesville Substation.

E. Post-Storm Data Gathering, Data Retention and Forensic Analysis

Routine electric service outages are discussed at the division management level with the department head every two weeks for a general review of interruption durations, response times, direct and indirect causes and number of outages. Outages of note are identified and investigated for additional details and analysis to develop and initiate appropriate responses to improve general reliability indices.

For events of an exceptional or extraordinary nature such as the 2004 hurricane season, data is received, processed and stored in an Outage Management System (OMS) and actively used to retrieve actionable intelligence, establishing and modifying as needed, restoration responsibility zones, prioritizing restoration, collecting customer counts, assigning resources and coordinating recovery in the safest, most effective manner. A meeting of all division/field managers is chaired by the Restoration Manager to evaluate recovery operations no less than once per day. Collected intelligence is shared with corporate communications personnel for media and public announcements regarding recovery progress and scheduling.

Post storm analysis uses operational data, status reports, debriefing reports, focus group information, charts/graphs, maps and statistical data to process, condense and summarize to best determine the most effective actions taken during recovery

operations. Best/worst practices are reviewed and conclusions are applied to procedural and policy documents as appropriate.

F. Audit of Joint-Use Pole Attachment Agreements.

Other public utilities and foreign services requiring attachments to GRU facilities must execute a Pole Attachment Agreement that stipulates the terms and conditions of making such attachments to GRU's facilities. All requests to effect such attachments are processed through the Engineering Division. GRU's GIS system is then used to review the request for obvious conflicts with electrical distribution systems, guying and other existing facilities. An engineer or technician then field checks the impact of the proposed pole attachments to ensure safety and adherence to GRU construction requirements. Once approved, the attachment requestor/owner is recorded for billing and posting back to the GIS system. GRU's existing Pole Attachment Agreements do not require the utility or entity requesting the attachment(s) to provide loading/stress calculations. However, such attachment agreements may be modified to include specifically such data in the future.

Discussions with GRU's current pole inspection contractor, has confirmed that the contractor can provide pole loading/stress calculation audit services. At this time the cost remains unknown and such work may be included in an amended or future contract.

G. Six-Year Transmission Inspection Program

As stated above under item D, routine inspection of transmission facilities mounted on wood structures are performed twice annually, once in the Spring and once in Fall and following any significant weather event or fire. The balance of the transmission system is mounted on 80 foot steel structures and is routinely inspected annually by qualified line personnel and rights-of-way/easements by utility foresters.

An annual flyover is performed on the GRU transmission system in cooperation with local law-enforcement air groups. A more detailed, pole to pole, ground level inspection is performed on the transmission system annually, typically, prior to storm season by qualified line personnel. Specific issues of concern are noted and provided for infra-red inspections. The most recent infra-red inspections have been performed for the Deerhaven and John R Kelly get-a-ways and the entire Deerhaven to Bradford corridor.

H. Collection of Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems.

Outage data collected is distinctly identified by type of construction, whether overhead or underground. However, there are no current reports or indices being

calculated in a manner that would discriminate between these two construction types. Currently, GRU's distribution system is 44% overhead and 56% underground. There is readily available data to accomplish discriminate and comparative indices between overhead and underground system performance.

I. Coordination with Local Governments

GRU is compliant with the Homeland Security National Incident Management System (NIMS) and the qualified individual is a participant with and maintains the ESF 12 seat with the local Alachua County Emergency Management Operations Center and cooperates with City of Gainesville Recovery Operations. Transmission system and distribution system over flights are coordinated with local law-enforcement air resources.

City of Gainesville ordinances ensure that all new development/construction projects regarding the electric service delivery systems are of underground construction. GRU provides and maintains backup generation for selected wastewater lift stations to mitigate the loss of wastewater services due to flooding and loss of power.

GRU owns and maintains a trunked-radio system with a user membership that includes local police and sheriff's departments, fire and emergency support services as well as the University of Florida law enforcement. Governance of radio system operations is by a board of member users. The radio system provides communications access to single and/or multiple groups as well as a cross departmental interface.

GRU has surveyed, identified and GPS located the electric power sources for all traffic signals within it service territory and is currently in the process of including this data to the utilities' GIS system. This data can and will be made available to local city, county law enforcement groups and traffic control divisions as needed.

Storm recovery operations and activities including vegetation management and road clearance are coordinated with city/county departments through the City and Alachua County Emergency Management Center.

J. Collaborative Research Through the Public Utility Research Center (PURC) at the University of Florida.

Through membership in the Florida Municipal Electric Association, GRU is involved in with PURC. Gainesville Regional Utilities has also been an independent member of PURC since the early 1980s, and participates in PURC activities, and research. Members of Gainesville Regional Utilities staff also serve as professional participants for PURC conferences and research.