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September 27, 2006

Ms. Blanca S. Bayo, Director  
Division of the Commission Clerk and Administrative Services  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee FL 32399-0870

Dear Ms. Bayo:

Re: Docket No. 060198-EI

Enclosed is Gulf Power Company's revised Vegetation Management Plan with supporting data to comply with Order No. PSC-06-0781-PAA-EI to be filed in the above referenced docket.

Sincerely,

*Susan D. Ritenour*

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cc: Beggs and Lane  
Russell A. Badders, Esquire

**GULF POWER COMPANY'S  
VEGETATION MANAGEMENT FOR STORM HARDENING  
September 25, 2006**

In accordance with Order No. PSC-06-0351-PAA-EI, Gulf Power has assessed the feasibility of a three-year vegetation management cycle and is proposing an alternative approach to hardening the distribution system against future storm caused outages.

Gulf Power proposes to incorporate additional enhancements to its present reliability based program to improve the program's performance in relation to hardening the distribution system against future storms while continuing to insure day to day reliability of the system. These program enhancements will enable Gulf Power to establish a cyclical approach to segments of its vegetation management program while retaining the flexibility necessary to target resources on the areas where the greatest cost benefit will be recognized.

Gulf is recommending a program to commence on January 1, 2007, which will consist of the following items.

**INCREMENTAL PROGRAM ELEMENTS**

- A three-year trim cycle on all main line feeders
- An annual inspection and corrective action program for main line feeders not treated by cyclical or other work types
- A program for removing hazard trees located outside the normally maintained pruning zone with heavy emphasis placed on main line feeders
- Increased storm hardening of new distribution lines by modifying initial vegetation clearing practices during construction
- Local coordination with code enforcement officials where customer owned trees threaten Gulf's facilities but the customer refuses to assist in remediation of the problem
- Forensic forestry following storms
- Public education

**NON INCREMENTAL PROGRAM ELEMENTS**

- A reliability based management program for all laterals which will achieve a maximum cycle of six years

This program will achieve an effective cycle of less than three-years and will expand the scope of Gulf's normal vegetation management program by addressing trees located outside the normally maintained pruning zone which pose a threat to the distribution system under storm conditions.

	Miles Treated	Cycle (Yrs.)
<b>FPSC Recommended Plan</b>	1,942	3
<b>Gulf's Recommended Plan</b>		
- 3 yr. cycle on main line feeders	615	3
- Annual inspection w/ corrective pruning	1,230	1
- Removal of hazard trees	200 - 400	N/A
- Reliability based management of laterals (6 yr. maximum cycle)	<u>663</u>	<u>6</u>
<b>TOTAL GULF RECOMMENDED PROGRAM</b>	<b>2,508 *</b>	<b>2.3</b>
	* Total does not include any mileage for hazard tree removal to prevent double counting miles	

Through this program, Gulf will insure main line feeders are inspected annually and pruned on a cyclical basis. Laterals will still be managed on a reliability based methodology but Gulf will manage the program to insure a maximum cycle of 6 years is maintained on the laterals.

**ROUTINE MAINTENANCE IMPACTS**

Vegetation on main line feeders will be maintained on a three-year cycle. Each year, one third of the main line feeders will be systematically pruned, while the remaining two-thirds are either inspected with follow-up pruning to correct deficiencies, or inspected and worked for hazard tree removal. This will focus program resources on the area where tree caused outages have the greatest impact. Tree caused outages on main feeders account for 49% of vegetation caused customer interruptions with an average CI of 1,305 per outage.

Laterals will be managed through the use of reliability based vegetation management. Circuits will be categorized based on tree caused outages and customer density. Field inspections will determine the amount and type of vegetation management needed to improve reliability. This program will maintain the flexibility to allow work on heavily forested areas that are experiencing reliability issues more frequently than sparsely forested areas where reliability is acceptable.

In addition, work on laterals will be documented so areas that do not present themselves as reliability problem areas can be scheduled for inspection and follow up corrective work. In the past, laterals which did not present themselves as problem areas due to low tree caused outage rates may have not received any inspection or corrective work. This approach will provide a safety net by insuring that every lateral is either pruned, or inspected with follow-up corrective action a minimum of once every 6-years. This component of its management of vegetation on laterals represents an incremental program addition to Gulf's past reliability based management on laterals.

With regard to day to day reliability of the system, this approach will also provide greater cost benefit since it is designed to reduce the number of outages which result in high customer interruptions.

	Annual Incremental Cost	Avoided Annual CI	Annual Cost Per Avoided CI
FPSC Recommended Program	\$4,200,000	28,395	\$148
Gulf Recommended Program	\$1,500,000	23,005	\$65

Gulf will also incorporate an education component into its proposed program. Educational material on planting trees to avoid power outages will be developed and made available to our customers. Gulf will also work closely with the municipalities it serves to educate public officials on the need for hazard tree removal and overall management of street trees with a goal of reducing storm damage to power lines and other public infrastructure.

### **STORM HARDENING IMPACTS**

In addition to its normal maintenance of existing lines, Gulf will incorporate a hazard tree program to address trees located outside the normally maintained and established pruning zone. As noted in earlier filings, most of Gulf's vegetation caused storm outages result from off right-of-way trees falling into its facilities. Gulf will work in cooperation with local municipalities and customers to facilitate the removal of the trees or large overhanging limbs to insure they no longer present a threat to Gulf's facilities. Since it is impractical to remove all trees that have the potential to fall into Gulf's lines, trees will be prioritized based on the level of threat they impose and will focus on the highest threat first. Gulf will prioritize its distribution feeders based on customer density, forest type, and tree cause outage data. Gulf will inspect the main line feeders on a priority basis. Initially, trees that pose an imminent threat to high priority circuits will be addressed. Heavy emphasis will be placed on main line feeder sections but the program may also treat high priority laterals feeding critical infrastructure such as sewage lift stations.

A large majority of Gulf's distribution lines are on franchise roadside easements and hazard trees are normally on private property where Gulf does not have pruning rights. In those cases where a tree presents an imminent threat to its facilities but the owner refuses to allow corrective action, Gulf will work cooperatively with local code enforcement officials to insure every effort is made to remediate the threat.

Gulf will also modify its initial clearing of right-of-way for new overhead construction. In the past, Gulf has focused its clearing activities to the franchise granted portion of the easement. In the future, Gulf will incorporate the removal of hazard trees outside the normally established and maintained right-of-way when initially clearing for new lines. This will insure the hardening of all new lines from the day they are built. This activity will impact between twenty and thirty miles of new overhead line each year.

The incremental storm outage avoidance for hazard tree removal has been estimated using the following assumptions:

Number of distribution feeders on system	277
Total Gulf Customers	408,641
Average customers per feeder	1,475
Average time to remove failed tree (minutes)	60
Average cost per hazard tree removal	\$300
Trees removed per year	5,000
Assume 1% of removals are avoided outages	50
Avoided CMI @ 1% = 50*60*1,475	4,425,000
Assume 10% avoided outage rate	500
Avoided CMI @ 10% = 500*60*1,475	44,250,000

Every attempt has been made to show a very conservative estimate of avoided outage time and to show the incremental improvement in outage reduction. CMI was used instead of CI for storm related outage reduction. Under storm conditions, a feeder may have multiple trees down, so an avoided failure may not prevent an outage from occurring somewhere else on the feeder. However, by reducing the number of failed trees that require removal from Gulf’s lines, CMI will be significantly improved.

The removal of hazard trees will have a cumulative positive effect on outage avoidance in subsequent years. Trees removed during year one will continue to represent an avoided outage in year five of the program whereas trees that are pruned on a cyclical basis will grow back and once again represent a potential outage. While the program may have less impact in its early stages, the positive impacts will be significant in future years as the number of hazard tree removals continues to increase.

Avoidance Rate	Year 1 Avoided CMI	Year 2 Avoided CMI	Year 3 Avoided CMI	Year 4 Avoided CMI	Year 5 Avoided CMI
1%	4,425,000	8,850,000	13,275,000	17,700,000	22,125,000
10%	44,250,000	88,500,000	132,750,000	177,000,000	221,250,000

Considered in the context of Hurricanes Ivan and Dennis, this could have resulted in a 20% reduction in CMI for Dennis and 7% for Ivan during year 5 of the program. This potential improvement was calculated by dividing the potential CMI Avoidance at the 10% level of avoidance (221,250,000) by the total CMI for each storm, which was 1,053,733,304 for Dennis and 3,321,886,129 for Ivan.

This program will also provide an improvement in the day to day reliability of its distribution system. While data does not exist to allow a full analysis of the impact, expert opinion and a manual search of control center notes relating to actual outages have led Gulf to believe that a minimum of 15% of Gulf main line feeder interruptions under normal day-to-day operation are caused by tree failures outside the pruning zone.

In order to refine the selection of hazard trees, Gulf will employ the use of forensic foresters in future storms to analyze tree caused outages. Tree failures will be analyzed to insure the trees being selected for removal fit the characteristics of actual tree failures.

### **PROGRAM EVALUATION**

Gulf will evaluate the overall program on an annual basis through the analysis of annual reliability data and forensic data collected following storms. In addition, Gulf will monitor vegetation management related research activities for possible program improvements.