

BEFORE THE PUBLIC SERVICE COMMISSION

In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

DOCKET NO. 060198-EI  
ORDER NO. PSC-06-0351-PAA-EI  
ISSUED: April 25, 2006

The following Commissioners participated in the disposition of this matter:

LISA POLAK EDGAR, Chairman  
J. TERRY DEASON  
ISILIO ARRIAGA  
MATTHEW M. CARTER II  
KATRINA J. TEW

NOTICE OF PROPOSED AGENCY ACTION  
ORDER REQUIRING STORM IMPLEMENTATION PLANS

BY THE COMMISSION:

NOTICE is hereby given by the Florida Public Service Commission that the action discussed herein is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for a formal proceeding, pursuant to Rule 25-22.029, Florida Administrative Code.

Case Background

On January 23, 2006, Commission staff conducted a workshop to discuss damage to electric utility facilities resulting from recent hurricanes and to explore ways of minimizing future storm damages and customer outages. State and local government officials, independent technical experts, and Florida's electric utilities participated in the workshop. On January 30, 2006, some participants filed post-workshop comments.

At the February 27, 2006, Internal Affairs, our staff recommended actions for electric utilities to take to address the effects of extreme weather events on electric infrastructure. We also heard comments from government representatives, independent experts, and Florida's electric utilities regarding staff's recommended actions. At that meeting, we modified various aspects of staff's proposal and decided the following:

- 1) All Florida electric utilities, including municipal utilities and rural electric cooperative utilities, will provide a 2006 Hurricane Preparedness Briefing at our June 5, 2006, Internal Affairs.

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- 2) Each investor-owned electric utility will file plans and estimated implementation costs for ongoing storm preparedness initiatives, which are discussed in detail below.
- 3) Rulemaking will be initiated to adopt distribution construction standards that are more stringent than the minimum safety requirements of the National Electric Safety Code.
- 4) Rulemaking will be initiated to identify areas and circumstances where distribution facilities should be required to be constructed underground.

We have jurisdiction pursuant to Sections 366.04(2)(c), (2)(f), and (5), and 366.05(7), Florida Statutes.

### **The Plan Requirements**

By June 1, 2006, each investor-owned electric utility shall file plans and estimated implementation costs for ongoing storm preparedness for the following ten initiatives:

- 1) A Three-year Vegetation Management Cycle for Distribution Circuits,
- 2) An Audit of Joint-Use Attachment Agreements,
- 3) A Six-year Transmission Structure Inspection Program,
- 4) Hardening of Existing Transmission Structures,
- 5) A Transmission and Distribution Geographic Information System,
- 6) Post-Storm Data Collection and Forensic Analysis,
- 7) Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems,
- 8) Increased Utility Coordination with Local Governments,
- 9) Collaborative Research on Effects of Hurricane Winds and Storm Surge,  
and
- 10) A Natural Disaster Preparedness and Recovery Program.

The initiatives listed above are not intended to encompass all reasonable ongoing storm preparedness initiatives. We view these initiatives as the starting point of an ongoing process. Utilities and interested persons are encouraged to identify additional initiatives and to suggest alternative plans so long as the same objectives are achieved in a cost effective manner.

The substantive requirements for the plans are described in detail below. In addition, the plans shall, at a minimum, describe the scope of activities, implementation timeline, and estimated annual program costs for the next ten years for each initiative. Various activities and costs are expected to be incremental to those included in current base rates. The plans shall include all incremental activities and estimated costs for each initiative.

We recognize that these initiatives will impact each utility differently. Utility specific information such as the timeline for implementing the initiative, program methodology, costs, and rate impacts, are substantially unknown. Each utility is expected to evaluate existing

programs, expansion of existing programs, and if necessary, develop entirely new programs to address the above ten initiatives. Accordingly, utilities may propose alternatives to the requirements described below. Any alternatives must include a complete description of the alternative as well as the reason why the alternative is equivalent or better in terms of cost and avoiding future storm damages.

Prior to June 1, 2006, a utility may file a request to extend the June 1, 2006, deadline for the plan with the agency clerk, which our staff may grant if the utility has shown a specific hardship in meeting the deadline.

(1) A Three-year Vegetation Management Cycle for Distribution Circuits.

Utilities typically have two different vegetation management plans, one for transmission facilities and another for distribution facilities. In general, transmission vegetation management activity is more rigorous than distribution vegetation management. Transmission structures tend to be taller than distribution structures. Distribution structures are typically at or below tree heights. Also, the amount of tree clearing a utility is able to achieve within a transmission corridor is greater than the utility's ability to clear trees within the proximity of its overhead distribution facilities. Thus, tree related storm damages are more likely to occur on overhead distribution facilities than on transmission facilities. We believe additional emphasis needs to be placed on maintaining tree clearances from overhead distribution facilities to reduce the potential for vegetation-related storm damage.

Utilities have various overhead distribution vegetation management programs. Progress Energy Florida, Inc. (PEF) and Florida Power and Light Company (FPL) use a 3-year trim cycle as a target for their respective programs. Florida Public Utilities Company (FPUC), in 2004, began a 2-year trim cycle in its Northeast Division (Fernandina) while a 5-year trim cycle was established for its Northwest Division (Marianna) in 2002. Tampa Electric Company (TECO) and Gulf Power Company (Gulf) do not use a fixed trim-cycle. TECO and Gulf use various metrics, such as number of outages and date of last trim, as tools to determine when and where tree clearing should occur.

However, the amount of tree clearing that occurs may not be consistent with utility vegetation management programs. A July 2005 staff audit of PEF vegetation management found that the miles trimmed had declined during a period when tree-caused outages had increased. During the same period, PEF's targeted three-year trim cycle was not being met. Staff's July 2005 audit of FPL's vegetation management program revealed similar patterns. In its post-workshop comments, FPL stated that it would ensure a three-year clearing cycle for all main lines (feeders). However, problem trees exist in the proximity of other circuits, not just the main lines. A June 2005 staff audit of TECO vegetation management showed an increasing pattern in vegetation-caused outages for the five years prior to 2005. Yet, TECO's 2005 vegetation management budget was lower than in prior years. FPUC has only recently migrated to a formal vegetation management program. A March 2005 staff audit of FPUC revealed that vegetation contractor activity was curtailed due to budget constraints in 2002.

The vegetation management practices of the investor-owned electric utilities do not provide adequate assurance that tree clearances for overhead distribution facilities are being maintained in a manner that is likely to reduce vegetation related storm damage. We believe that utilities should develop more stringent distribution vegetation management programs. The plans implementing such a program should enumerate minimum performance requirements. We believe that a three-year trim cycle is a reasonable minimum requirement for tree clearing along major distribution circuits known as primary feeders. Trimming along other circuits should also be on a three-year cycle, unless it is cost prohibitive. Nevertheless, each investor-owned electric utility shall provide a plan and estimated costs for a complete three-year trim cycle for all distribution circuits. Any additional alternatives proposed by the utility shall be compared to a three-year trim cycle and must be shown to be equivalent or better in terms of cost and reliability for purposes of preparing for future storms.

(2) An Audit of Joint-Use Attachment Agreements.

Utilities periodically review their facilities for joint-use attachments. At the January 23, 2006, staff workshop, independent technical experts presented information suggesting that a percentage of existing electric utility poles are overloaded and approaching overloading due to non-electric utility attachments to the poles. Utility poles that are overloaded or approaching overloading are subject to failure in extreme weather. While the data presented at the staff workshop was based on national data, the concerns regarding potential pole overloading and failure in extreme weather conditions were not rebutted by the Florida electric utilities. Thus, Florida's utilities have not provided adequate assurance that their practices and procedures governing joint-use facilities avoid storm damages and customer outages.

By Order No. PSC-06-0144-PAA-EI, issued February 27, 2006, in Docket No. 060078-EI, In Re: Proposal to Require Investor-Owned Electric Utilities to Implement a Ten-Year Wood Pole Inspection Program, we required investor-owned electric utilities to establish an eight-year inspection cycle for wood pole strength including the effects of pole attachments. The order is silent regarding joint-use attachments to non-wood poles. The order is also silent regarding undetected pole attachments that may occur between wood pole strength inspections. Thus, the order does not address all ongoing reliability concerns associated with pole attachments for purposes of preparing for future storms.

Each investor-owned electric utility shall develop a plan for auditing joint-use agreements that includes pole strength assessments. These audits shall include both poles owned by the electric utility to which other utility attachments are made (i.e., telecommunications and cable) and poles not owned by the electric utility to which the electric utility has attached its electrical equipment. The location of each pole, the type and ownership of the facilities attached, and the age of the pole and the attachments to it should be identified. Utilities shall verify that such attachments have been made pursuant to a current joint-use agreement. Stress calculations shall be made to ensure that each joint-use pole is not overloaded or approaching overloading for instances not already addressed by Order No. PSC-06-0144-PAA-EI.

(3) A Six-year Transmission Structure Inspection Program.

Transmission inspection practices vary widely among the investor-owned electric utilities. FPL hired KEMA, an independent engineering firm, to assess FPL's Hurricane Wilma performance. KEMA's post-Hurricane Wilma review of FPL's 500 KV transmission tower inspection practices states FPL practices a "4-year 10% sample inspection." We believe this means that, every four years, FPL inspects 10 percent of the 500 KV transmission towers for loose bolts, cross-bracings, and damages to other appurtenances. KEMA concluded that FPL's inspections were not sufficient to discover loose or missing bolts on the transmission towers. Failures of various FPL transmission lines during Hurricane Wilma caused at least 94 percent of FPL's Hurricane Wilma substation outages. In a July 2005 staff audit of PEF's transmission pole inspection and maintenance programs, the auditor noted that PEF did not perform ground-line inspections on transmission poles from 1999 through 2004. Discussions subsequent to the January 23<sup>rd</sup> staff workshop indicate that PEF currently targets a five-year inspection cycle for its transmission facilities. A June 2005 staff audit of TECO's transmission inspection program noted that TECO performed few, if any, pole inspections from 2000 through 2003. Gulf stated at the January 23<sup>rd</sup> staff workshop that it inspects all transmission poles and structures on a 12 year cycle. Every six years Gulf performs one of the following types of inspections of its transmission facilities: ground inspection, wood ground line treatment inspection, steel ground line treatment inspection, comprehensive walk inspection, and routine aerial patrol.

Based on this wide divergence of the frequency and scope of utility transmission inspection practices, we are not convinced that current utility transmission facility inspections are adequate to prepare for future storms. By Order No. PSC-06-0144-PAA-EI, we required investor-owned electric utilities to establish at least an eight-year inspection cycle that assesses the remaining strength of wood distribution and transmission poles. The order is silent regarding inspections on non-wood poles. The order is also silent regarding other transmission inspections that should be periodically completed on the various structures and appurtenances that comprise the transmission system such as insulators, guying, grounding, conductor splicing, cross-braces, cross-arms, bolts, etc. Additionally, Order No. PSC-06-0144-PAA-EI is silent regarding the critical nature of transmission facilities and whether an eight year inspection cycle for all transmission facilities is adequate to prepare for future storms. Thus, Order No. PSC-06-0144-PAA-EI does not address the full inspection of all transmission poles, towers, and other line supporting structures.

Each investor-owned electric utility shall develop a plan for fully inspecting all transmission towers and other transmission line supporting equipment such as insulators, guying, grounding, conductor splicing, cross-braces, cross-arms, bolts, etc. Furthermore, all substations, capacitor stations, relay stations, and switching stations shall be included in the transmission inspection plan because of the critical nature of these facilities.

The transmission inspection plan shall be based on achieving at least a six-year inspection cycle for the portions of the transmission infrastructure not already addressed by Order No. PSC-06-0144-PAA-EI. The six-year criteria is based on Gulf's efforts to achieve at least one detailed inspection within a six-year period and PEF's target of a 5-year transmission

inspection cycle. Each investor-owned electric utility shall propose a program methodology that is effective in assuring the utility is adequately prepared for future storms. All alternatives shall be compared to a six-year inspection cycle methodology and must be shown to be equivalent or better in terms of cost and reliability for purposes of preparing for future storms.

(4) Hardening of Existing Transmission Structures.

In 1993, after Hurricane Andrew, FPL stated it was reconsidering use of wooden transmission structures. At the January 23<sup>rd</sup> staff workshop, FPL stated it is replacing wooden structures on a maintenance basis and whenever relocations occur. In 2001, PEF decided to begin replacing all of its wooden transmission structures with either steel or concrete construction. However, the recent staff workshop and subsequent documents have not shown the extent of utility efforts in this area nor the criteria used to select which transmission structures are upgraded or replaced.

At the February 27<sup>th</sup> Internal Affairs Conference, Mr. Martin Rollins, representing interests of the wood pole industry, indicated that wood poles remain a viable industry option and may even decrease the time needed to restore electric service compared to concrete, steel, and other non-wood options.

Each investor-owned electric utility shall develop a plan to upgrade and replace existing transmission structures. The plan shall include the scope of activity, any limiting factors, and the criteria used for selecting transmission structure upgrades and replacements.

(5) A Transmission and Distribution Geographic Information System.

During the January 23<sup>rd</sup> staff workshop, it became apparent that utilities need to do a better job keeping track of the facilities in the field in order to demonstrate that facilities are prepared for future storms. KEMA, in its review of FPL's Hurricane Wilma performance, discusses efforts to use FPL's geographic information system. FPL's geographic information system was not used because of limited area coverage and accuracy concerns when the data was compared to property accounting records. Gulf is implementing a transmission and distribution geographic information system. An objective of Gulf's information system is to maintain facility specific data such as location and performance data. Gulf found the geographic information system improves its storm restoration process.

Each investor-owned electric utility shall develop a program that achieves the same objective as Gulf's geographic information system. We intend for the utilities to have flexibility to propose a methodology that is efficient and cost effective in assuring that sufficiently detailed data is collected to conduct forensic reviews, assess the performance of underground systems relative to overhead systems, determine whether appropriate maintenance has been performed, and evaluate storm hardening options.

(6) Post-Storm Data Collection and Forensic Analysis.

Utilities capture and maintain varying degrees of inspection data, vintage data, and other performance related data pertaining to the electric infrastructure. Lack of readily available performance data makes it difficult to conduct forensic reviews, assess the performance of underground systems relative to overhead systems, determine whether appropriate maintenance has been performed, and evaluate storm hardening options.

After Hurricane Wilma, FPL established a forensic team that collected information on storm damaged facilities. FPL's forensic team then provided this data to KEMA. KEMA relied heavily on FPL's forensic data. KEMA's review noted an apparent lack of inspection record retention. Some portions of KEMA's review relied on interviews with FPL staff rather than records because FPL did not have maintenance records and facility specific data. In its post-workshop comments, Gulf stated it is initiating a detailed post storm data collection process to provide improved storm damage analysis. The post-storm facility performance data collection will be in addition to any existing data collection. Thus, Gulf will become better able to perform storm damage assessments because of its use of geographic information system in conjunction with specific improvements in data collection.

Each investor-owned electric utility shall develop a program that collects data for purposes of forensic analysis similar to Gulf's program and FPL's post-Hurricane Wilma forensic team efforts. A utility may integrate this initiative with its geographic information system activities as well as with its post-storm data collection activities. We intend for utilities to have the flexibility to propose a methodology that is efficient and cost effective in assuring the utility collects sufficiently detailed data to conduct forensic reviews and become better able to evaluate storm hardening options.

(7) Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems.

In addition to the general need to increase post-storm data collection, utilities shall collect specific storm performance data that differentiates between overhead and underground systems. Data regarding overhead and underground system performance is needed to adequately inform customers and communities who are considering their options. The same data is needed by the utility to address storm hardening options that reduce storm damage, storm restoration costs, and customer outages.

Utilities shall collect data with a sufficient level of detail to enable the utility to determine the percentage of storm caused outages that occur on overhead systems and on underground systems. Additionally, the utility must be able to assess the performance and failure mode of competing technologies that may be in the field such as direct bury cable versus cable-in-conduit and concrete poles versus wood poles. Data on location factors that contribute to overall performance, such as front-lot versus back-lot and pad-mounted versus vault, shall also be collected. Thus, our intent is for utilities to assess the effects of high winds and storm surges reliability performance on overhead and underground systems on an ongoing basis.

Each investor-owned electric utility shall develop a program to collect performance data that differentiates between overhead and underground facility performance. A utility may integrate this initiative with its geographic information system activities and also with its post-storm data collection activities. We intend for utilities to have the flexibility to propose a methodology that is most efficient and cost effective in assuring the utility collects sufficiently detailed data to conduct forensic reviews differentiating between overhead and underground facility performance.

(8) Increased Utility Coordination with Local Governments.

A key element in providing quality service is knowing the needs and desires of your customers. While utilities have various public outreach programs, the workshop highlighted the need for better communication between the utilities and the cities and counties they serve. While utilities work with local governments prior to and immediately after a storm, we believe that each utility should actively work with local communities year-round to identify and address issues of common concern.

This point was raised by Mayor Anne Castro of the City of Dania Beach who suggested that a more integrated partnership between local governments and utilities could assist utilities in better serving customers. Mayor Castro explained:

We want to be the eyes and ears for FPL. We have offered . . . [to] . . . train our public service people, our public safety people, especially after a hurricane or even on an ongoing basis during the year, as to what to look for in their infrastructure. If they could teach us what to look for as far as poles being bad or wires being bad or fuses hanging or loose ends hanging, our folks, as they routinely do this through code enforcement, through the fire department, through the police department, are happy to go out there and take a look. Even our citizens on patrol. . .turn in half of the code violations anyway. . .they can report all that, they can create a list. . . .

Mayor Castro's comments demonstrate the precise type of cooperative spirit that can help utilities target their resources to meet local needs and priorities.

There is already precedent for this level of cooperation with local governments. The Department of Community Affairs provides hazard mitigation planning guidance to local governments<sup>1</sup>. Several of the proposals listed in the mitigation guidelines are easily adaptable and equally applicable to utility/government relationships. For example, the guidelines require local governments to provide a multi-hazard map of the community. This would identify flood zones and areas prone to wind damage, consistent with the discussions by Dr. Domijan, University of South Florida, and Dr. Gurley, University of Florida at the January 23<sup>rd</sup> workshop.

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<sup>1</sup> <http://www.dca.state.fl.us/fdcp/dcp/hazardmitigation/index.cfm>



The mitigation guidelines also cite the need for land use patterns and discussion on development trends provided by the Future Land Use and Coastal elements of the local comprehensive plans. The section on mitigation techniques notes the importance of identifying areas subject to repetitive damage from disasters. It cites the need to develop plans to protect critical functions and structures. In other words, electric utilities need to develop plans to provide service to critical functions and structures. All of these functions are best performed in conjunction with the local governments most familiar with local needs and tolerances. This type of information can only assist the utility in designing and operating its system in the most cost efficient manner. An example of improved dialogue with local communities is FPL's decision to use public right-of-way in its placement of underground facilities.

Each investor-owned electric utility shall develop a program to increase coordination with local governments. The intent of expanding any existing utility/government liaison program is to promote on-going dialogue on key issues with the goal of reaching some accommodation or agreement on how the utility and the governmental agency will work together to address mutual concerns and prioritize needs, considering the time and financial constraints associated with given actions. This would include discussing local issues such as undergrounding and tree trimming matters.

(9) Collaborative Research on Effects of Hurricane Winds and Storm Surge.

During the January 23<sup>rd</sup> staff workshop, the utilities appeared to be unaware of work being done by universities to study the effects of hurricane winds and storm surge within Florida. Each utility appeared engaged in independent efforts to gather its own data with little, if any, coordination of resources and information.

Florida would be better served by consolidating utility resources through a centrally coordinated research and development effort with universities as well as research organizations. The purpose of such effort would be to further the development of storm resilient electric utility infrastructure and technologies that reduce storm restoration costs and outages to customers.

For the program to be effective, utilities must participate in funding. Each investor-owned electric utility shall establish a plan that increases collaborative research, establishes continuing collaboration, identifies objectives, promotes cost sharing, and funds necessary work. The investor-owned electric utilities shall solicit participation from the municipal electric utilities and rural electric cooperative utilities in addition to available educational and research organizations.

(10) A Natural Disaster Preparedness and Recovery Program.

A key element in minimizing storm-caused outages is having a natural disaster preparedness and recovery plan. A formal disaster plan provides an effective means to document lessons learned, improve disaster recovery training, pre-storm staging activities, and post-storm recovery. Each investor-owned electric utility shall develop, if it has not already, a formal disaster preparedness and recovery plan that outlines its disaster recovery procedures. Each

utility shall maintain a current copy of its utility disaster plan with the Commission on a going-forward basis.

**Severability**

The plan requirements established by this order are intended to apply separately to each investor-owned electric utility. Accordingly, a protest to this order by, or directed to, one investor-owned utility shall not prevent this order from becoming final at the end of the protest period as to any investor-owned utility that is not the subject of the protest.

It is therefore

ORDERED by the Florida Public Service Commission that each investor-owned electric utility in the state shall file a plan and estimated implementation costs for ongoing storm preparedness for the ten initiatives described above. It is further

ORDERED that these plans shall be filed on or before June 1, 2006. Our staff may extend the deadline upon a specific showing of hardship. It is further

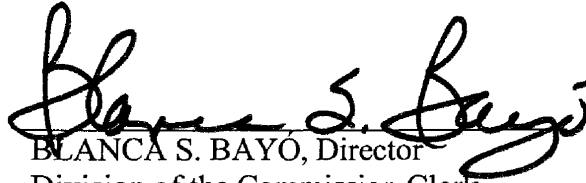
ORDERED that the provisions of this Order, issued as proposed agency action, shall become final and effective upon the issuance of a Consummating Order unless an appropriate petition, in the form provided by Rule 28-106.201, Florida Administrative Code, is received by the Director, Division of the Commission Clerk and Administrative Services, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on the date set forth in the "Notice of Further Proceedings" attached hereto. It is further

ORDERED that a timely protest to this order by, or directed to, one investor-owned utility shall not affect the other investor-owned utilities. This order will become final at the end of the protest period as to any investor-owned utility that is not the subject of a protest. It is further

ORDERED that any protest of this Order shall identify with specificity the initiative or plan requirement protested, and any such protest shall not prevent the remainder of the Order from becoming final and effective with respect to the electric investor-owned utility that has filed, or is the subject of, the protest. It is further

ORDERED that this docket shall remain open for this Commission to address the adequacy of the plans after they are filed.

By ORDER of the Florida Public Service Commission this 25th day of April, 2006.



BLANCA S. BAYO, Director  
Division of the Commission Clerk  
and Administrative Services

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NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing that is available under Section 120.57, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing will be granted or result in the relief sought.

Mediation may be available on a case-by-case basis. If mediation is conducted, it does not affect a substantially interested person's right to a hearing.

The action proposed herein is preliminary in nature. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, in the form provided by Rule 28-106.201, Florida Administrative Code. This petition must be received by the Director, Division of the Commission Clerk and Administrative Services, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on May 16, 2006.

In the absence of such a petition, this order shall become final and effective upon the issuance of a Consummating Order.

Any objection or protest filed in this/these docket(s) before the issuance date of this order is considered abandoned unless it satisfies the foregoing conditions and is renewed within the specified protest period.