

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Review of 2007 Electric Infrastructure
Storm Hardening Plan filed pursuant to Rule
25-6.0342, F.A.C., submitted by Florida Power
& Light Company.

DOCKET NO. 070301-EI
ORDER NO. PSC-07-1023-FOF-EI
ISSUED: December 28, 2007

The following Commissioners participated in the disposition of this matter:

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DOCUMENT NUMBER-DATE

11271 DEC 28 5

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FINAL ORDER APPROVING FLORIDA POWER & LIGHT'S
2007 STORM HARDENING PLAN

BY THE COMMISSION:

Background

The hurricanes of 2004 and 2005 that made landfall in Florida resulted in extensive storm restoration costs and long-term electric service interruptions for millions of electric investor-owned utility (IOU) customers. On January 23, 2006, we conducted a workshop to discuss the damage to electric utility facilities resulting from the 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 February 27, 2006, we issued Order No. PSC-06-0144-PAA-EI, requiring the IOUs to begin implementing an eight-year inspection cycle of their respective wooden poles.¹ In that Order, we noted:

The severe hurricane seasons of 2004 and 2005 have underscored the importance of system maintenance activities of Florida's electric IOUs. These efforts to maintain system components can reduce the impact of hurricanes and tropical storms upon utilities' transmission and distribution systems. An obvious key component in electric infrastructure is the transmission and distribution poles. If a pole fails, there is a high chance that the equipment on the pole will be damaged, and failure of one pole often causes other poles to fail. Thus, wooden poles must be maintained or replaced over time because they are prone to deterioration. Deteriorated poles have lost some or most of their original strength and are more prone to fail under certain environmental conditions such as high winds or ice loadings. The only way to know for sure which poles are acceptable, which poles must be treated or braced, and which poles must be replaced is through periodic inspections.

¹ Docket No. 060078-EI, In re: Proposal to require investor-owned electric utilities to implement ten-year wood pole inspection program.

Id. at 2. Also, in a separate order, we required Florida's local exchange telecommunications companies to implement an eight-year inspection cycle of their wooden poles.²

At a February 27, 2006, internal affairs conference, we were briefed on recommended additional actions to address the effects of extreme weather events on electric infrastructure. We also heard comments from interested persons and Florida's electric utilities regarding our staff's recommended actions. Ultimately, we decided the following:

- 1) All Florida electric utilities, including municipal utilities and rural electric cooperative utilities, would provide an annual Hurricane Preparedness Briefing;
- 2) Our staff would file a proposed agency action recommendation for the April 4, 2006, agenda conference requiring each investor-owned electric utility to file plans and estimated implementation costs for ongoing storm preparedness initiatives;
- 3) A docket would be opened to initiate rulemaking to adopt distribution construction standards that are more stringent than the minimum safety requirements of the National Electrical Safety Code (NESC); and
- 4) A docket would be opened to initiate rulemaking to identify areas and circumstances where distribution facilities should be required to be constructed underground.

On April 25, 2006, we issued Order No. PSC-06-0351-PAA-EI, requiring all investor-owned electric utilities to file plans and estimated implementation costs for ten ongoing storm preparedness initiatives (Ten Initiatives) on or before June 1, 2006.³ The Ten Initiatives are:

- 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.

² Order No. PSC-06-0168-PAA-TL, issued March 1, 2006, in Docket No. 060077-TL, In re: Proposal to require local exchange telecommunications companies to implement ten-year wood pole inspection program.

³ Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

These Ten Initiatives were not intended to encompass all reasonable ongoing storm preparedness activities. Rather, we viewed these initiatives as the starting point of an ongoing process.⁴ By Order Nos. PSC-06-0781-PAA-EI (TECO, Florida Public Utilities Company), PSC-06-0947-PAA-EI (PEF, Gulf), and PSC-07-0468-FOF-EI (FPL), we addressed the adequacy of the IOUs' plans for implementing the Ten Initiatives.

Separate from the Ten Initiatives, we pursued rulemaking to address distribution construction standards that are more stringent than the minimum safety requirements of the NESC and the identification of areas and circumstances where distribution facilities should be required to be constructed underground.⁵ Rule 25-6.0342, Florida Administrative Code (F.A.C.), was adopted as a result of these rulemaking efforts.⁶

Rule 25-6.0342, F.A.C., requires each IOU to file an Electric Infrastructure Storm Hardening Plan (Plan) for review and approval by us. The Rule also requires the Plan to contain a description of construction standards, policies, practices, and procedures to enhance the reliability of overhead and underground electrical transmission and distribution facilities. The Rule requires at a minimum, that each IOU's Plan address the following:

- (a) Compliance with the NESC.
- (b) Extreme wind loading (EWL) standards for: (i) new construction, (ii) major planned work, including expansion, rebuild, or relocation of existing facilities, and (iii) critical infrastructure facilities and along major thoroughfares.
- (c) Mitigation of damage due to flooding and storm surges.
- (d) Placement of facilities to facilitate safe and efficient access for installation and maintenance.
- (e) A deployment strategy including: (i) the facilities affected, (ii) technical design specifications, construction standards, and construction methodologies (iii) the communities and areas where the electric infrastructure improvements are to be made, (iv) the impact on joint use facilities on which third-party attachments exist, (v) an estimate of the costs and benefits to the utility of making the electric infrastructure improvements, and (vi) an estimate of the costs and benefits to third-party attachers affected by the electric infrastructure improvements.
- (f) The inclusion of Attachment Standards and Procedures for Third-Party Attachers.

On May 7, 2007, Florida Power & Light Company (FPL), Gulf Power Company (Gulf), Progress Energy Florida, Inc. (PEF), and Tampa Electric Company (TECO) each filed its 2007 Electric Infrastructure Storm Hardening Plan. Docket Nos. 070297-EI (TECO), 070298-EI

⁴ Order No. PSC-06-0947-PAA-EI, page 2, issued November 13, 2006, in Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

⁵ Order No. PSC-06-0556-NOR-EU, issued June 28, 2006, in Docket No. 060172-EU, In re: Proposed rules governing placement of new electric distribution facilities underground, and conversion of existing overhead distribution facilities to underground facilities, to address effects of extreme weather events, and Docket No. 060173-EU, In re: Proposed amendments to rules regarding overhead electric facilities to allow more stringent construction standards than required by National Electric Safety Code.

⁶ Order Nos. PSC-07-0043-FOF-EU and PSC-07-0043A-FOF-EU.

(Progress), 070299-EI (Gulf), and 070301-EI (FPL) were opened to address each filing. On June 19, 2007, we voted to set the dockets directly for a formal administrative hearing, with the additional mandate for our staff to conduct a series of informal workshops to allow the parties and our staff to identify disputed issues and potential areas for stipulation. By Order No. PSC-07-0573-PCO-EI, issued July 10, 2007, these dockets were consolidated for purposes of the hearing with the understanding that each utility's Plan would be ruled on separately.

Intervention in FPL's docket was granted to the following parties: BellSouth Telecommunications, Inc., D/B/A AT&T Florida (AT&T);⁷ Embarq Corporation (Embarq);⁸ Florida Cable Telecommunication Association, Inc. (FCTA);⁹ Verizon Florida, LLC (Verizon);¹⁰ the Municipal Underground Utilities Consortium (MUUC);¹¹ the Town of Palm Beach, Florida (Palm Beach);¹² and the Town of Jupiter Island (Jupiter Island).¹³

A formal administrative hearing was held October 3-4, 2007. During the course of the hearing, the parties reached agreement on a number of issues in this docket, resulting in multiple issues being stipulated. We were also presented with a stipulated agreement called a "Process to Engage Third-Party Attachers." This process is designed to allow for the exchange of information between the parties. Per the stipulation, information will be shared among the parties and annual status reports will be filed with us. Disputes or challenges to issues related to a utility's Plan shall be resolved by us in accordance with Rule 25-6.0342(7), F.A.C. A request for dispute resolution can be filed at any time by a customer, applicant for service, or attaching entity.

This Order addresses FPL's Plan. We have jurisdiction to address this matter pursuant to Sections 366.04 and 366.05, Florida Statutes.

Summary of the Plan

Some of the issues regarding FPL's Plan were stipulated. The remaining issues for FPL were subject to administrative hearing. FPL's Plan proposes a three-prong approach to hardening its distribution infrastructure: proactive implementation of EWL for critical facilities; Incremental Hardening for commercial facilities that serve important roles following a storm; and revised Design Guidelines that are designed to move FPL's system toward overall EWL hardening gradually over time. All of FPL's transmission construction is designed using extreme wind loading criteria.

FCTA urges denial of FPL's Plan because FPL is proposing to implement an extreme wind load criteria for the design and construction of its distribution facilities. FCTA contends

⁷ Order No. PSC-07-0611-PCO-EI, issued July 30, 2007.

⁸ Order No. PSC-07-0637, issued August 6, 2007.

⁹ Order No. PSC-07-0612-PCO-EI, issued July 30, 2007.

¹⁰ Order No. PSC-070622-PCO-EI, issued July 31, 2007.

¹¹ Order No. PSC-07-0658-PCO-EI, issued August 15, 2007.

¹² Order No. PSC-07-0619-PCO-EI, issued July 31, 2007.

¹³ Order No. PSC-07-0620-EI, issued July 31, 2007.

FPL's forensic data is insufficient to justify the costs. Many of the suggestions made by FCTA as alternatives to an EWL criteria are incorporated in FPL's Plan. The record shows over 50 percent of the pole failures during Hurricane Wilma were due to wind-only causes and that absent FPL's new program, storm damages similar to those incurred during Hurricane Wilma are likely to reoccur.

Moreover, FPL also stipulated to an agreement between the electric utilities and attachers. As stated, the agreement, a "Process to Engage Third-Party Attachers," resolved an important provision in Rule 25-6.0342, F.A.C., requiring each utility to have Attachment Standards and Procedures that meet or exceed the NESC standards as part of their Storm Hardening Plans. This process is designed to allow for the exchange of information between the parties. Per the stipulation, each IOU will share information with the parties and file an annual status report with us. Disputes or challenges to issues related to a utility's Plan shall be resolved by us in accordance with Rule 25-6.0342(7), F.A.C. A request for dispute resolution can be filed at any time by a customer, applicant for service, or attaching entity.

Florida Power & Light Company's Plan

National Electric Safety Code Compliance

The parties stipulated that FPL's Plan addresses the extent to which, at a minimum, the Plan complies with the NESC(ANSI C-2) that is applicable pursuant to subsection 25-6.0345(2), F.A.C. FPL's distribution facilities comply with, and in most cases exceed, the minimum requirements of the NESC. FPL's transmission structures also comply with the NESC. Based on the stipulation of the parties and the evidence in the record, we find that FPL's plan meets the requirement of Rule 25-6.0342(3)(a), F.A.C.

Extreme Wind Loading Standards – New Construction

As stated above, FPL's Plan proposes a three-prong approach to hardening its distribution infrastructure: proactive implementation of EWL for critical facilities; Incremental Hardening for commercial facilities that serve important roles following a storm; and revised Design Guidelines that are designed to move FPL's system toward overall EWL hardening gradually over time.

Subsequent to the 2004 storms season, FPL recognized that its informal forensic system needed to be improved. FPL developed a forensic team with procedures and processes that were subsequently used to perform forensic evaluations of Hurricane Katrina and Wilma in 2005. The intent of FPL's 2005 forensic efforts was to determine why equipment failed and to use this data to help improve system performance and/or restoration time when exposed to future storms. FPL's forensic efforts were compiled in a document titled "Technical Report: Post Hurricane Wilma Engineering Analysis by KEMA Final Report for FPL" ("KEMA Report").¹⁴

¹⁴ Order No. PSC-06-0464-FOF-EI, issued May 30, 2006, in Docket No. 060038-EI, In re: Petition for issuance of a storm recovery financing order, by Florida Power & Light Company.

FPL's storm damage data showed that, during Hurricane Wilma, distribution pole failures due to "wind-only" were two and one-half times greater than any other cause of failure identified, such as trees, deterioration, and possible overloading. Transmission structure failure due to "wind-only" was approximately one percent. FPL concluded that a large part of the storm damage to FPL's distribution poles was due to "wind-only" damage and that transmission structures which are already built to the NESC's established EWL standards performed well compared to the distribution system. FPL noted that other storm hardening activities being implemented did not include actions directed at reducing "wind-only" storm damages.

Historically, FPL designed its distribution facilities based on the wind loading specified in NESC Rule 250B, titled "Combined Ice and Wind Loading For Grade B Construction." After participating in FPL's forensic reviews, FPL Witness McEvoy concluded "it is apparent that using the 'combined ice and wind loading,' is inadequate and fails to produce a system that is well suited to withstanding hurricane force winds." Witness McEvoy explained that "the 'combined ice and wind loading' category is especially ill-suited to Florida because it is in the 'light loading' area based on the absence of significant icing risk and therefore applies wind-loading criteria that assume exposure to only relatively modest winds." He went on to say that "[w]ith Florida's exposure to storm winds that regularly exceed this assumption, designing to the 'combined ice and wind loading' criteria simply does not seem logical. FPL Witness Miranda noted that based on the feedback from customers and public officials, "we cannot continue to have a repeat of our hurricane performance going forward." Without fundamental and significant changes, FPL believes the level of customer outages and storm damages from future storms would be much like that experienced in the 2004 and 2005 hurricane seasons.

The change FPL proposes is the application of a EWL criteria based on the extreme wind speeds shown in Figure 250-2(d) of the NESC. In setting its EWL criteria, FPL evaluated a 50-year period of wind speed data compiled by the American Society of Civil Engineers for its entire service area at a height of 33 feet above ground level. The expected extreme wind speeds ranged from 105 miles per hour to 150 miles per hour. FPL evaluated each county that it serves by applying the highest wind rating for that county. FPL decided on three extreme wind levels: 105, 130, and 145 miles per hour with each extreme wind speed corresponding to unique geographic areas. FPL believes these three levels appropriately balance efficiency and the range of extreme wind speeds recorded for its service area. Extreme wind loads for FPL's distribution facilities are then calculated using methods established by the NESC for EWL.

In 2007, FPL's Plan is projected to result in storm hardening approximately 145 overhead circuit miles. In 2008, FPL estimates the EWL criteria will be applied to approximately 45-60 feeders and that it will incrementally storm harden 15-30 additional feeders. Estimates for 2009 are expected to target between 80 and 150 feeders. FPL intends to complete all EWL upgrades to infrastructure serving critical customers by the end of 2009. However, the activities for 2008 and 2009 are not final at this time. FPL's Plan provides for inclusion of new information as it becomes available, revisions, and annual updates.

FCTA Witness Harrelson recommends using the EWL criteria for limited pilot projects with wind speed measuring devices to enable the utilities to collect forensic data about the costs

and benefits to this standard in Florida. His conclusions are primarily based on (i) the lack of an explicit NESC requirement for EWL criteria for structures 60 feet or less above ground, (ii) FPL's forensic information is not conclusive, and (iii) costs and benefits associated with FPL's Plan through 2009 are not available. The following analysis discusses the specific subject matter that FCTA believes support denial of FPL's Plan as filed, and applicable rebuttal testimony by FPL.

FCTA Witness Harrelson noted that the NESC exempts from the EWL criteria any structures and its supporting facilities that are 60 feet or less above ground. The NESC Rule 250B addresses the effect of wind speeds on distribution poles in Florida by application of pressure equivalent to wind speeds of up to 60 miles per hour. Witness Harrelson opined that this standard thus takes into account the higher wind speeds expected to be experienced in Florida. Witness Harrelson believes that the NESC committee responsible for strengths and loadings of overhead electrical system considered and rejected the application of EWL criteria to distribution lines 60 feet or less in height. Witness Harrelson stated his belief that the NESC committee relied on utility industry comments that most distribution pole failures in extreme weather are the result of secondary damage effects from trees and debris, not wind alone, and that the system would have failed even if designed to the EWL criteria. Witness Harrelson was not aware if any of the comments to the NESC committee that included statistically valid forensic data on hurricane impacts. Witness Harrelson's understanding was that utility forensic analysis was more observational and not a detailed formal evaluation such as FPL's forensic analysis of Katrina and Wilma. He was not aware of any other formal attempts to collect forensic data on hurricanes. The FCTA did not enter into evidence any copies of storm damage analysis or written comments that may have been submitted to the NESC committee.

FPL Witness McEvoy noted that "the NESC is not intended as a design specification or as an instruction manual." He went on to say, "rather (the NESC) is a set of rules that comprise safety standards applicable on a national basis. If, as is often the case, a utility has reasons to exceed these minimum standards, it is free to do so." Witness McEvoy also stated, "After my experience in the forensic effort in Hurricane Wilma and the conclusions of the KEMA report on that effort indicated that wind only was the predominant cause of distribution pole breakage, I no longer believe the 60-foot exemption can be used for FPL's service territory."

After reviewing FPL's forensic data, FCTA Witness Harrelson opined that nothing in the KEMA Report suggests that the EWL criteria is justified for distribution poles in Florida. Witness Harrelson did not have any discussions with KEMA concerning information in the KEMA Report. FPL Witness McEvoy commented that Witness Harrelson misinterpreted much of the information in the KEMA Report.

Witness Harrelson also reviewed the Storm Pole Replacement Analysis by Davies Consulting, Inc. He concluded the analysis shows that stronger hurricanes generally result in more downed poles. He believes the analysis is inconclusive regarding an EWL criteria because outages are caused by falling trees, rotten poles, cascading breaks, imbedded tornadoes, etc.

Witness Harrelson noted various storm hardening activities he believed to be prudent, practical and cost-effective. He was unaware of any deficiencies in FPL's Plan in addressing the storm hardening activities he identified. The additional storm hardening initiatives suggested by FCTA Witness Harrelson, as alternatives to an EWL criteria, were shown to already be incorporated in FPL's Plan. Witness Harrelson believes that EWL construction is inappropriate where large trees near enough to fall on the lines exceed the height of the line. However, the information necessary to develop loading factor analysis on shielding effects of buildings and trees is not available. FPL Rebuttal Witness McEvoy noted that in the absence of detailed statistical data analysis, consistent with the requirements of the NESC, no adjustments for these factors will be made.

FCTA was critical of FPL's cost and benefits analysis. However, Witness Harrelson did not undertake and was not aware of anyone within FCTA or its members who was developing costs for FPL's 2007 storm hardening projects.

Witness Harrelson provided significant and useful point and counterpoint discussion to help qualitatively assess FPL's Plan. FCTA supports pilot EWL projects but did not identify with specificity the scope, costs, and benefits the pilot EWL projects would provide. However, without such data, we find that FCTA has not shown the cost and benefits of its alternative. Furthermore, FPL has already implemented pilot EWL projects. FPL noted that these pilot projects provided valuable insight into implementing storm hardening on a broader, system-wide basis. Consequently, we believe that further EWL pilot projects are not necessary.

As noted above, Witness Harrelson's assessments of other, non-EWL alternatives for storm hardening options fail to recognize many of the storm hardening initiatives that were initiated subsequent to the KEMA Report, including pole inspections and the Ten Initiatives. Witness Harrelson did not refute FPL's forensic data indicating that wind-only hurricane damage occurred during Hurricane Wilma. As FPL noted, none of its previous actions specifically targeted wind-only damages to distribution facilities. We believe this is of special interest because FPL's Plan specifically targets the causes of Hurricane Wilma storm damages in order to avoid a repeat performance. We find that pursuing only additional pilot projects marginalizes a known cause of storm damage and customer outages for FPL's customers for an unspecified period of time.

Upon consideration, the evidence shows that (a) FPL reviewed historical performance of its distribution system and damages specially resulting from EWL, (b) FPL concluded it did not have a program addressing wind-only damages, (c) FPL's customers do not want to experience a recurrence of Hurricane Wilma outages, and (d) FPL developed an EWL criteria to reduce the extent of damages and cost of restoration for future storm outages. Furthermore, FPL's Plan provides for inclusion of new information, revisions, and annual updates. FPL's Plan incorporates the ability to pursue reasonable means to further mitigate customer outages and restoration costs due to extreme wind and other extreme weather events. Therefore, we find that FPL's Plan meets the requirements of Rule 25-6.0342(3)(b)1, F.A.C.

Extreme Wind Loading Standards – Major Planned Work

FCTA argued that we should deny FPL's Plan because FPL proposes implementation of an EWL criteria for its service area. We addressed FCTA's opposition to FPL's proposed EWL criteria above.

In its brief, at page 6, MUUC seeks clarification of the incremental hardening component of FPL's Plan. MUUC believes FPL's Plan indicates that an existing line, which is built to less-than- EWL standards, will be rebuilt to its existing wind-speed rating. MUUC does not specifically identify the text in FPL's Plan on which MUUC is commenting. MUUC did not provide any witnesses, evidence, or cross examine any FPL witnesses regarding its concerns with FPL's definition or description of Incremental Hardening.

FPL's Plan, at page 11, states: "The objective of Incremental Hardening is to optimize the existing distribution infrastructure and increase the overall wind profile of a feeder to a higher wind rating, up to and including EWL." Incrementally hardening a feeder may not always achieve EWL, however, this approach will position FPL to do so in the future." FPL's Plan describes the Incremental Hardening activity as achieving incremental storm hardening up to an EWL criteria for individual poles and components but not necessarily an upgrade to the EWL criteria for the entire pole line or circuit.

As discussed above, we find that FPL's Plan meets the requirements of the Rule because (a) FPL reviewed historical performance of its distribution system and damages specially resulting from EWL, (b) FPL concluded it did not have a program addressing wind-only damages, (c) FPL's customers do not want to experience a recurrence of Hurricane Wilma outages, and (d) FPL developed an EWL criteria to reduce the extent of damages and cost of restoration for future storm outages. Furthermore, FPL's Plan provides for inclusion of new information, revisions, and annual updates. Consequently, FPL's Plan incorporates the ability to pursue reasonable means to further mitigate customer outages and restoration costs due to extreme weather events.

Upon consideration, FPL is incorporating its proposed EWL criteria into its design and construction standards for new facilities. FPL's Plan calls for targeted incremental hardening up to and including meeting its EWL criteria. Therefore, we find that FPL's Plan meets the requirements of Rule 25-6.0342(3)(b)2, F.A.C.

Extreme Wind Loading Standards – Critical Infrastructure

FPL defines critical infrastructure facilities (CIF) as facilities serving critical customers such as hospitals, 911 centers, special needs shelters, water treatment plants, police and fire stations. FPL believes these are CIFs because these facilities are essential to the health, safety, welfare, and security of the public. A listing of FPL's CIF projects for 2007 is shown in Exhibit 20, page 4. Exhibit 21, pages 1-3, lists FPL's CIF projects for 2008 and 2009. To help identify CIF projects, FPL partnered with local Emergency Operations Centers. FPL proposes to apply EWL analysis to existing and new feeders and associated laterals directly serving CIF. Initially,

FPL's Plan targets acute care facilities. Regarding major thoroughfares, FPL's Plan applies EWL analysis to approximately 43 overhead crossings of Interstate 75 and the Turnpike.

As discussed above, FPL's Plan meets the requirements of the Rule because (a) FPL reviewed historical performance of its distribution system and damages specially resulting from EWL, (b) FPL concluded it did not have a program addressing wind-only damages, (c) FPL's customers do not want to experience a recurrence of Hurricane Wilma outages, and (d) FPL developed an EWL criteria to reduce the extent of damages and cost of restoration for future storm outages. Furthermore, FPL's Plan provides for inclusion of new information, revisions, and annual updates. Consequently, FPL's Plan incorporates the ability to pursue reasonable means to further mitigate customer outages and restoration costs due to extreme wind and other extreme weather events.

Upon consideration, FPL is incorporating its proposed EWL criteria into its design and construction standards for new facilities and FPL's Plan calls for application of EWL analysis to infrastructure that serve CIFs and overhead crossing of Interstate 75 and the Turnpike. Therefore, we find FPL's Plan meets the requirements of Rule 25-6.0342(3)(b)3, F.A.C.

Mitigation of Flooding and Storm Surge Damage

FPL's Plan expands on previously initiated underground storm hardening activities by implementing an EWL criteria to reduce wind-only damages to its distribution facilities. FPL's other storm hardening activities include promoting underground construction.

MUUC's position, asserting FPL did not adequately analyze the costs and benefits of undergrounding, is not explained in MUUC's Brief. The potential deficiencies, if any, in FPL's design of underground systems were not specifically challenged by MUUC. Consequently, there is no record evidence supporting MUUC's position that FPL's Plan does not adequately address underground design issues. MUUC may be implying that FPL should increase the number of projects where existing overhead facilities are converted to underground facilities (undergrounding). However, there is no evidence in the record to support a finding that FPL's efforts are insufficient.

Upon consideration, FPL reasonably assessed what actions to pursue to reduce customer outages and restoration time resulting from damages incurred to underground and supporting distribution facilities from flooding and storm surges. FPL's Plan provides for inclusion of new information, revisions, and annual updates. Therefore, we find FPL's Plan meets the requirements of Rule 25-6.0342(3)(c), F.A.C.

Facility Placement

The parties stipulated that FPL's Plan addresses the extent to which the placement of new and replacement distribution facilities facilitate safe and efficient access for installation and maintenance pursuant to Rule 25- 6.0341, F.A.C. FPL's Plan includes Distribution Guidelines which state: every attempt should be made to place new or replacement poles in private

easements or as close to the front edge of property (right of way line) as practical; overhead lines should be placed in front lines or accessible locations where feasible; and concrete poles are not to be placed in inaccessible locations or locations that could potentially become inaccessible. Based on the stipulation of the parties and the evidence in the record, we find that FPL's plan meets the requirements of Rule 25-6.0342(3)(d), F.A.C.

Deployment Strategies – Facilities Affected, Including Specifications and Standards

FPL's Plan discusses FPL's 2006 pilot EWL projects. FPL noted that these pilot projects provided valuable insight into implementing storm hardening on a broader, system-wide effort. FPL listed 186 projects for 2007 through 2009. FPL updated its distribution engineering reference manual to include its EWL criteria. FPL also updated its distribution construction standards for hardening applications.

FCTA is critical of FPL's deployment strategy because FCTA opposes FPL's proposed EWL criteria and suggests alternative actions are available. As stated above, FCTA Witness Harrelson identified various storm hardening activities he believed to be prudent, practical, and cost-effective. Witness Harrelson was unaware of any deficiencies in FPL's Plan to address the activities. Additionally, alternatives to an EWL criteria were shown to already be incorporated in FPL's Plan. We have previously addressed FCTA's opposition and alternative to FPL's Plan above.

Upon consideration, FPL's 2006 pilot projects enabled FPL to reasonably gauge which activities were technically practical, the scope of activities that FPL could address within the foreseeable future, the resources FPL would require for those activities, and also identify which construction standards and procedures required updating to allow a coordinated implementation. FPL's Plan includes updates to technical design specifications, construction standards, and construction methodologies employed implementing its EWL criteria. Therefore, we find FPL's Plan meets the requirements of Rule 25-6.0342(4)(a), F.A.C.

Deployment Strategies – Areas of Infrastructure Improvements

FPL provided a detailed description of the location and the routes for facilities projects CIF to all parties in this proceeding. FPL's filing lists a total of 186 project sites for the period 2007 through 2009. We are of the opinion that the type of summary information provided in Exhibit 21 is sufficient for local governmental officials to determine whether additional discussion with FPL is warranted. Also, the record reflects that FPL was responsive to the parties interested in additional details. Based on the information FPL provided, it appears FPL would be similarly responsive to inquiries for additional data from local governments who are not parties to this case because of FPL's Storm Preparedness Initiatives. FPL's Storm Preparedness Initiatives, which are incorporated into FPL's Plan by reference, are established pursuant to Order No. PSC-06-0781-PAA-EI. Pages 15 and 16 of the Order address FPL's initiative to increase utility coordination with local governments. Therefore, we find that FPL's Plan does not require any expansion to address FPL's provision of detailed data to officials and

representatives of the communities impacted by FPL's storm hardening projects because such a requirement already exists.

MUUC opines that FPL's Plan should be expanded to include sufficiently detailed information MUUC believes is required by the Rule and required for local governmental officials to understand the work contemplated. It appears that MUUC seeks an initial filing with more detailed data with the Plan. Because there is no evidence that FPL was not responsive to interested individuals, such burdensome filing requirements are not necessary.

Upon consideration, FPL's Plan provides a detailed description of the communities and areas within the utility's service area where the electric infrastructure improvements, including facilities identified by the utility as critical infrastructure and along major thoroughfares. FPL's Plan lists 186 project sites for the period 2007 through 2009. Therefore, we find that FPL's Storm Hardening Plan meets the requirements of Rule 25-6.0342(4)(b), F.A.C.

Deployment Strategy – Joint Use Facilities

FPL states that all Attachers were provided engineering drawings and line diagrams for all 2007 Community of Interest Facilities and Incremental Hardening Projects. For 2007, all attachers actively participating in the proceeding acknowledged that sufficient details had been provided. Similar details for 2008 and 2009 are not available at this time, since detailed plans for these two later years have not been developed and approved. However, details for these years will be provided to attachers when FPL annually updates its Plan. FPL intends to file annual updates to its Plan to provide detailed engineering and construction information and costs for 2008 projects before the end of 2007.

All parties other than MUUC either have no objection to FPL's Plan as it relates to the requirements of Rule 25-6.0342(4)(c), F.A.C., or they take no position. MUUC contends that FPL has not met the requirements of Rule 25-6.0342(4)(c), F.A.C., but did not elaborate on its position, nor did it offer any testimony regarding this issue.

All the parties have stipulated to the Process To Engage Third-Party Attachers as a means to receive ongoing detailed information regarding the utility's hardening plans. The Process allows electric utilities to receive attacher input regarding possible cost-effective alternatives to accomplish storm hardening projects affecting their company's interests. In addition, Rule 25-6.0342(7), F.A.C., provides that any dispute to a utility's storm hardening plan can be brought before us for remedy. These mechanisms provide attachers sufficient opportunity to resolve future issues with utility hardening plans.

Upon consideration, we find that FPL has provided detailed descriptions and maps of electric infrastructure improvements, including joint use facilities to the extent possible. The Process To Engage Third-Party Attachers provides an ongoing forum for detailed information to mutually flow back and forth between the utilities and interveners. We find that FPL has met its obligation to provide a detailed description of the extent to which the electric infrastructure improvements involve joint use facilities on which third-party attachments exist and sufficient

information exchange and dispute resolution mechanisms are provided by the Process To Engage Third-Party Attachers. Therefore, we find that the FPL's Plan meets the requirements of Rule 25-6.0342(4)(c), F.A.C.

Deployment Strategy – Utility Costs/Benefits Estimates

FPL, in developing its Plan, comparably and independently assessed EWL and undergrounding in terms of storm hardening costs and benefits. FPL Witness Miranda was questioned regarding cost data and analysis pertaining to a Rule 25-6.115, F.A.C., contribution-in-aid-of-construction (CIAC) calculation and a Governmental Adjustment Factor (GAF) tariff. FPL responded that it is working to provide the information as quickly as it can. FPL believes that the benefit/cost analysis of undergrounding that supports the GAF is comparable to FPL's benefit/cost analysis for EWL.

MUUC maintains that FPL's Plan does not adequately address the total costs and benefits of using undergrounding (the conversion of existing overhead facilities to underground facilities) as a storm hardening technique or technology. The term "total costs and benefits" is not defined within the record. Consequently, MUUC has stated a standard of review after the fact without defining the standard. We find that the Rule clearly requires a reasonable estimate of known costs and benefits be made. FPL has provided the information it has and has also made clear what information it does not currently have.

It appears that if FPL's benefit/cost analysis for GAF was adequate, then FPL's benefit/cost analysis for an EWL criteria should be adequate. Consequently, FPL's Plan adequately addresses alternative construction modes on a comparable basis. FPL does not currently have sufficient information to distinguish between the benefits attributable to one type of hardening activity versus another. FPL also stated that there is little directly measured data on the improved resilience and hence storm restoration costs savings resulting from increasing the storm resilience. FPL's testimony on the lack of ability to directly measure storm performance data, including benefits, was not disputed.

FPL's Plan implementation costs for 2007 range from \$48.5 million to \$61.5 million. Projects on infrastructure serving critical customers and crossing major thoroughfares are estimated to be between \$29 million and \$37 million. Major planned expansion, rebuild or relocations are estimated to be between \$14 million and \$16.5 million. New distribution facilities construction costs are expected to be between \$5.5 million and \$8 million. In 2008 and 2009, FPL expects to continue a similar deployment. Projected costs for 2008 and 2009 are between \$75 million and \$125 million and \$100 million to \$150 million, respectively.

The estimated benefits from FPL's Plan are: (i) reduced damage to electrical infrastructure for Category 1, 2, and 3 hurricanes, (ii) less restoration time, and (iii) less restoration costs. The full extent of the benefits is impossible to estimate at this time. Presently, there is limited or no historical data available for purposes of conducting overall cost/benefit analyses on many of these new actions and little directly measured data on improved storm resilience. To estimate the improved storm resilience resulting from its Plan, FPL relied on the

2004-2005 hurricane season experiences, forensic analysis of damaged facilities, and an independent analysis prepared by Davies Consulting, Inc. for FPL. Assuming a hurricane frequency of once every 3-5 years, FPL estimates a storm restoration cost savings, on a net present worth basis, of approximately 70% to 45% of the hardening costs over a 30 year period. FPL's assumptions regarding the average frequency of hurricanes is based on statements from the National Hurricane Center and the historical frequency of storms impacting FPL.

Upon consideration, FPL's Storm Hardening Plan is cost-effective because the Plan produces the desired results of reduced customer outages and reduced overall restoration time as efficiently as possible from an economic perspective. FPL's approach allows for modifications and refinements as more experience is gained, more and better forensics data and analysis becomes available, and new systems and technologies enter the market. FPL made a reasonable effort to assess the costs and benefits consistent with the requirements of Rule 25-6.0342(4)(d), F.A.C. Therefore, we find that FPL's Plan meets the requirements of Rule 25-6.0342(4)(d), F.A.C.

Deployment Strategy – Attachers Costs/Benefits Estimates

FPL states that all Attachers were provided engineering drawings and line diagrams for all 2007 Community of Interest Facilities and Incremental Hardening Projects. For 2007, all attachers actively participating in the proceeding acknowledged that sufficient details had been provided. Similar details for 2008 and 2009 are not available at this time, since detailed plans for these two later years have not been developed and approved. However, details for these years will be provided to attachers when FPL annually updates its Plan. FPL intends to file annual updates to its Plan to provide detailed engineering and construction information and costs for 2008 projects before the end of 2007.

FCTA contends that it does not yet have enough detailed information to provide a specific estimate of the costs and benefits that FPL's Plan will have on its cable operator members. Further, it states that given the uncertainty about the specific cost benefit impact on third-party attachers, FCTA supports limited pilot projects and continued monitoring to enable affected parties to study the potential benefits of FPL's planned hardening activities.

MUUC notes that FPL's Plan "reports costs as reported to FPL by AT&T and Embarq," apparently contending that FPL should have developed its own cost and benefit analyses. MUUC also takes the position that FPL's Plan does not adequately provide an estimate of the benefits to third-party attachers of storm hardening efforts.

We agree that FPL has included the third-party attachers' own cost/benefit estimates. However, this approach is consistent with Rule 25-6.0342(4)(e), F.A.C., which requires, "An estimate of the costs and benefits, obtained pursuant to subsection (6) below, to third-party attachers affected by the electric infrastructure improvements." The referenced subsection (6) pertains to the utilities seeking input from and attempts in good faith to accommodate concerns raised by the attachers. The fact that FPL, AT&T, and Embarq were able to identify costs and

benefits from the hardening efforts outlined in FPL's Storm Hardening Plan 2007-2009 indicates sufficient data was available to complete an initial estimate.

Furthermore, the Process To Engage Third-Party Attachers, stipulated by the parties, provides a beneficial ongoing forum for 2008-2009 Plan data to flow between the utilities and attachers. The Process ensures that each party can request and receive detailed information necessary to determine hardening costs and benefits for its company. Further, attachers can evaluate detailed information of utility hardening activities to reduce restoration time frames and determine the potential impacts. The Process To Engage Third-Party Attachers allows FCTA and MUUC to request and receive detailed data necessary to complete a cost/benefit estimate for each year, and to determine the benefits of anticipated reduced restoration time frames.

Finally, Rule 25-6.0342(7), F.A.C., provides that the parties may bring future disputes related to the Plan and its implementation to us for resolution. Therefore, we find that FPL's Plan meets the requirements of Rule 25-6.0342(4)(e), F.A.C.

Attachment Standards and Procedures

The parties stipulated that FPL's Plan includes Attachment Standards and Procedures as called for by Rule 25-6.0342, F.A.C. These standards and procedures reflect the attachments and standards previously in place, with the only substantive updates being made to incorporate FPL's proposed hardening construction standards and design guidelines. Based on the stipulation of the parties and the evidence in the record, we find that FPL's Plan meets the requirement of Rule 25-6.0342(5), F.A.C.

Plan Approval

FPL's plan presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. The cost/benefit estimates provided in FPL's Plan are non-binding and subject to change. We expect FPL to prudently manage its resources and assets for the benefit of the general body of ratepayers. The actual expenditures resulting from FPL's storm hardening Plan will be reviewed when cost recovery is requested. Additionally, the "Process to Engage Third-Party Attachers," which all parties previously stipulated to, facilitates information sharing among the parties and requires regular status reports to be filed with our staff. An additional level of protection is provided by Rule 25-6.0342(7), F.A.C., which provides for any disputes or challenges to issues related to FPL's storm hardening plan, including the Attachment Standards and Procedures, shall be resolved by us. Furthermore, a request for dispute resolution can be filed at any time by a customer, applicant for service, or attaching entity.

FPL's Plan includes many ongoing storm hardening activities that are expected to produce valuable data upon which to base further modifications to its Plan. For example, the gathering and review of forensic data and performing cost/benefit analysis. We expect FPL to continue working with local communities and develop pilot projects that will best address

specific community needs with the most appropriate and cost-effective storm hardening techniques.

Upon consideration, we find that FPL's Plan meets the requirements of enhancing reliability and reducing restoration costs and outage times in a prudent, practical, and cost-effective manner to the affected parties. Therefore, FPL's Plan is approved.

Storm Hardening Plan Filing Date

Rule 25-6.0342, F.A.C. requires each investor owned utility to file its updated Storm Hardening Plan every three years. Pursuant to this rule, FPL shall file an updated Storm Hardening Plan by May 1, 2010.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that Florida Power & Light Company's 2007 Electric Infrastructure Storm Hardening Plan is consistent with Rule 2506.0342, Florida Administrative Code, and is therefore approved. It is further

ORDERED that in accordance with Rule 25-6.0342, F.A.C., Florida Power & Light's updated storm hardening plan shall be filed by May 1, 2010. It is further

ORDERED that upon expiration of the period for appeal, Docket No. 070301-EI shall be closed.

By ORDER of the Florida Public Service Commission this 28th day of December, 2007.



ANN COLE
Commission Clerk

(S E A L)

KY, LCB, KEF

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 or judicial review of Commission orders that is available under Sections 120.57 or 120.68, 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 or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request:

- 1) reconsideration of the decision by filing a motion for reconsideration with the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or
- 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Office of Commission Clerk and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.