

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 Gulf Power  
Company.

DOCKET NO. 070299-EI  
ORDER NO. PSC-07-1022-FOF-EI  
ISSUED: December 28, 2007

The following Commissioners participated in the disposition of this matter:

LISA POLAK EDGAR, Chairman  
MATTHEW M. CARTER II  
KATRINA J. McMURRIAN  
NANCY ARGENZIANO  
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APPEARANCES:

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FINAL ORDER APPROVING GULF POWER COMPANY'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.<sup>1</sup> 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.

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.<sup>2</sup>

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:

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

<sup>2</sup> 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.

- 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.<sup>3</sup> 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.

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.<sup>4</sup> 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

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

<sup>4</sup> 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.

required to be constructed underground.<sup>5</sup> Rule 25-6.0342, Florida Administrative Code (F.A.C.), was adopted as a result of these rulemaking efforts.<sup>6</sup>

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 (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 Gulf's docket was granted to the following parties: BellSouth Telecommunications, Inc., D/B/A AT&T Florida (AT&T);<sup>7</sup> Embarq Corporation (Embarq);<sup>8</sup>

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<sup>5</sup> 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.

<sup>6</sup> Order Nos. PSC-07-0043-FOF-EU and PSC-07-0043A-FOF-EU.

<sup>7</sup> Order No. PSC-07-0611-PCO-EI, issued July 30, 2007.

<sup>8</sup> Order No. PSC-07-0637, issued August 6, 2007.

Florida Cable Telecommunication Association, Inc. (FCTA);<sup>9</sup> City of Panama City Beach, Florida and the Panama City Beach Community Redevelopment Agency (Collectively, PCB);<sup>10</sup> and the Municipal Underground Utilities Consortium (MUUC).<sup>11</sup>

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 Attachments." 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.

On November 9, 2007, after the formal administrative hearing, Gulf filed an unopposed motion to reopen the record. In its motion, Gulf requested that we reopen the record for the limited purpose of entering its Amended Storm Hardening Plan that was filed in Docket No. 070299-EI on August 15, 2007.

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

#### Gulf's Motion to Reopen Record

On August 15, 2007, Gulf's Amended Storm Hardening Plan was filed in Docket No. 070299-EI and a copy of the Amended Plan was served on all the parties in Docket No. 070299-EI. However, Gulf did not enter its Amended Storm Hardening Plan into the record of the proceeding in Docket No. 070299-EI.

On November 9, 2007, Gulf filed an unopposed motion to reopen the record for the limited purpose of submitting its Amended Storm Hardening Plan. In support of its motion, Gulf states that no party will be prejudiced by the relief sought through this motion, the parties in Docket No. 070299-EI have relied on Gulf's Amended Storm Hardening Plan both in testimony and in post-hearing briefs, and the position of the parties and Gulf are based on the Amended Plan. Moreover, all the parties in Docket No. 070299-EI were contacted and do not oppose Gulf's motion.

We are generally hesitant to reopen the record of any proceeding. However, we may do so under limited circumstances. Generally, we may reopen the record when new evidentiary proceedings are warranted based on a change of circumstance not present at the time of the

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<sup>9</sup> Order No. PSC-07-0612-PCO-EI, issued July 30, 2007.

<sup>10</sup> Order No. PSC-07-0621-EI, issued July 31, 2007.

<sup>11</sup> Prehearing Conference held September 21, 2007.

proceeding, or a demonstration that a great public interest will be served.<sup>12</sup> Here, Gulf's Amended Plan serves a great public interest, thus warranting reopening the record to admit its Amended Plan.

Rule 25-6.0342, F.A.C., is intended to ensure the provisions of safe, adequate, and reliable electric transmission and distribution service for operational as well as emergency purposes. Also, Rule 25-6.0342, F.A.C., is intended to require the cost-effective strengthening of critical electric infrastructure to increase the ability of transmission and distribution facilities to withstand extreme weather conditions and reduce restoration cost and outage times to end-use customers associated with extreme weather conditions. Placing the Amended Plan in the record to satisfy the intended purposes of Rule 25-6.0342, F.A.C., furthers a great public interest.

Moreover, failure to grant the motion would result in undue delay in resolving whether Gulf's Amended Storm Hardening Plan meets the requirement of Rule 25-6.0342, F.A.C. Gulf would most likely file the same plan and all the parties in the docket would most likely present the same testimony at a later proceeding. Additionally, all the parties in Docket No. 070299-EI have been contacted and do not oppose Gulf's motion.

Upon consideration, we find that Gulf has shown that a great public interest would be served by admitting its Amended Plan into the record. Therefore, based on the discussion above, we reopen the record and admit Gulf's Amended Storm Hardening Plan filed on August 15, 2007 in Docket No. 070299-EI as Exhibit No. 54.

#### Summary of Gulf's Amended Storm Hardening Plan

Several of the issues for Gulf were stipulated. One of the issues involve the Process to Engage Third Party Attachers. As stated, the agreement is between the electric utilities and attachers. The agreement 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. The remaining issues for Gulf were subject to the formal administrative hearing.

Gulf's Amended Storm Hardening Plan adopts Grade B construction standards on all new distribution, construction, maintenance work and major distribution rebuilds. Gulf is using an extreme wind load (EWL) pilot project approach to determine the effectiveness of EWL on critical infrastructure facilities. All of Gulf's transmission construction is designed using extreme wind loading criteria. Gulf's Amended Plan emphasizes learning from experience by

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<sup>12</sup> Order No. PSC-07-0483-PCO-EU, issued June 8, 2007, in Docket No. 060635-EU, In re: Petition for Determination of Need for Electrical Power Plant in Taylor County by Florida Municipal Power Agency, JEA, Reedy Creek Improvement District, and City of Tallahassee.

gathering and evaluating storm forensic data to determine the benefits of particular approaches to hardening as they might be applied to new construction and major planned work, including expansion, rebuilding, and relocation of existing facilities. Undergrounding facilities is one of the potential damage mitigation techniques that Gulf indicates it will consider on a project specific basis. In addition, Gulf's Amended Plan contemplates the use of pilot projects to gather additional performance data for underground versus overhead construction. As part of the previously approved Ten Initiatives, Gulf is coordinating with local governments for such projects.

### Gulf's Amended Storm Hardening Plan

#### National Electric Safety Code Compliance

The parties stipulated that Gulf'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. AT&T did not affirmatively stipulate this issue but took no position. Based on the evidence in the record and the stipulation of the parties, we find that Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(3)(a), F.A.C.

#### Extreme Wind Loading Standards – New Construction

Gulf's Amended Storm Hardening Plan includes pole inspections and the Ten Initiatives that were approved in Order Nos. PSC-06-0781-PAA-EI and PSC-06-0947-PAA-EI. Gulf's Amended Plan also adopts Grade B construction standards on all new distribution, construction, maintenance work, and major distribution rebuilds. Gulf is using a EWL pilot project approach to determine the effectiveness of EWL on critical infrastructure facilities. All of Gulf's new transmission construction is designed using extreme wind loading criteria. Gulf's Amended Plan emphasizes learning from experience by gathering and evaluating storm forensic data to determine the benefits of particular approaches to hardening as they might be applied to new construction and major planned work, including expansion, rebuilding, and relocation of existing facilities. Undergrounding facilities is one of the potential damage mitigation techniques that Gulf indicates it will consider on a project specific basis.

Section 5.0 of Gulf's Amended Plan addresses the adoption of EWL standards specified by Figure 250-2(d) of the 2007 Edition of the NESC for distribution facilities. Gulf believes that, until it is able to develop data to determine the costs and benefits associated with applying EWL standards to distribution poles, it is prudent to move cautiously into the application of EWL standards. Therefore, Gulf has chosen to focus first on critical infrastructure facilities and major thoroughfares, by implementing pilot EWL projects, as discussed below. Gulf's pilot EWL projects will enable the company to collect additional data regarding cost and benefits of applying the EWL standard. Gulf's witness Battaglia stated that it was not cost effective to adopt EWL standards for all of the company's overhead distribution lines at this time. Witness Battaglia estimated the costs of doing so would be approximately \$437.2 million plus annual costs of \$2 million, while the benefits in possible avoided storm restoration cost were estimated at approximately \$1.1 million.



However, Gulf has changed its design standard for new distribution from Grade C construction to Grade B construction. Gulf's current standard, Grade C construction, results in an equivalent wind load design of 88 miles per hour. Gulf's current design addresses nearly 50% of the storms occurring in its service area. The new Grade B construction standard results in an equivalent wind load of 118 MPH. Adopting Grade B construction will strengthen Gulf's distribution system to address 80% of the storms in Gulf's service area.

Gulf analyzed 155 years of hurricanes impacting Northwest Florida. Based on Gulf's recent storm experience, according to witness Battaglia, the pure wind impacts of a hurricane are not the predominant cause of damage to the distribution system based on Gulf's recent storm experience. Gulf is adopting a pilot based approach to EWL, which we find reasonable at this time because Gulf needs to develop EWL cost/benefit data for its service area. We are further assured because Gulf will review its Amended Plan to address possible future application of EWL standards as storm forensic data is gathered.

PCB and MUUC's position that Gulf's consideration of EWL is inadequate is based upon their belief that Gulf failed to give adequate consideration to undergrounding as an effective storm hardening technique. PCB contends that Gulf ignored data that would show that placing distribution lines underground is a better way to harden its system than strengthening overhead distribution lines. However, PCB's brief noted that its own comparisons of historical reliability data between Panama City Beach and Pensacola were inconclusive. Though PCB witness Rant's testimony generally discussed undergrounding, neither witness Rant's testimony nor PCB's brief provided specific quantification of costs and benefits comparing undergrounding to EWL or Grade B construction on a system-wide basis.

Gulf's witness Battaglia testified that, in developing its Plan, Gulf considered transitioning to undergrounding as a system-wide storm hardening option. Witness Battaglia testified that "At this time, Gulf's experience with underground distribution does not support its use as a storm hardening activity." Gulf based its decision not to pursue the widespread use of undergrounding as a storm hardening option on both experience and costs. Witness Battaglia testified that Gulf considers both cost-effectiveness and whether an activity meets the goals of reduced customer outages and restoration times both in the aftermath of a storm occurrence and also on a day-to-day basis compared to overhead construction. Witness Battaglia testified that undergrounding construction has increased costs both with initial installation, normal operation and maintenance and during restoration on both a day-to-day basis and after a storm event. If Gulf were to replace the overhead system with underground in Pensacola, Ft. Walton Beach, and Panama City Beach, the estimated costs are \$780 million. This estimate is approximately 150% higher than the amount of Gulf's total system net distribution investment at the end of 2006. Also, witness Battaglia stated that underground facilities are susceptible to storm surges and to damage during clean-up after storms. In his rebuttal testimony, witness Battaglia testified that underground facilities also presented safety challenges to both utility workers and the public during restoration and the clean-up process after storm events. These limitations, along with the increased costs, contributed to Gulf's decision that use of undergrounding as a system-wide storm hardening technique was not presently the best option for the company.

We disagree with PCB regarding the adequacy of Gulf's consideration of undergrounding as a storm hardening technique. We find that PCB's witnesses Willoughby and Rant did not refute Gulf's assertions. Gulf's witness Battaglia pointed out that the assessments of witnesses Willoughby and Rant were not based on any first-hand knowledge of Gulf's system or its service territory or any experience with electric facilities in Florida. Furthermore, in coming to their conclusion that undergrounding would be an effective storm hardening activity for Gulf, neither Willoughby nor Rant discussed the differences in terrain, age of the system, storm intensity experienced, level of storm surge experienced, seawall protected areas versus those with no seawall, or proximity of beach waterline to facilities. There are many factors which make an "apples to apples" comparison difficult, if not impossible, including the age of facilities, vegetation, yearly storm patterns, geographic differences, traffic, and construction activities. Thus, we believe that the analytical data supporting undergrounding as a system-wide storm hardening technique is not available.

Moreover, although Gulf has not chosen to adopt undergrounding as a system-wide storm hardening technique at this time, we are assured that Gulf's Amended Plan establishes methodologies for collecting the needed metrics, including cost and engineering data to enable Gulf to better evaluate the effectiveness of undergrounding going forward. Gulf's Amended Plan discusses pilot underground projects as a potential storm hardening technique. Gulf is also a participant in a collaborative research project on storm hardening, including the cost and benefits of undergrounding, being coordinated through the Public Utilities Research Center. Consequently, we find that Gulf has a sound basis for its decision not to pursue undergrounding as a system-wide storm hardening option at this time, and instead, to continue its study and analysis of the effectiveness, as well as the cost and benefits of undergrounding as a storm hardening technique.

Upon consideration of the foregoing, we find that Gulf's Amended Plan addresses the extent to which the extreme wind loading standards specified by Figure 250-2(d) of the 2007 edition of the NESC are adopted for new distribution facility construction. Gulf will begin applying EWL standards to critical infrastructure facilities and major thoroughfares as pilot projects, and will use Grade B for all new distribution facility construction. Therefore, based upon the evidence in the record, we find that Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(3)(b)1, F.A.C.

#### Extreme Wind Loading Standards – Major Planned Work

As discussed above, Gulf's Amended Plan does not adopt EWL standards for all new and major distribution rebuilds as it has not been determined to be cost-effective. Rather, Gulf adopts Grade B construction standards for all new and major distribution rebuilds and will apply EWL standards to critical infrastructure facilities and major thoroughfares on a pilot basis.

As stated, we find that the Rule requires that a utility company's plan address the extent to which EWL standards are adopted for various types of facilities. It does not require a utility company to adopt a particular standard. As stated above, PCB's main argument is based on PCB's desire for Gulf to increase its use of undergrounding as a storm hardening technique.

Rather than providing reasons for rejecting Gulf's adoption of Grade B construction standards and EWL pilot projects, PCB's brief and the testimony of its witnesses focuses on the perceived superiority of undergrounding as a storm hardening technique. As stated in our analysis above, we find that Gulf's consideration of adopting EWL standards for major planned work on the distribution system, including expansion, rebuild, or relocation of existing facilities, is adequately addressed in its plan.

Upon consideration, Gulf's Plan addresses the extent to which the extreme wind loading standards specified by Figure 250-2(d) of the 2007 edition of the NESC are adopted for major planned work on the distribution system, including expansion, rebuild, or relocation of existing facilities, assigned on or after the effective date of this Rule for distribution facility construction. Gulf will begin applying EWL standards to critical infrastructure facilities and major thoroughfares as pilot projects, and will use Grade B for all new distribution facility construction. Therefore, we find that Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(3)(b)2, F.A.C.

#### Extreme Wind Loading – Critical Infrastructure

As discussed above, Gulf's Amended Plan will apply EWL standards to critical infrastructure and major thoroughfares on a pilot basis. Gulf's witness Battaglia testified that Gulf will apply the EWL standards to targeted facilities serving critical loads such as hospitals, major sewage treatment plants, fuel depots, and interstate road crossings. Gulf's Amended Plan describes its coordination with local governments, including County Emergency Management representatives. Witness Battaglia testified that input was solicited from County Emergency Operating Centers to help determine where Gulf should begin focusing its storm hardening efforts. The location of the targeted facilities is shown in the Appendix of Gulf's Amended Storm Hardening Plan.

As a pilot program, Gulf proposes to adopt EWL standards specified by Figure 250-2(d) of the 2007 edition of the NESC for main feeder distribution systems that serve critical facilities such as hospitals, sewer treatment plants, fuel depots, and feeders that cross major thoroughfares (specifically Interstates 10 and 110).

Though PCB acknowledges that Gulf's Amended Plan addresses Rule 25-6.0342(3)(b)3, F.A.C., PCB also contends that Gulf's Amended Plan does not include any discussion of political and geographic boundaries nor of operational considerations. Gulf provided a map showing the location of the facilities addressed in EWL pilot projects. The map also shows the community and specific areas where the pilot projects will be undertaken. We are of the opinion that though Gulf's Amended Plan provides information about political and geographic boundaries, perhaps more detail should have been provided, such as the specific hospitals, sewage plants, fuel depots and roads that will be impacted. However, the testimony reflects that additional maps with detailed facility and location data were made available to third-party attachers and other interested parties before and after Gulf filed its Amended Storm Hardening Plan.

Upon consideration, we find that Gulf's Plan addresses the extent to which the extreme wind loading standards specified by Figure 250-2(d) of the 2007 edition of the NESC are adopted for distribution facilities serving critical infrastructure facilities and along major thoroughfares taking into account political and geographical boundaries and other applicable operational considerations. EWL standards are adopted for targeted distribution facilities serving critical infrastructure facilities and along major thoroughfares. Therefore, we find that Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(3)(b)3.

#### Mitigation of Flooding and Storm Surge Damage

The parties stipulated that Gulf's Amended Storm Hardening Plan addresses the extent to which its distribution facilities are designed to mitigate damage to underground and supporting overhead transmission and distribution facilities due to flooding and storm surges. Gulf has developed overhead and underground distribution storm hardening specifications to mitigate damage due to flooding and storm surges. These specifications are shown in Appendices 5 and 6 of Gulf's Amended Storm Hardening Plan. In addition, Gulf is currently working on several distribution pilot projects in potential storm surge areas to test the effectiveness of mitigation techniques. Current pilot projects include the installation of below-grade gear, along with heavy lids and anchoring systems on flush-mounted switch enclosures. Gulf will continue to utilize stainless steel equipment in all coastal areas as has done for many years. AT&T and Embarq did not affirmatively stipulate this issue but took no position on the issue. Based on the evidence in the record and the stipulation of the parties, we find that Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(3)(c), F.A.C.

#### Facility Placement

The parties stipulated that Gulf's Amended Storm Hardening 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. Gulf has always recognized that accessibility to distribution facilities is essential to safe and efficient maintenance and storm restoration. Gulf continues to promote placement of facilities adjacent to public roads; to utilize easements, public streets, roads and highways; obtain easements for underground facilities; and to use right-of-ways for conversions of overhead to underground. AT&T and Embarq did not affirmatively stipulate this issue but took no position. Based on the evidence in the record and the stipulation of the parties, we find that Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(3)(d), F.A.C.

#### Deployment Strategies – Facilities Affected, Including Specifications and Standards

The parties stipulated that Gulf's Amended Storm Hardening Plan provides a detailed description of its deployment strategy including a description of the facilities affected, including technical design specifications, construction standards, and construction methodologies employed. Section 9.1 of the Plan describes the 3 year deployment strategy for the proposed EWL critical infrastructure pilot projects. Appendices 5 and 6 of the Plan contain the design and construction specifications for the overhead and underground distribution facilities. Based on

the evidence in the record and the stipulation of the parties, we find that Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(4)(a), F.A.C.

Deployment Strategies – Areas of Infrastructure Improvements

Gulf's Amended Storm Hardening Plan provides a detailed description of the communities and areas within its service area where electric infrastructure improvements will be made, including facilities identified by the utility as critical infrastructure and along major thoroughfares. As discussed above, we find Gulf provided a detailed descriptions and maps of the electric infrastructure hardening projects within its Amended Plan. We believe that the summary information provided in Exhibit 54 is sufficient for local governmental officials to determine whether additional discussion with Gulf is warranted. Also, Gulf did make available additional maps with detailed facility and location data to third-party attachers and other interested parties before and after Gulf filed its Plan. Upon consideration of the evidence in the record, including testimony reflecting Gulf's responsiveness to requests for additional information, we find that Gulf's Amended Plan provides a description of the communities and areas within Gulf's service area where electric infrastructure improvements, including facilities identified by the utility as critical infrastructure and along major thoroughfares are to be made. Therefore, we find Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(4)(b), F.A.C.

Deployment Strategy – Joint Use Facilities

Gulf testified that it has worked with all third-party attachers to provide sufficient details of proposed electric infrastructure improvements and to determine potential impacts to joint-use facilities. Detailed location maps of potentially-impacted joint use facilities have been provided to all interested third-party attachers. The locations identified on the maps indicate a third-party attacher has one or more attachments on one or more poles shown on each map they received. Gulf stated that it continues to provide additional information as it becomes available.

PCB and MUUC are the only two parties contending that Gulf's Amended Storm Hardening Plan has not met this obligation. However, no evidence for this position is provided by either party. All other parties either agreed that Gulf's Amended Storm Hardening Plan met its obligation as it relates to this issue, or have taken no position. Further, all parties have stipulated to the Process To Engage Third-Party Attachers as a means to receive ongoing detailed information and input their concerns regarding the utility's Hardening Plans. The Process To Engage Third-Party Attachers requires the electric utility to annually provide detailed information for upcoming storm hardening projects. Thus, exchange of information allows third-party attachers to conduct a more current cost/benefit analysis. If concern regarding cost/benefits exists, third-party attachers can provide comments to the electric utility, which will be incorporated in comments within its annual plan status report to us. 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. We find that these two mechanisms provide attachers sufficient opportunity to resolve future issues with utility hardening plans.

Upon consideration, Gulf has provided attachers with detailed descriptions and maps of electric infrastructure hardening projects within its Amended Plan. Also, sufficient information exchange and dispute resolution mechanisms are provided by the Process To Engage Third-Party Attachers. Therefore, we find that Gulf's Amended Storm Hardening Plan meets the requirements of Rule 25-6.0342(4)(c), F.A.C.

#### Deployment Strategy – Utility Costs/Benefits Estimates

An estimate of the cost and benefits of Gulf's Amended Plan is included in Appendix 7 of the Amended Plan. While it is not possible to know the frequency and category of storms that could impact Gulf's service territory over the next three years, the company has estimated that it could possibly avoid approximately \$1.1 million in storm restoration cost due to the implementation of storm hardening initiatives. Gulf's methodology for determining potential benefits is based on the company's past experience with pole losses due to hurricanes. Gulf has concluded that wind-blown debris has been the predominate cause of damage to its facilities during extreme weather events. Gulf estimates its total storm hardening costs for the 2007 to 2009 time period at approximately \$20 million per year. On a per customer basis, the cost for 2007 is approximately \$46 per customer.

None of the Plans filed by utilities contain data at a level sufficient for them to identify the exact cause of damage to a distribution facility by a hurricane or identify specific costs for the damaged distribution facilities. In our view, it is not troublesome that Gulf's Amended Plan only provides non-binding estimates of storm hardening costs and benefits. Gulf's Amended Plan, like the plans of other utilities, is capable of incorporating input from us, as well as attachers, local governments and other interested parties as more information is gathered on the costs and benefits of hardening. Gulf has acknowledged this as well. As more experience is gained, it is expected that revisions to plans will take place. Consequently, cost and benefits will also change.

PCB incorrectly asserts Gulf's Amended Plan inadequately assesses the cost-effectiveness of undergrounding as a storm hardening technique. As noted above, if Gulf were to replace the overhead system with underground in Pensacola, Ft. Walton Beach, and Panama City Beach, the estimated costs is \$780 million. This estimate is approximately 150% higher than the amount of Gulf's total system net distribution investment at the end of 2006. Gulf's analysis demonstrates that system-wide undergrounding as a storm hardening technique is not cost-effective. Nevertheless, Gulf's Amended Plan proposes pilot projects to continue assessing underground construction as a potential storm hardening technique. Gulf is also a participant in a collaborative research project on storm hardening, including the cost and benefits of undergrounding, which is being coordinated through the Public Utilities Research Center.

The record reflects that to be successful, the process for developing, implementing, and reviewing storm hardening plans must remain fluid and dynamic. Therefore, we do not share PCB's opinion that Gulf's cost-effectiveness analysis is inadequate. Furthermore, the adequacy of Gulf's consideration of undergrounding is evident by Gulf's estimated cost to underground three communities at 150% of Gulf's current plant investments. However, we note that Gulf

believes that undergrounding of distribution facilities should be further investigated as a storm mitigation technique on a pilot basis. We find this is a reasonable approach and would urge Gulf and PCB to cooperate towards this end.

Upon consideration, Gulf's Amended Plan provides an estimate of the costs and benefits of making electric infrastructure improvements, including the effect on reducing storm restoration costs and customer outages. Therefore, we find that Gulf's Amended Plan meets the requirements of Rule 25-6.0342(4)(d), F.A.C.

#### Deployment Strategies – Attachers Costs/Benefits Estimates

Sections 11.0 and 12.0 of Gulf's Amended Plan address storm-hardening as it relates to third-party attachers. Pages 29-34 describe Gulf's efforts to seek input from third-party attachers in the development of its Amended Plan. Approximately 25 attachers were notified by Gulf and ten participated in the development of the Plan. Gulf requested that each participant provide an estimate of costs and benefits expected as a result of the proposed Plan. While Gulf received several letters and timely responses regarding the Plan, just three attachers provided cost/benefit estimates. Gulf provides those three responses from AT&T, FCTA, and Embarq within its Plan.

Through the stipulation of the Process To Engage Third-Party Attachers, AT&T, FCTA, and Embarq appear to have resolved their concerns about further detailed information necessary to provide an accurate cost/benefit analysis of the impacts on their company. The Process requires the electric utility to annually provide detailed information for upcoming storm hardening projects. This exchange of information allows third-party attachers to conduct a more current cost/benefit analysis. If concern regarding cost/benefits exists, third-party attachers can provide comments to the electric utility, which will incorporate comments in the annual plan status report to the Commission. 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.

PCB and MUUC maintain that Gulf did not conduct a cost/benefit analysis to the third-party attachers. Instead, they contend that Gulf merely accepted the attachers' estimates and included them in its Plan. However, no other party voiced its concern, and the Process To Engage Third-Party Attachers is available to resolve any concern in regard to this issue.

PCB stated in its prehearing statement regarding this issue that, "in fairness to Gulf, it is probably not Gulf's job to estimate third-party attacher benefits." We agree Gulf has included the third-party attachers' own cost/benefit estimates, and find Gulf's approach to be consistent with Rule 25-6.0342(4)(e), F.A.C., which requires, "[a]n 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 IOUs seeking input from third-party attachers, instructing that "each utility shall seek input from and attempt in good faith to accommodate concerns raised [by the attachers]."

Upon consideration, Gulf has provided an estimate of costs and benefits for storm hardening improvements and reduced storm restoration outages for third-party attachers. Also, sufficient information exchange and dispute resolution mechanisms are provided by the Process To Engage Third-Party Attachers. Therefore, based on the evidence in the record, we find that Gulf's Amended Plan meets the requirements of Rule 25-6.0342(4)(e), F.A.C.

#### Attachment Standards and Procedures

The parties stipulated that Gulf's Plan includes written Attachment Standards and Procedures addressing safety, reliability, pole loading capacity, and engineering standards and procedures for attachments by others to the utility's electric transmission and distribution poles that meet or exceed the edition of the National Electrical Safety Code (ANSI C-2) that is applicable pursuant to Rule 25-6.034, F.A.C. Gulf clarifies that it is not seeking our approval of its attachment standards and procedures for third party attachments beyond a finding that Gulf has attachment standards and procedures for third party attachments that meet or exceed the NESC. Based on the stipulation of the parties and the evidence in the record, we find that Gulf's Amended Plan meets the requirements of Rule 25-6.0342(5), F.A.C.

#### Plan Approval

Gulf's Amended Plan presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. Additionally, the "Process to Engage Third-Party Attachers," which all parties 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 Gulf's storm hardening plan, including the Attachment Standards and Procedures, to 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.

Gulf's Amended 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, Gulf will record the number of overhead and underground customers on its system at the end of each year. This data will allow the company to calculate the SAIDI<sup>13</sup> and SAIFI<sup>14</sup> indices as experienced by overhead and underground customers. Appendices 5 and 6 of Gulf's Amended Plan include overhead and underground storm hardening specifications which the company developed to minimize damage to underground facilities and supporting overhead transmission and distribution facilities due to flooding and storm surges. These specifications will continue to evolve as Gulf continues to seek out best practices and learns from the review of gathered forensic data. We expect Gulf 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. Similarly, we encourage PCB to share with Gulf any of

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<sup>13</sup> System Average Interruption Duration Index (SAIDI) is a composite indicator of outage frequency and duration and is calculated by dividing the customer minutes of interruptions by the number of customers served on a system.

<sup>14</sup> System Average Interruption Frequency Index (SAIFI) is an indicator of average service interruption frequency experienced by customers on a system.



the relevant information its expert witnesses have developed that might be applicable to Gulf's service area.

Upon consideration, we find that Gulf's Amended Plan meets the desired objectives of enhancing reliability and reducing restoration costs and outage times. We note that the cost/benefit estimates provided in Gulf's Amended Storm Hardening Plans are non-binding and subject to change. In keeping with past practices, we expect Gulf to prudently manage their resources and assets for the benefit of the general body of ratepayers. The actual expenditures resulting from Gulf's Amended Storm Hardening Plan will be reviewed when cost recovery is requested. Accordingly, we approve Gulf's Amended Plan.

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, Gulf 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 Gulf Power Company's Amended 2007 Electric Infrastructure Storm Hardening Plan is consistent with Rule 25-06.0342, Florida Administrative Code, and is therefore approved. It is further

ORDERED that in accordance with Rule 25-6.0342, F.A.C., Gulf'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. 070299-EI shall be closed.

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

  
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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.