State of Florida

Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: June 9, 2005

TO: Director, Division of the Commission Clerk & Administrative Services (Bayó)

FROM: Division of Economic Regulation (Breman, Lee)
Office of the General Counsel (C. Keating)

RE: Docket No. 041375-EI – Request to exclude April 11-12, 2004 and June 13, 24, and 26, 2004 outage events from annual distribution service reliability report by Tampa Electric Company.

AGENDA: 06/21/05 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Bradley

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

FILE NAME AND LOCATION: S:\PSC\ECR\WP\041375.RCM.DOC

Case Background

Rule 25-6.0455, Florida Administrative Code, requires each investor-owned electric utility to file an Annual Distribution Service Reliability Report containing data that this Commission uses to assess changes in distribution reliability. Under subsection (2) of the rule, a utility may exclude specified outage events such as a storm named by the National Hurricane Center, a tornado recorded by the National Weather Service, ice on lines, and an extreme weather event causing activation of the county emergency operations center. In addition, under subsection (3), a utility may petition this Commission to exclude an outage event not specifically enumerated in subsection (2). However, the utility must "demonstrate that the outage event was

not within the utility's control, and that the utility could not reasonably have prevented the outage." Rule 25-6.0455(3), Florida Administrative Code.

On December 7, 2004, Tampa Electric Company ("TECO") filed a request for exclusion of outage events associated with weather systems on April 11-12, 2004, and on June 13, 24, and 26, 2004, pursuant to Rule 25-6.0455(3), Florida Administrative Code. In conjunction with its request for exclusion, TECO filed a petition seeking a variance or waiver from that portion of Rule 25-6.0455(3), which provides that the request must be filed within 30 days of the outage event for which an exclusion is requested.

TECO's rule waiver petition was granted by the Commission at the February 1, 2005, Agenda Conference. At that Agenda Conference, TECO orally withdrew its request to exclude outage events on June 13, 24, and 26, 2004. TECO did not withdraw its request for an exclusion of outage events on April 11-12, 2004, because (1) TECO believes the same weather system impacted TECO, Florida Power & Light Company ("FPL") and Progress Energy Florida, Inc., ("PEFI"); and (2) the Commission granted FPL's and PEFI's exclusion requests.[1,2]

This recommendation addresses TECO's request to exclude the April 2004 outage events. The Commission has jurisdiction over this matter pursuant to Chapter 366, Florida Statutes, including Section 366.04, 366.041, 366.05, Florida Statutes.

[1] Order No. PSC-04-1102-PAA-EI, issued November 8, 2004, in Docket No. 040449-EI, In Re: Request for Exclusion under Rule 25-6.0455(3), F.A.C., for outages on April 13, 2004 resulting from weather system known as a "Mesoscale convective system," by Florida Power & Light Company.
[2] Order No. PSC-0401268-PAA-EI, issued December 22, 2004, in Docket No. 040792-EI, In Re: Request to exclude 4/11-12/04 outage event from annual distribution service reliability report by Progress Energy Florida, Inc.

Discussion of Issues

Issue 1: Should the Commission approve TECO's petition to exclude from its 2004 Annual Distribution Service Reliability Report 174 outage events that occurred due to a weather event on April 11-12, 2004?

Recommendation: No. TECO has not demonstrated that the outages on April 11-12, 2004, were not within its control and that it could not reasonably have prevented the outages because: (1) sustained wind speeds in TECO's service area did not exceed industry construction standards; (2) TECO maintains control over its tree-to-power line clearance practices and can adjust those practices if it believes wind related outages are excessive; (3) TECO maintains control over its lightning protection practices and can adjust those practices if it believes lightning related outages are excessive; and (4) TECO has not demonstrated that the high wind speeds that occurred in FPL's and PEFI's respective service areas also occurred in TECO's service area on April 11-12, 2004. However, If the Commission approves the petition, TECO should show the effects of including and excluding the wind and lightning caused outage events in a revised 2004 Annual Distribution Service Reliability Report for comparability purposes. (Breman, Lee)

Staff Analysis:

Summary of TECO's Petition

TECO's petition, at paragraph 6, asserts that the weather event of April 11 and 12 that impacted TECO was the same weather phenomenon described in detail in the requests for exclusions filed by FPL and PEFI. In Exhibit A to its petition, TECO provides lightning strike data from 6:00 p.m. on April 11, 2004, through 9:00 a.m. on April 12, 2004. TECO states that very heavy rains, strong wind, and extensive lightning affected its service area resulting in 174 outage events affecting a total of 18,829 customers. The System Average Interruption Duration Index ("SAIDI") is a measurement of how long the average customer was without electric service. TECO's five year daily average SAIDI for April is 0.09 minutes. The 174 outage events result in a SAIDI of 3.05 minutes for the 24-hour period on April 11-12, 2004. TECO's petition did not include any wind data related to the April 2004 weather event.

Subsequent to the February 1, 2005, Agenda Conference, staff had several informal discussions with TECO staff focusing on apparent differences between TECO's petition, which was based on how much lightning occurred, and the petitions of PEFI and FPL, which were based on a non-thunderstorm high wind event. Staff also pointed out that the National Weather Service ("NWS") does not use lightning as a criteria for defining severe weather. A severe thunderstorm is any storm that produces a tornado, or damaging winds of at least 50 knots (58 mph), or hail three quarters of an inch in diameter or greater.[3] Staff also noted that there is no standard for utility construction regarding lightning while there is a construction standard regarding wind speed.

[3] http://www.spc.noaa.gov/misc/about.html

On April 1, 2005, TECO filed supplemental information provided by a consultant, Mr. Robert Mullenax, a meteorologist with ImpactWeather, Inc. The supplemental filing is Attachment 1 to this recommendation. In the letter, Mr. Mullenax discusses the various characteristics of the wind events of April 11-12, 2004. Mr. Mullenax states the highest wind speed recorded within TECO's service area was 30 mph and that it was likely there were pockets of much stronger winds. No specific wind speed greater than 30 mph is noted within Mr. Mullenax's letter.

Construction Standards

TECO's construction standard for wind is based on compliance with the National Electric Safety Code, Section 24, "Grades of Construction." The construction standard is equivalent to designing for a sustained 60 mph wind. Sustained winds exceeding TECO's construction standard of 60 mph could result in outages caused by winds blowing over poles and stripping poles of the attached hardware.

Attachment 2 to this recommendation is a copy of TECO's response to the first question of a staff informal data request in Docket No. 050058-EI, In Re: Request of Tampa Electric Company to Exclude Outage Event on December 26, 2004 from its Annual Distribution Service Reliability Report. In its response, TECO lists information for all wind events in excess of 40 mph that it could document within its service area since January 1, 2000. TECO's response does not show that a wind event exceeding 40 mph occurred on April 11-12, 2004. Further, all events listed in Attachment 2 have been included in TECO's Annual Distribution Service Reliability Reports.

On April 11-12, 2004, the peak wind speed of 30 mph within TECO's service area did not exceed TECO's construction standard of 60 mph. TECO provided no evidence of pole and fixture failure due to sustained high wind speeds. Rather, the outage events on April 11-12, 2004, appear to be related to trees contacting power lines and other thunderstorm causes such as lightning.

Tree-to-Power Line Clearances

Utilities may implement changes to their vegetation maintenance programs as they deem appropriate. All other things being equal, the same level of wind speed can cause more outages if a utility elects to allow less clearance between trees and power lines. The converse is also true. Thus, the utilities exercise control over wind/tree related outages.

TECO's tree-to-power line clearance practice is currently based on various performance factors such as the number of outages and tree growth rates. TECO's practice can be characterized as performance-based because TECO does not have a specific trim cycle. The amount of tree-to-power line clearence at any given time and place is a result of how aggressive TECO is in maintaining the maximum achievable tree-to-power line clearance. Thus, tree-to-power line clearances and the resulting number of outages are matters TECO already incorporates into its decisions. If the number of outages is excessive, based on TECO's internal review, then TECO may elect to implement a more aggressive line clearance practice. On the

other hand, TECO may elect to keep its practice the same or relax its practice if the number of resulting outages is not excessive.

TECO's Annual Distribution Service Reliability Reports include the number of outages caused by all types of vegetation without separately listing the tree caused outages. TECO's 2002, 2003, and 2004 reports indicate that the number of vegetation-caused outages were 1,668, 2,003 and 1,880 respectively. Vegetation-caused outages as a percentage of total outages for the same period were 14%, 16%, and 17%, respectively. This increasing trend does not appear to support TECO's claim that wind/tree related outages are beyond its control because of the increase in vegetation caused outages. The 2004 data include all vegetation-caused outages that TECO seeks to exclude.

Staff believes that TECO's implementation of vegetation management practices demonstrates that TECO exercises control over the number of outages resulting from winds that typically occur within its service area. If TECO believes the outages of April 11-12, 2004, were excessive in light of the wind speeds recorded for that day, then TECO can revisit its vegetation management practices.

Lightning Protection

As previously mentioned, there is no industry standard for excessive lightning. In absence of an industry standard, each utility can change their respective lightning protection programs as they deem appropriate. All things being equal, the same level of lightning can cause more outages if a utility elects to implement less protection. The converse is also true. Thus, utilities exercise control over lightning caused outage events.

TECO's Annual Distribution Service Reliability Reports include the number of outages caused by lightning. TECO's 2002, 2003, and 2004 reports indicate the number of lightning-caused outages and the number of such outages as a percentage of total outages were 2,148 (18%), 2,481 (20%), and 2,283 (21%), respectively. This increasing trend does not appear to support TECO's claim that lightning-related outages are beyond its control because of the increase in lighting caused outages. The 2004 data include all lighting caused outages that TECO seeks to exclude.

Staff believes TECO's implementation of lightning protection demonstrates that TECO exercises control over the number of outages resulting from lightning that typically occur within its service area. If TECO believes the outages of April 11-12, 2004, were excessive in light of the lightning strikes recorded for that day, then TECO can revisit its lightning protection practices.

Conclusion

Staff believes TECO has not demonstrated that the outage events on April 11-12, 2004, were not within its control and that it could not have reasonably prevented the outages because: (1) sustained wind speeds in TECO's service area did not exceed industry construction standards; (2) TECO maintains control over its tree-to-power line clearance practices and can adjust those practices if it believes wind related outages are excessive; (3) TECO maintains

control over its lightning protection practices and can adjust those practices if it believes lightning related outages are excessive; and (4) TECO has not demonstrated that the high wind speeds that occurred in FPL's and PEFI's respective service areas also occurred in TECO's service area on April 11-12, 2004. Therefore, TECO has not made the showing required by Rule 25-6.0455(3), and the petition should be denied.

If the Commission approves the petition, TECO should show the effects of including and excluding the wind and lightning caused outage events in a revised 2004 Annual Distribution Service Reliability Report for comparability purposes.

Issue 2: Should this docket be closed?

Recommendation: Yes, this docket should be closed upon issuance of a Consummating Order unless a person whose substantial interests are affected by the Commission's decision files a protest within 21 days of the issuance of the proposed agency action. (C. Keating)

Staff Analysis: If no timely protest to the proposed agency action is filed within 21 days, this docket should be closed upon issuance of a Consummating Order.

ImpactWeather

Mr. Scott H. Smith
Manager, System Reliability
Tampa Electric, Co.

Greetings Mr. Smith,

This document is the result of a study of the weather events of April 11-12, 2004 in the Tampa Electric service area. This document will explain what a wake low is and how it relates to Mesoscale Convective Systems (abbreviated MCS) and squall lines, and will investigate that possibility that a wake low or wake lows contributed to damage during the aforementioned period over the service area.

A wake low is a small-scale (mesolow) area of low pressure, or a collection of several small mesolows, that occurs to the rear of a squall line, or MCS, along the edge of the trailing stratiform rain area. Clouds with little vertical development, and hence little or no thunderstorm activity characterize a stratiform rain area. The exact cause of wake lows is still subject to debate. They are quite complicated in their structure but in layman's terms one could think of them as being akin to an ocean wave. The initial rush of strong winds and cooler air ahead of a squall line or MCS is caused by the cool, dense air formed as precipitation occurs within the system. This pool of cooler, denser air forms what is called a mesohigh. Since the atmosphere can be treated as a fluid, just like water, the mesohigh can be thought of as the peak of a wave in the atmosphere, and the trailing mesolow as the trough. Strong straight-line winds can occur along the edge of each system, in part due to the locally increased surface pressure gradient. Strong winds are much more common with mesohighs because the cool dense air easily reaches the surface and spreads much like a moving fluid. However, the thermal structure of the lower atmosphere behind a squall line or MCS many times contains a temperature inversion (the temperature increases with height) which prevents much of the stronger winds associated with a mesolow from reaching the surface. The inversion may only be broken in a few areas, resulting in more sporadic areas of stronger winds.

Surface and radar observations from the evening of April 11 to the morning of April 12 indicated the likelihood of two wake lows affecting the Tampa Electric service area. The first wake low event occurred behind a squall line that was moving west to east across the Florida Peninsula during the evening hours. It appears that the wake low developed between Tampa and Brooksville, Florida around 7:00pm EDT April 11 and then tracked generally to the east-northeast affecting the service area, reaching the Orlando area by 10:00pm EDT. Surface observations at all stations between Tampa and Orlando indicate a period of rapidly falling pressures as the mesolow developed along with a rapid wind shift from the northwest to the southeast. The strongest winds reported at any of the

NWS observing stations during the wake low event over the service area was 30 mph at Winter, Florida at 9:53 pm EDT. However, there are long distances between observing stations over the Florida panhandle and it is likely that stronger winds were observed over other areas, due to the strong surface pressure gradient induced by the wake low. Another small, but significant indicator of a mesolow was a small, but noticeable temperature increase over all observing stations in the region with the onset of rapidly falling pressures. This is another classic indication of mesolow development.

A second wake low affected the region during the morning hours of April 12 in the wake of a large MCS moving through the Florida Panhandle. In general this wake low event did not appear to be as significant as the earlier low, but large pressure falls and a sharp shift to easterly winds with the pressure drop all point to a wake low behind the exiting MCS. The wake low affected western areas of the service region by 6:45 to 7:00am EDT April 12, moving east to near Orlando by 9:00am EDT. The stronger peak winds observed at NWS surface observing stations were outside of the Tampa Electric service area, with Orlando peaking out at around 30 mph at 8:45am EDT. However, as with the previous system, the tight surface pressure gradient over the entire service area likely meant there were pockets of much stronger winds over the service area.

A similar wake low event occurred over South Florida on April 13, 2004. Meteorologists at the National Weather Service Forecast Office in Miami wrote a study that was presented to the American Meteorological Society. I have read this document and confirm that atmospheric conditions described in this document were very similar to what was occurring over the Tampa Electric service area on April 11-12, 2004. I will also add that I have personally observed wake low events while doing field forecasting for NASA's National Scientific Balloon Facility from 1991 to 2000, prior to joining ImpactWeather, Inc. Out of necessity I developed considerable expertise in forecasting surface and low-level winds while at NSBF. I personally experienced wake low events while in Palestine, Texas, Ottumwa, Iowa, and Fort Sumner, New Mexico. The surface observations during the Tampa area events of April 11-12, 2004 corresponded well to what I observed in those events in Iowa, New Mexico, and Texas. All of this evidence taken together leads to the conclusion that wake lows were likely responsible for wind gusts seen over the Tampa Electric service area on April 11-12, 2004.

Regards,

Robert Mullenax
Meteorologist
ImpactWeather, Inc.

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1. Please provide the following for each wind event that had wind gusts exceeding 40 miles per hour and was not a named storm or a tornado for the five-year period, January 1, 2000 through December 31, 2004.

a. The customer minutes of interruption ("CMI").

b. The number of customer interruptions ("CI").

c. The number of customers served ("C").

d. The number of outage events.

e. The number of crew jobs issued or assigned.

f. The number of crew's jobs typically issued for the average day for the month of December.

g. The restoration costs and time required to restore all affected customers for outages during the average day in December.

h. The average service restoration costs for the average day in December.

A. The information on pages 2 of 7 through 5 of 7 was obtained from the National Climatic Data Center, United States Department of Commerce, NOAA Satellite and Information Service and supports responses to parts a through e of this question.

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Wind events at or above 40 MPH in Hillsborough County, January 1, 2000 to December 31, 2004.

35 THUNDERSTORM & HIGH WIND events were reported in Hillsborough County, Florida between 01/01/2000 and 12/31/2004.

Florida

Location or County	Date	Time	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
1 Plant City	08/09/2000	02:25 PM	Tstm Wind	57 kts.	0	0	0	0
2 Sun City	08/26/2000	06:25 PM	Tstm Wind	52 kts.	0	0	20K	0
3 FLZ050>051	11/25/2000	08:30 AM	High Wind	45 kts.	0	0	50K	0
4 Thonotosassa	06/15/2001	02:12 PM	Tstm Wind	60 kts.	0	0	150K	0
5 Brandon	06/19/2001	03:57 PM	Tstm Wind	52 kts.	0	0	25K	0
6 Valrico	06/29/2002	05:45 PM	Tstm Wind	50 kts.	0	0	5K	0
7 Plant City	07/25/2002	04:30 PM	Tstm Wind	50 kts.	0	0	0	0
8 Sun City	07/29/2002	03:55 PM	Tstm Wind	50 kts.	0	0	0	0
9 Riverview	03/17/2003	12:30 AM	Tstm Wind	52 kts.	0	0	10K	5K
10 Ruskin	04/25/2003	10:15 PM	Tstm Wind	55 kts.	0	0	0	0
11 Lutz	05/19/2003	02:48 PM	Tstm Wind	50 kts.	0	0	0	0
12 Wimauma	06/03/2003	03:12 PM	Tstm Wind	50 kts.	0	0	10K	0
13 Carrollwood	06/13/2003	05:35 PM	Tstm Wind	50 kts.	0	0	0	5K
14 Temple Terrace	06/16/2003	04:00 PM	Tstm Wind	55 kts.	0	0	0	0
15 Citrus Park	06/16/2003	04:10 PM	Tstm Wind	50 kts.	0	0	0	0
16 Thonotosassa	06/16/2003	04:10 PM	Tstm Wind	50 kts.	0	2	0	0
17 Temple Terrace	06/16/2003	04:20 PM	Tstm Wind	50 kts.	0	0	15K	0
18 Citrus Park	06/16/2003	04:30 PM	Tstm Wind	50 kts.	0	0	0	0
19 Carrollwood	06/16/2003	05:25 PM	Tstm Wind	50 kts.	0	0	0	0
20 Tampa Intl Arpt	07/04/2003	04:42 PM	Tstm Wind	50 kts.	0	2	30K	0
21 Plant City	07/22/2003	12:33 PM	Tstm Wind	55 kts.	0	0	0	
22 Valrico	07/25/2003	02:49 PM	Tstm Wind	50 kts.	0	0	0	0

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FLORIDA								
Location or County	Date	Time	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
23 Brandon	07/30/2003	03:40 PM	Tstm Wind	50 kts.	0	0	0	0
24 Tampa	08/16/2003	06:05 PM	Tstm Wind	50 kts.	0	0	10K	0
25 (tpa)tampa Intl Arpt	02/24/2004	01:00 PM	Tstm Wind	52 kts.	0	0	40K	0
26 Brandon	02/24/2004	01:10 PM	Tstm Wind	39 kts.	0	0	15K	5K
27 FLZ050>051 - 055 - 062	04/12/2004	10:45 AM	Strong Wind	N/A	0	5	55K	
28 Tampa	06/07/2004	03:00 PM	Tstm Wind	50 kts.	0	0	0	0
29 Tampa	06/13/2004	04:40 PM	Tstm Wind	50 kts.	0	0	0	0
30 Temple Terrace	06/24/2004	06:34 PM	Tstm Wind	50 kts.	0	0	0	0
31 Lutz	06/24/2004	06:57 PM	Tstm Wind	50 kts.	0	0	0	
32 Temple Terrace	06/25/2004	06:30 PM	Tstm Wind	50 kts.	0	0	0	0
33 Seffner	06/27/2004	04:15 PM	Tstm Wind	50 kts.	0	0	0	0
34 Temple Terrace	06/28/2004	06:50 PM	Tstm Wind	60 kts.	0	0	0	0
35 FLZ050>051 – 055	12/26/2004	04:00 AM	High Wind	65 kts.	0	0	80K	
TOTALS:					0	9	515K	15K

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Wind events at or above 40 MPH in Pasco County, January 1, 2000 to December 31, 2004.

10 THUNDERSTORM & HIGH WIND events were reported in Pasco County, Florida between 01/01/2000 and 12/31/2004

Florida

Location or County	Date	Time	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
1 Elfers	06/18/2000	06:40 PM	Tstm Wind	52 kts.	0	0	10K	0
2 Dade City	05/31/2002	04:43 PM	Tstm Wind	50 kts.	0	0	10K	0
3 New Port Richey	07/29/2002	05:40 PM	Tstm Wind	60 kts.	0	0	0	0
4 Land O Lakes	03/27/2003	04:40 PM	Tstm Wind	50 kts.	0	0	0	0
5 St Leo	05/14/2003	04:15 PM	Tstm Wind	50 kts.	0	0	3K	0
6 New Port Richey	06/23/2003	03:25 PM	Tstm Wind	50 kts.	0	0	0	0
7 Zephyrhills	07/08/2003	06:15 PM	Tstm Wind	58 kts.	0	0	40K	0
8 FLZ048>049	03/10/2004	12:45 AM	Strong Wind	N/A	0	0	30K	0
9 Zephyrhills	06/08/2004	05:03 PM	Tstm Wind	50 kts.	0	0	50K	0
10 FLZ048>049 - 052 - 060 - 062 - 065	12/26/2004	04:00 AM	Strong Wind	N/A	0	0	25K	0
TOTALS:					0	0	168K	0

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Wind events at or above 40 MPH in Polk County, January 1, 2000 to December 31, 2004.

20 THUNDERSTORM & HIGH WIND event(s) were reported in Polk County, Florida between 01/01/2000 and 12/31/2004.

Florida

Location or County	Date	Time	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
1 Lakeland Muni Arpt	04/03/2002	12:15 PM	Tstm Wind	50 kts.	0	1	12K	0
2 Lakeland	05/31/2002	05:30 PM	Tstm Wind	52 kts.	0	0	30K	0
3 Lake Wales	07/13/2002	09:33 AM	Tstm Wind	60 kts.	0	0	0	0
4 Ft Meade	07/29/2002	04:25 PM	Tstm Wind	50 kts.	0	0	0	0
5 Haines City	03/09/2003	06:30 PM	Tstm Wind	52 kts.	0	0	15K	0
6 Polk City	07/16/2003	04:15 PM	Tstm Wind	50 kts.	0	0	5K	0
7 Lakeland Muni A	07/22/2003	12:36 PM	Tstm Wind	55 kts.	0	0	0	0
8 Polk City	07/23/2003	01:37 PM	Tstm Wind	50 kts.	0	0	3K	0
9 Haines City	07/24/2003	06:00 PM	Tstm Wind	50 kts.	0	0	20K	0
10 Bartow	10/07/2003	07:00 PM	Tstm Wind	60 kts.	0	0	0	0
11 Ft Meade	02/24/2004	02:00 PM	Tstm Wind	40 kts.	0	0	10K	0
12 Lakeland	06/03/2004	04:05 PM	Tstm Wind	50 kts.	0	0	0	0
13 Lakeland Muni A	06/04/2004	02:00 PM	Tstm Wind	50 kts.	0	0	0	0
14 Lakeland	06/10/2004	04:26 PM	Tstm Wind	50 kts.	0	0	0	0
15 Bartow	07/02/2004	03:30 PM	Tstm Wind	50 kts.	0	0	5K	0
16 Winter Haven	07/11/2004	04:00 PM	Tstm Wind	60 kts.	0	0	0	0
17 FLZ052 - 056>057	08/13/2004	04:00 PM	High Wind	94 kts.	1	12	929.0M	175.0M
18 FLZ043 - 052 - 056>057	09/05/2004	08:00 AM	High Wind	60 kts.	0	0	127.2M	0
19 FLZ052 - 057	09/25/2004	06:00 PM	High Wind	61 kts.	0	0	702.0M	0
20 FLZ048>049 - 052 - 060 - 062 - 065	12/26/2004	04:00 AM	Strong Wind	N/A	0	0	25K	0
TOTALS:					1	13	1.756B	175.000M

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The following information supports questions 1a through 1e and relates only to the districts that Tampa Electric serves in the above noted counties.

Hillsborough County					
Date	(1.a.) CMI	(1.b.) CI	(1.c.) C	(1.d.) Outages	(1.e.) Crew Jobs
8/9/2000	134,740	4,287	586,357	61	(Note 1)
8/26/2000	556,622	6,874	586,357	158	(Note 1)
11/25/2000	473,277	9,912	590,226	78	(Note 1)
6/15/2001	268,516	3,527	598,623	72	(Note 1)
6/19/2001	108,845	1,161	598,623	65	(Note 1)
6/29/2002	385,591	9,306	610,457	105	44
7/25/2002	1,110,869	14,356	611,679	167	108
7/29/2002	1,048,084	12,782	611,679	82	58
3/17/2003	383,084	9,415	603,768	71	34
4/25/2003	372,040	10,596	603,102	79	41
5/19/2003	489,429	7,122	603,625	123	69
6/3/2003	217,998	5,417	604,298	52	31
6/13/2003	213,286	5,102	604,298	47	30
6/16/2003	2,136,994	21,505	604,298	199	101
7/4/2003	325,179	3,373	605,367	78	42
7/22/2003	239,506	2,769	605,367	75	40
7/25/2003	309,825	3,404	605,367	69	39
7/30/2003	149,550	2,362	605,367	65	47
8/16/2003	860,654	2,438	606,557	106	52
2/24/2004	250,012	2,934	618,746	68	41
6/13/2004	2,430,633	15,205	617,517	169	79
6/24/2004	2,336,695	12,964	617,517	127	87
6/25/2004	569,045	3,431	617,517	128	84
6/27/2004	945,699	14,692	617,517	126	65
6/28/2004	413,763	2,450	617,517	102	66
12/26/2004	3,589,559	24,618	627,620	128	73
Pasco County					
Date	(1.a.) CMI	(1.b.) CI	(1.c.) C	(1.d.) Outages	(1.e.) Crew Jobs
5/31/2002	240,151	3,103	609,480	96	42
3/10/2004	3,261	51	619,512	9	7
Polk County					
Date	(1.a.) CMI	(1.b.) CI	(1.c.) C	(1.d.) Outages	(1.e.) Crew Jobs
7/16/2003	61,432	699	605,367	38	29
7/23/2003	41,868	293	605,367	36	36
10/7/2003	117,140	877	610,202	31	18
7/2/2004	419,237	5,088	621,838	107	62
7/11/2004	322,187	2,320	621,838	56	27
9/25/2004	134,996	1,441	621,840	32	19

Note 1: Due to OMS conversion completed in November, 2001, crew job data is not readily available for all related data prior to that date.

f

Year	December Daily Average Crew Jobs
2000	(Note 2)
2001	11
2002	18
2003	13
2004	15

Note 2: Due to OMS conversion completed in November, 2001, crew job data is not readily available for all related data prior to that date.

g

Year	December Daily Average Restoration Cost (in Dollars)
2000	$11,645
2001	$8,491
2002	$11,818
2003	$13,909
2004	$15,132

Year	December Daily Average Restoration Time (in Minutes)
2000	2,215
2001	2,239
2002	3,566
2003	2,951
2004	3,741

Note: Above referenced costs only pertain to the direct costs associated with crew jobs required for restoration during the average December days from 2000 to 2004. They exclude all other indirect expenses, including administrative and general.

h. Please see response to 1g for restoration costs for the average day in December.