

ORIGINAL

**BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION**

**DOCKET NO. 041291-EI
FLORIDA POWER & LIGHT COMPANY**

**IN RE: FLORIDA POWER & LIGHT COMPANY'S
PETITION FOR AUTHORITY TO RECOVER
PRUDENTLY INCURRED STORM RESTORATION COSTS
RELATED TO THE 2004 STORM SEASON
THAT EXCEED THE STORM RESERVE BALANCE**

NOVEMBER 24, 2004

DIRECT TESTIMONY & EXHIBITS OF:

LINDA R. WHALIN

DOCUMENT NUMBER-DATE

12585 NOV 24 3

FPSC-COMMISSION CLERK

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
FLORIDA POWER & LIGHT COMPANY
DIRECT TESTIMONY OF LINDA R. WHALIN
DOCKET NO. 041291-EI

I. INTRODUCTION AND CREDENTIALS

Q. Please state your name and business address.

A. My name is Linda R. Whalin. My business address is Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408-0420.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company (“FPL” or the “Company”) as Director of Distribution Operations Support.

Q. Please describe your duties and responsibilities in that position.

A. My duties and responsibilities include developing and ensuring execution of reliability programs, restoration processes, administering external labor management contracts, construction standards and design processes, and communications with customers impacted by distribution processes. In addition, I am responsible for the development and deployment of the Distribution hurricane response plan. During hurricane restoration, I am the

DOCUMENT NUMBER-DATE
12585 NOV 24 8
FPSC-COMMISSION CLERK

1 Director of Restoration Operations Support. My primary charge is to direct
2 and manage the development of the overall restoration strategy including
3 resource acquisition and deployment plans, analysis of data for workload
4 forecasting, and operations status reports. In addition, I along with others,
5 provide direction and coordination for all distribution and transmission
6 support activities from FPL's General Office Command Center (GOCC).

7

8 **Q. Please describe your educational background and the business**
9 **experience.**

10 **A.** I have a BS in engineering sciences from Michigan State University. I have
11 held many positions at FPL in my 25 years of service, primarily in the
12 Distribution area. I began my career with FPL in the marketing department
13 where I worked until 1983. From 1983 to 1997, I filled many positions in
14 field operations, including field engineer, crew supervisor, dispatch
15 supervisor, lead supervisor, and ultimately Distribution Operations Area
16 Manager. My responsibilities grew from field and design, supervising
17 construction crews, supervising outage dispatchers, to eventually managing
18 multiple service centers in southern Miami-Dade County. In 1997, I joined
19 Distribution Staff in the role of Distribution Reliability Manager and for three
20 years, developed and administered FPL's reliability program. In 2000, I
21 became a Distribution Director leading a joint information technology
22 project to change out legacy systems in the Distribution business unit. Key
23 deployments were a new work management system, asset management

1 system, data warehouse, and mobile applications deployed to the field
2 workforce. In July 2003, I was promoted to the position of Director of
3 Distribution Operations Support.
4

5 **II. PURPOSE**
6

7 **Q. What is the purpose of your testimony in this proceeding?**

8 **A.** I will provide an overview of FPL's current emergency preparedness plans
9 and processes. I will discuss how these plans were initiated and executed
10 during the 2004 hurricane season. I will also describe the extent of these
11 hurricanes and the resulting impact and damage to FPL's distribution
12 facilities. Finally, I will discuss the factors contributing to FPL's overall
13 successful performance in safely restoring service to the greatest number of
14 customers in the least amount of time.

15 .

16 **Q. Are you sponsoring an exhibit in this case?**

17 **A.** Yes. I am sponsoring a Composite Exhibit consisting of 4 documents
18 attached to my direct testimony. Those 4 documents are:

19 Document LRW-1, Characterization of Hurricanes and Timeline

20 Document LRW-2, Peak External and FPL Personnel Resources

21 Document LRW-3, Percent of Customers Restored by Day

22 Document LRW-4, FPL vs. DVP, Percent of Customers Restored by Day
23

1 **III. OVERVIEW OF EMERGENCY PREPAREDNESS PLAN AND**
2 **RESTORATION PROCESS**

3
4 **Q. What is the objective of FPL's emergency preparedness plan and**
5 **restoration process?**

6 **A.** The primary objective of FPL's emergency preparedness plan and restoration
7 process is to safely restore the greatest number of customers in the least
8 amount of time. Meeting the customers' needs for quick restoration is the
9 most prudent response after a hurricane. Experience has shown that extensive
10 planning, training, process discipline, and execution that can be scaled quickly
11 to match the storm are critical to successfully achieving this objective. It must
12 be understood, of course, that the objective of safely restoring electric service
13 as quickly as possible does not mean that service will be restored at the overall
14 least cost. FPL responds to storm restoration based on the primary interest of
15 all concerned, e.g., customers, governmental policy makers and other
16 officials, as well as FPL, to have power restored quickly. Restoring service at
17 the lowest possible cost does not result in rapid restoration.

18
19 **Q. What are the key components of FPL's emergency preparedness plan?**

20 **A.** The key components include:

- 21 • Disaster response policies and procedures
- 22 • Adjustable internal organizational structures based on the required
- 23 response

- 1 • Timeline of activities to assure rapid notification and response
- 2 • Mutual assistance agreements and vendor contracts and commitments
- 3 • Plans for movement of resources, personnel, materials, and equipment
- 4 to areas requiring service restoration
- 5 • Communication and notification plans for employees, customers,
- 6 community leaders, emergency operating centers, and regulators
- 7 • An established centralized command center with an organization for
- 8 command and control of emergency response forces
- 9 • Checklists and conference call agendas to organize, plan, and report
- 10 situational status
- 11 • Damage assessment modeling and reporting procedures
- 12 • Field and aerial patrols to assess damage
- 13 • Comprehensive circuit patrols to gather vital information needed to
- 14 identify the resources required for effective restoration
- 15 • Systems necessary to support outage management procedures and
- 16 customer communications

17

18 **Q. How does FPL prepare and ensure readiness to effectively respond to**
19 **storm events?**

20 **A.** Each year, prior to storm season, FPL reviews and updates its emergency
21 preparedness plan. The key focus areas of this plan are staffing the storm
22 organization, preparing logistics and support, and enhancing computer and
23 telecommunication systems all to ensure rapid restoration. As part of this
24 process, all business units in the company identify personnel for staffing the

1 emergency response organization. In many cases, employees assume roles
2 different than their regular responsibilities. Training is conducted for many
3 storm personnel each year regardless of whether they are in a new role or a
4 role in which they have served many times. This includes training on
5 processes that range from analytical and clerical to reinforcing restoration
6 processes for managers and directors.

7
8 In the logistics support area, preparations include increasing material
9 inventory, establishing staging site plans, expanding and verifying lodging
10 arrangements, and securing agreements and contracts for catering, busing, and
11 office trailers. These activities are important to ensure availability and
12 delivery of these critical items on time and at a reasonable cost. If FPL is not
13 impacted by storms, this increase in material inventory is absorbed through
14 normal business by year end. All of these agreements and activities provide
15 the foundation to begin any restoration effort, while continuing to remain
16 flexible to scale up resources and commitments as necessary, and at the same
17 time recognizing the possibility of not having a storm that year.

18
19 **Q. How do you test your emergency preparedness plan?**

20 **A.** FPL's readiness is tested during a hurricane "dry run" exercise held annually
21 right before the start of hurricane season. This event simulates a storm
22 impacting FPL's territory. The purpose is to provide a realistic,
23 challenging scenario that causes the organization to practice functions not
24 generally performed during normal operations. It is a full scale drill which

1 takes place with active participation from employees represented from every
2 business unit in the company. After months of preparation, the formal drill
3 activities begin 72 hours from the mock hurricane's forecasted time and date
4 of impact. The GOCC is fully mobilized and staffed. Field patrollers are
5 required to complete simulated damage assessments which are then utilized by
6 office staff to practice updating storm systems, acquiring resources, and
7 developing estimated times of restoration. The exercise also includes
8 simulating customer and other external communications, updating our outage
9 management system, and other storm specific applications.

10

11 **Q. How do you activate your restoration process?**

12 **A.** When a major storm threatens FPL's service territory, FPL responds by taking
13 well-tested actions at specified intervals prior to landfall. While these
14 hurricanes are developing in the Atlantic Ocean or Gulf of Mexico, our staff
15 meteorologists are monitoring conditions and various departments throughout
16 the company initiate preliminary preparations for addressing internal and
17 external resource requirements, logistics needs, and system operation
18 conditions. At 72 hours, the GOCC is activated, all storm personnel are
19 alerted, resource requirements are forecasted, initial restoration plans are
20 developed, contingency resources are activated, and commitments from
21 mutual assistance utilities are requested. In addition, all FPL sites begin to
22 prepare their facilities for the impact of the storm. At 48 hours, computer
23 models are run based on the projected intensity and path of the storm to

1 forecast expected damage, restoration workload and potential customer
2 outages. Based on the modeled results, commitments are confirmed for
3 restoration personnel, materials, and logistics support. Staging site locations
4 are then identified and confirmed based on the storm's expected path. At 24
5 hours, the focus turns to positioning personnel and supplies to begin
6 restoration as soon as it is safe to do so. The Company also provides
7 information to the news media, customers and community leaders regarding
8 storm preparation, what to do in the event of an outage, as well as public
9 safety messages.

10

11 **Q. Has FPL had previous opportunities to execute its emergency**
12 **preparedness plan and restoration process?**

13 **A.** Yes, since Hurricane Andrew, FPL has experienced a number of events which
14 have provided opportunities to execute and refine our storm plans. More
15 recently, in 1999, Hurricane Irene and Hurricane Floyd impacted FPL's
16 service territory and required full scale implementation of our restoration
17 processes. These plans were also utilized during Tropical Storm Gabrielle in
18 2001. On a smaller scale, some components were executed during the 2003
19 tornados that impacted Miami-Dade and Palm Beach counties, and the
20 extraordinary mesoscale convective complex weather event that affected the
21 state in April 2004.

22

23

1 **Q. How does FPL ensure the emergency preparedness plan and restoration**
2 **process are consistently followed?**

3 **A.** Significant standardization in field operations has been institutionalized
4 including: work-site organization; work preparation and prioritization; and
5 damage assessment. Procedures to ensure rapid preparation and mobilization
6 of remote staging sites have been developed to allow us to locate them in the
7 most heavily damaged areas.

8
9 Storm plan requirements are documented in a variety of media including
10 manuals, on-line procedures, checklists, job aids, process maps, and detailed
11 instructions. System data is continuously monitored and analyzed throughout
12 the storm. Multiple daily conference calls utilizing structured agendas are
13 held with GOCC business leaders to discuss overall progress and issues.
14 Twice daily, very detailed conference calls are held with all field locations
15 providing a mechanism for ensuring critical activities are being performed and
16 communicated at all levels throughout the organization. Overall monitoring
17 and performance management of field operations is performed through the
18 GOCC. In addition, field visits by GOCC personnel are routinely conducted
19 to validate process application and progress at remote work sites, as well as
20 identify any adjustments that may be required.

21
22
23

1 **Q. Can you provide some examples of any recent innovations in technology**
2 **that have been incorporated in FPL's plan?**

3 **A.** Yes, a few examples incorporated into our emergency plans include satellite
4 technology and other wireless alternatives that have been deployed to improve
5 the availability of data and communication transmissions. This provides fully
6 functional FPL network communications enabling full operational capabilities
7 at remote staging sites. Other critical technology innovations have included
8 enhancing our outage management system to accommodate large volumes of
9 customer calls and work-order management during major storms. In addition,
10 Geographic Information System (GIS) technology has been utilized to assist
11 in patrolling for damage and routing work orders as well as posting outage
12 maps on our internet website to enhance customer communications. As
13 previously mentioned, we've developed and continually refined predictive
14 models to estimate damage and resource needs.

15
16 **IV. IMPACT AND SCOPE OF 2004 STORMS**

17
18 **Q. Please provide an overview of the 2004 hurricane season**

19 **A.** In 2004, the state of Florida and FPL experienced a hurricane season where a
20 number of records were established. Only once in recorded history have four
21 hurricanes struck a single state in one year – and that was in Texas nearly 120
22 years ago. Also, never before have three hurricanes made landfall in FPL's
23 service territory in a single year. Additionally, to FPL's knowledge, the 2.8
24 million outages associated with Hurricane Frances were the most ever

1 experienced by a single utility in U.S. history. The impact has been
2 staggering. FPL employees were actively engaged in either planning for or
3 responding to these storms from August 10 through October 4, 2004.
4 The storms impacted every part of the company's 27,000 square mile territory
5 and required FPL to restore service to nearly 5.4 million customer outages.
6 About 3.1 million, or about 75% of FPL's 4.2 million customers were affected
7 by at least one event. I have provided these and other statistics in the
8 Document labeled LRW-1. The immense service restoration effort was
9 unprecedented for FPL, and for any utility in the United States. Every part
10 of our electric infrastructure was impacted, including our transmission system
11 which had 44 line sections interrupted in Hurricane Charley and up to 108
12 interrupted in Hurricane Frances. Substations out of service ranged from 14 in
13 Hurricane Charley to 54 in Hurricane Frances. In all three storms, service was
14 swiftly restored to all of the substations within two days, permitting all
15 distribution circuits to be energized. This aided in restoring service to our
16 customers quickly.

17
18 In the aggregate, the efforts required hundreds of thousands of man hours of
19 labor and massive quantities of materials, including approximately 13,200
20 poles, 11,100 transformers, and 1,700 miles of conductor. The majority of
21 restoration personnel worked 16 hours per day, providing 24 hour coverage
22 throughout the storm without taking any days off.

23

1 Customer call volumes received by FPL were also unprecedented. Over 2.6
2 million calls were handled throughout all three hurricanes. This is double the
3 total call volume handled for all of 2003.

4
5 **Q. Can you describe for each event, the extent of damage to FPL's**
6 **distribution facilities, and the impact on customers?**

7 **A.** On August 13, 2004, Hurricane Charley made landfall at Port Charlotte on the
8 southwest Florida coast with sustained winds of up to 140 miles per hour
9 (mph) as a category four hurricane. It affected 22 of the 35 counties served by
10 FPL before exiting at Daytona Beach as a category one hurricane on the east
11 coast, resulting in a loss of power to 874,000 FPL customers. Hurricane force
12 winds were 60 miles wide and tropical storm force winds were 210 miles in
13 diameter. Hurricane Charley inflicted extensive damage throughout FPL's
14 service territory, completely destroying portions of the Company's electric
15 distribution system. Port Charlotte, Punta Gorda and Arcadia, all
16 communities just north of Fort Myers, experienced severe damage similar to
17 that incurred during Hurricane Andrew. Due to the massive destruction, FPL
18 had to completely rebuild most of its electrical facilities in these areas. During
19 the storm, 84% of our major feeder circuits in this area experienced an
20 interruption. Significant restoration efforts were also required in other areas
21 hard hit by Hurricane Charley, including counties on the east coast, ranging
22 from as far south as Brevard County to as far north as St. Johns County. In
23 total, more than 7,100 poles, 5,100 transformers, and 900 miles of conductor
24 were replaced to restore the electrical system.

1 On September 5, Hurricane Frances made landfall near Stuart on the east
2 coast of Florida with sustained winds of up to 105 mph, a strong category two
3 hurricane. As reported by the National Weather Service, the hurricane force
4 wind swath extended 145 miles across, and tropical storm force winds
5 extended 345 miles in diameter. The immense breadth of the storm, which
6 was the size of Texas, affected all 35 counties within FPL's service territory.
7 The slow-moving storm remained positioned over much of the state for more
8 than 60 hours, allowing winds to batter the electrical system over an extended
9 period of time, toppling thousands of poles and downing hundreds of miles of
10 power lines. Over 60% of all FPL feeder circuits state-wide experienced an
11 interruption during the storm. By the time the hurricane exited the state
12 near Tampa as a tropical storm, the damage it had inflicted was extensive.
13 Nearly 2.8 million, or 67%, of FPL's 4.2 million customers lost power during
14 the storm. In total, more than 3,800 poles, 3,000 transformers, and 550 miles
15 of conductor were replaced in restoring service to these customers.

16
17 On September 25, 2004, almost exactly three weeks after Hurricane Frances
18 struck, a third hurricane, Hurricane Jeanne, made landfall at nearly the same
19 location as Hurricane Frances. Though Hurricane Jeanne moved across FPL's
20 service area in 45 hours, more quickly than Hurricane Frances, it was a
21 stronger hurricane and almost as large. Jeanne affected customers in all 35
22 counties served by FPL before leaving the territory north of Lake City as a
23 tropical storm. The category three hurricane struck with sustained winds of

1 120 mph. In the Palm Beach and Treasure Coast areas, 81% of all feeder
2 circuits experienced an outage. Hurricane-force winds extended 125 miles
3 across, while tropical storm force winds were 315 miles in diameter. More
4 than 1.7 million, or 41%, of FPL's customers lost power during the storm.
5 The total effort required replacement of more than 2,300 poles, 3,000
6 transformers, and 250 miles of conductor.

7

8 **V. RESPONSE**

9

10 **Q. Can you summarize FPL's restoration response?**

11 **A.** As previously stated, FPL's principal objective in emergency situations is to
12 safely restore service to the most customers in the least amount of time. The
13 entire response process is geared toward meeting this objective which requires
14 expediting decision making in the field and removing operational barriers.
15 For all three storms we consistently followed our plans for pre-storm planning
16 and preparation activities, starting with conference calls 72 hours prior to the
17 projected landfall. Following landfall, we first assessed the overall system
18 and repaired damage to the FPL power plants and the transmission lines that
19 carry power from the plants to towns and communities while at the same
20 time deploying our field teams to conduct neighborhood-by-neighborhood
21 damage assessments. Next, we focused on restoring power to the customers
22 who provide essential services for community health, safety and public
23 welfare such as water, sanitary, police, fire and rescue, and major hospitals
24 while simultaneously making repairs to the main feeder circuits that will

1 return power to the largest number of people first. Once major repairs had
2 been made, we began working to restore smaller groups and individual
3 customers.

4
5 **Q. How did FPL coordinate with local and state emergency operating**
6 **centers?**

7 **A.** We recognized that both FPL and government, at all levels, had the same
8 objectives to return our customers and communities back to normality as
9 quickly as possible. State policy makers, including the Governor, legislators,
10 local government officials, and regulators continually reinforced the need to
11 restore power as quickly as possible. FPL representatives were positioned in
12 state and local EOCs throughout the impacted areas to communicate priorities
13 and progress being made during all of the events.

14
15 **Q. What were the resource requirements for each storm?**

16 **A.** Hurricane Charley restoration efforts involved a peak work force of more than
17 13,500 individuals in the field performing repairs and reconstruction or
18 directly supporting those tasks. This was comprised of 7,500 FPL employees
19 and local contractors, and 6,000 external personnel (see Document LRW-2).
20 Southeastern Electric Exchange assistance was not sufficient to fill our
21 resource needs and, therefore, we sought additional commitments from many
22 other utilities. The restoration effort required expediting the construction and
23 operation of 13 separate staging sites along with support from our existing
24 FPL Service Center locations. It also involved partitioning FPL's territory

1 into two major restoration areas, one on the west coast, and the other in the
2 Daytona Beach area. The west coast response was essentially a rebuild effort
3 due to the extensive damage from category four winds, whereas the northeast
4 coast response was a restoration effort due to lesser category one impacts. As
5 restoration was being completed in the northeast area and those staging sites
6 were being de-activated, the resources were then redirected to travel to the
7 west area and join up with our restoration efforts there. Several of the staging
8 sites in the Punta Gorda and Arcadia area doubled or tripled in size to
9 accommodate all of resources utilized to complete restoration in the west area.
10 FPL completed restoring service to customers interrupted by Hurricane
11 Charley in 13 days.

12
13 Hurricane Frances restoration efforts required substantially more resources
14 that were spread out at more locations throughout our entire service territory.
15 This included 8,700 FPL employees and local contractors, and 8,000
16 external personnel for a peak work force of 16,700. FPL utilized 12 separate
17 staging sites from Flagler to Miami-Dade counties, several accommodating
18 over 1,000 personnel. Most east coast FPL service centers also received
19 additional resources to supplement their normal workforce. The overall impact
20 from Frances to all 35 counties of FPL's service territory also required a
21 significant larger number of patrol personnel and support resources to
22 expedite our response, more of which had to be supplied from external
23 utilities and companies. In addition, FPL was unable to immediately begin its

1 response to Hurricane Frances due to the storm's extraordinary size, duration,
2 and impact to the I-95 corridor, which impeded travel. Despite the impact,
3 within three days of Hurricane Frances exiting FPL's service territory, FPL
4 had restored power to 75% of those who had lost power, or 2.1 million
5 customers. Within one week, FPL had restored power to 92%, or 2.6 of the
6 2.8 million customers who had lost power. FPL completed restoring service
7 to customers interrupted by Hurricane Frances in 12 days.

8
9 While Hurricane Jeanne required comparable resources to Frances, many line
10 workers from the SEE utilities, normally available, were already committed to
11 the restoration for Hurricane Ivan and working in the Florida panhandle,
12 Alabama, and Mississippi. We also contacted many of the alternative utility
13 and contractor sources that we had established during Charley and Frances for
14 line workers and support personnel but most had immediately relocated their
15 people following Frances to help assist in the Ivan restoration. FPL had been
16 able to retain approximately 1,000 contract workers immediately following
17 Frances to complete follow-up repairs and although these resources were able
18 to start the restoration effort resulting from Jeanne, they were not enough. It
19 was necessary to now appeal to governmental agencies, other utilities, and
20 organizations throughout the country, such as the Edison Electric Institute for
21 additional resources. Thankfully, the restoration following Ivan had
22 progressed to the point where line workers were now being released from
23 their respective utilities and contract companies and could now be redirected

1 to assist FPL. Additionally, the Florida west coast utilities began to
2 release resources to FPL mid-week which were all deployed in FPL's territory
3 to assist in our restoration efforts. Despite the resulting delay and unique
4 challenges in acquiring resources, more than 16,500 personnel eventually
5 worked to complete repairs to the electrical system. This included 8,600 FPL
6 employees and local contractors, and 7,900 external personnel. During this
7 event, 13 staging sites were opened, most of which had been utilized during
8 Hurricane Frances as well. Even with these challenges, FPL had restored
9 power to over 75% of the 1.7 million customers who had lost power by day
10 three. Within five days, FPL had restored power to 93% of those customers
11 who had lost power. FPL completed restoring service to customers interrupted
12 by Hurricane Jeanne in eight days.

13

14 **Q. How did FPL determine how many resources were needed for the**
15 **storms?**

16 **A.** There are a variety of factors which influenced this decision. In each storm,
17 we utilized FPL's state-of-the-art damage assessment model to predict, by
18 service area, the expected damage and hours of work to restore service. These
19 estimates are based on the location of FPL's facilities, the storm's projected
20 path, and the effects of varying wind strengths on different facilities. These
21 workload projections are matched with resource factors such as availability
22 and location, and FPL's capacity to efficiently and safely manage and support
23 available resources. After the storm passed, FPL assessed actual damage

1 through aerial and ground patrols and utilized results of customer outage
2 information contained in the outage management system. This enabled us to
3 validate the workload requirements, and to make on-going adjustments in our
4 plans for acquiring and allocating external resources.

5
6 **Q. What steps does FPL take to acquire additional resources?**

7 **A.** An important component of each of these restoration efforts was FPL's ability
8 to scale up its available resources to match the increased volume of workload.
9 FPL is a participating member of the Southeastern Electric Exchange Mutual
10 Assistance group. While this group is a non-binding entity, it provides FPL
11 and other members with guidelines on how to request, and/or respond to
12 requests, for assistance from a group of approximately 20 utilities primarily
13 located in the southern and eastern United States. The guidelines require
14 reimbursement for direct costs of payroll and other expenses, including travel
15 costs to and from, when providing mutual aid in times of emergency. In
16 addition, FPL participates with the Edison Electric Institute to gain access to
17 other utilities and has requested assistance from those companies based on
18 similar, mutual assistance agreements. Resource requests are for line crews,
19 tree trimming crews, patrol, material-handling personnel and in some cases,
20 logistics support. FPL has participated in many emergency events as both a
21 requester and a responder.

22

1 FPL also has a number of contractual agreements with line and vegetation
2 contractors throughout the U.S. Many of these agreements are with
3 contractors that we use during normal operations. These contracts are
4 competitively bid and as a result, FPL has among the lowest labor rates for
5 contractors in the industry. As a result of the restoration needs, a large
6 number of additional line and vegetation companies were contracted to
7 provide support, pending release from utilities for which they normally work.
8 With great urgency, FPL negotiated rates with these new contractors.

9
10 **Q. Describe FPL's plan for the deployment and management of these**
11 **incoming external resources.**

12 **A.** Deployment and movement of resources was controlled through the GOCC,
13 utilizing personnel tracking and outage management systems to monitor
14 execution of the plan. Daily management of the crews is performed by the
15 field operations organization, which is responsible for effectively
16 implementing FPL's restoration strategy. Decisions on opening of staging
17 sites to position the workforce in the most damaged areas were based on the
18 timing of the arrival of external resources. The resource acquisition team
19 coordinator maintained contact with incoming personnel to confirm the daily
20 resource deployment plan. Daily analysis of workload execution and
21 restoration progress permitted dynamic and effective resource management.
22 This enabled a high degree of flexibility and mobility in allocating and
23 deploying resources in response to changing conditions and requirements.

1 Another critical factor was FPL's ability to assemble trained and experienced
2 management teams to direct field activities. As part of the storm organization,
3 management teams included group leaders and crew supervisors to directly
4 oversee field work.

5
6 **Q. What logistics and support personnel and activities were required?**

7 **A.** To support the thousands of workers, various logistics functions were
8 required. These functions included, but were not limited to, acquisition,
9 preparation and coordination of: staging sites, lodging, laundry, buses,
10 caterers, ice and water, office trailers, light towers, generators, port-o-lets,
11 security guards, communications, and fuel delivery. On average, we served
12 38,000 meals and provided 20,000 gallons of water daily during each of the
13 three hurricanes. In most cases, agreements with primary vendors are in place
14 prior to the storm season as part of our storm planning process. Additional
15 logistic staffing needs are provided by FPL personnel from all parts of our
16 company. Most of these employees are pre-identified, trained and assigned to
17 provide site logistics management as well as to support other needs of the
18 restoration workforce. In some cases, additional manpower is provided by
19 contracting services.

20

21

22

1 **Q. Can you provide some examples of unique solutions to specific challenges**
2 **that FPL encountered?**

3 **A.** Each storm brought unique restoration challenges. With four hurricanes in six
4 weeks impacting much of the southeast U.S., preparing for and acquiring
5 needed assistance due to Hurricanes Charley, Frances and Jeanne involved
6 formidable tasks. Because of the size and potential path of Frances, other
7 utilities were unwilling to release resources in advance of Frances' landfall.
8 The presence of Hurricane Ivan made acquiring resources for Jeanne difficult
9 as well. With a clear commitment to restore customers as quickly as possible,
10 we brought crews to Florida from 39 different states and parts of Canada (see
11 Document LRW-2). Even though incurring these travel costs was not a
12 decision that would be made during normal times, we recognized it was
13 prudent to take these actions in order to ensure we could continue to meet our
14 prime objective to restore power quickly. Personnel, from as far away as
15 California, traveled to Florida by air, using rental and FPL vehicles to
16 participate in the restoration effort until their trucks arrived later via ground
17 transfer.

18
19 Damage, debris, vegetation and flooding created a lack of accessibility to
20 FPL's electric facilities but this was overcome by leveraging special
21 equipment such as large highly-mobile cranes, and a variety of swamp
22 vehicles. In some instances, helicopters were required to transfer poles. To
23 begin restoration on inaccessible island areas, FPL trucks and equipment were

1 transported on barges. Use of this equipment facilitated restoration to areas
2 that would have potentially experienced significantly longer outages.

3
4 Other examples included the use of specialized environmental vehicles to
5 vacuum mounds of sand from electric vaults located in coastal high-rise
6 buildings. Where storm surge and salt intrusion were prevalent, teams used
7 specialized equipment to wash and decontaminate underground equipment.
8 When one of our dispatch control centers lost both primary and contingency
9 communications, we were able to divert critical functions to another dispatch
10 control center due to our state-wide voice communications and control
11 systems capability.

12
13 The fuel shortage caused by overwhelming consumer demand for gasoline and
14 the closing of ports in Florida created many challenges for our fleet
15 department. To ensure that our vehicles and those of the assisting companies
16 were fueled, FPL contracted for additional tankers from Alabama, Georgia
17 and Texas. We also utilized 8,000-gallon compartmentalized transport
18 tankers that served as on-site mobile fueling stations at our staging sites for
19 both unleaded and diesel fuel. Additionally, we made use of skid tanks
20 ranging from 500 to 2,000 gallons in some of the smaller staging sites and
21 service centers. To maximize efficiency, the majority of our fueling, roughly
22 180,000 gallons per day, was done at night by mobile 4,400- gallon pumpers.

23

1 As additional crews were secured to join the restoration effort, the need for
2 additional staging sites grew. Consequently, senior managers were assigned to
3 all sites to coordinate logistical issues allowing restoration management teams
4 to focus on restoring service to customers. In addition, management teams
5 were kept together from one storm to the next, often at the same locations, in
6 order to capitalize on familiarity and other synergies to facilitate more
7 efficient mobilization.

8
9 To enhance back-up communications capabilities, FPL acquired outside
10 technicians to assist with radio functionality and repairs, and took steps to
11 establish network communication infrastructure to anticipated staging sites
12 prior to landfall. Satellite technology was utilized when normal
13 communications were unavailable.

14
15 Acquiring lodging for both FPL and external crews became extremely
16 difficult as many local residents had evacuated to area hotels. To further
17 compound the problem, many hotels suffered severe damage and were
18 uninhabitable. Alternative housing was utilized until lodging arrangements
19 could be made.

20
21 GIS mapping tools were deployed to field sites in order to create customized
22 maps which pinpointed damage locations to assist external workers unfamiliar
23 with local geography.

1 FPL's telecommunication organization assessed the quality of wireless and
2 cell phone service at each location. They then acquired and deployed the
3 appropriate equipment necessary to maximize quality and availability of
4 communications.

5
6 We established mini depots to locate materials right at specific job sites to
7 minimize travel time to keep crews productive. We also utilized roving
8 material trucks where crews were assigned to ensure material was readily
9 available.

10

11 **VI. OPERATIONAL PERFORMANCE**

12

13 **Q. How effective was FPL's plan during the events?**

14 **A.** As mentioned before, our primary goal is to safely restore the greatest number
15 of customers in the least amount of time to return the communities we serve to
16 normality. Many records were established in this unprecedented storm season.
17 More than 3.1 million customers across FPL's territory were affected at least
18 once by these storms. In each storm, over 75% of customers affected were
19 restored by the third day (see Document LRW-3). Document LRW-3 depicts
20 the percentage of customers restored each day in each hurricane. The high
21 percentages accomplished in the first few days in each storm result from
22 FPL's consistently applied restoration strategy - to restore devices that serve
23 the largest number of customers first. We were able to acquire an

1 extraordinary number of workers and managed more than twice as many
2 staging sites than ever before, while effectively managing field operations.
3 The different characteristics of each storm make true comparison metrics
4 difficult. In recent history, FPL had experienced a major category hurricane
5 only once before - Hurricane Andrew in 1992. In 2004 we experienced two
6 major hurricanes and one category two hurricane within six weeks. Still we
7 completed restoration in all of these storms in two weeks or less, as compared
8 to more than one month for Andrew.

9

10 **Q. Can you discuss what factors contributed to FPL's performance?**

11 **A.** There are numerous factors which contributed to FPL's overall performance.
12 We have solid plans and procedures, strong centralized command,
13 contingency plans for critical operations, and the tools and processes which
14 ensure effective communications and information flow. Focus on process
15 discipline and consistent execution of the plan resulted in consistent
16 performance as demonstrated in Exhibit No. LRW-3.

17

18 **Our damage forecasting model, along with aerial patrols and ground**
19 **assessments allowed us to identify how many resources would be needed, and**
20 **where. Aggressively seeking resources prior to landfall, and continued**
21 **diligence when many of our traditional sources for personnel were**
22 **unavailable, resulted in successfully acquiring the necessary workforce, albeit**
23 **from greater distances. The centralized function of resource planning allowed**

1 us to allocate personnel where needed, and redeploy as workload shifted.
2 Effective damage assessment through ground patrols confirmed the resource
3 allocation plan and allowed for adjustments.

4
5 Robust system design and functionality allowed us to continually gauge
6 progress and make adjustments as changing conditions and requirements
7 warranted.

8
9 As transmission and substation field workers completed their restoration
10 efforts, they were redirected to distribution work.

11
12 Strong alliances with our vendors assured ample supply of materials and
13 avoided delays.

14
15 Additionally, we have made considerable investments in our infrastructure
16 and various programs to improve the overall reliability of our distribution
17 system. From 1998 to 2003 alone, we have spent over \$900 million to
18 improve our service reliability. Because our service unavailability has been
19 reduced by 50% since 1997, we believe these initiatives have made a positive
20 impact to the service levels we provide to our customers. Had we not made
21 this investment in our infrastructure, we believe our performance would not
22 have been as good.

23

1 Finally, past experience, constant practice, and employee skill and
2 commitment gave us the ability to anticipate operational barriers and to
3 proactively develop alternative actions to overcome them.
4

5 **Q. Can you provide any external comparative information to help gauge**
6 **FPL's recent hurricane restoration efforts?**

7 A. Yes. Though it is not possible – for many widely recognized reasons (e.g.,
8 variations in topography, customer density, utility systems, structural damage,
9 etc.) – to draw precise conclusions when comparing different utilities'
10 responses to a given event, or the same utility's response to different events,
11 some general observations can be made. For example, I have reviewed a
12 recent report prepared by the Virginia State Corporate Commission (VSCC)
13 Staff which examined the response to Hurricane Isabel. Preparation For and
14 Response to Hurricane Isabel by Virginia's Electric Utilities, Special Report
15 of the Division of Energy Regulation, Commonwealth of Virginia State
16 Corporation Commission, September 20, 2004. Hurricane Isabel made
17 landfall near Cape Hatteras, North Carolina on September 18, 2003 as a
18 Category two storm with winds near 100 mph. This landfall was
19 approximately at the southern end of Dominion Virginia Power's (DVP)
20 territory. About 1.7 million of DVP's 2.1 million customers (or 81%) were
21 affected by the storm. As shown in Document LRW-4, the restoration rates
22 for FPL in all three events were basically the same or slightly faster than that
23 for DVP. The Staff concluded that "...restoration efforts following Hurricane

1 Isabel generally were reasonable and satisfactory by any standard measures of
2 performance. The time required for full restoration of service following
3 Hurricane Isabel was neither unexpected nor unreasonable...”. Ibid, page iii. I
4 believe that FPL’s response to each of the three hurricanes that struck its
5 service territory in 2004 compares favorably with DVP’s response to
6 Hurricane Isabel that the VSCC Staff determined to be reasonable.
7

8 **VII. CONCLUSION**

9
10 **Q. Please summarize your testimony.**

11 **A.** FPL has highly effective emergency preparedness plans and processes.
12 Annual practice assures consistent and effective performance. We’ve
13 experienced natural weather events in the past, but 2004 was an
14 unprecedented year which tested our plans, expanded our capabilities, and
15 exceeded past performance. Critical to achieving these results was FPL’s
16 processes and the management teams’ experience. We know these were
17 catastrophic events not only for FPL, but for all of Floridians. Throughout
18 the events, FPL worked tirelessly to bring available internal and external
19 resources to bear. Once in position, all efforts were made to maximize the
20 productive hours such as feeding crews on site and nighttime fueling. We
21 took extraordinary actions in acquiring all necessary resources in order to
22 meet the prudent objective of restoring electric service as quickly and safely
23 as possible, to allow our customers and the communities we serve to return to

1 normality. Unique challenges required innovative solutions. We focused on
2 the objectives and strategies required to successfully execute our plans. We
3 took reasonable, necessary, and prudent actions in meeting our restoration
4 objective for each storm.

5

6 **Q. Does this conclude your direct testimony?**

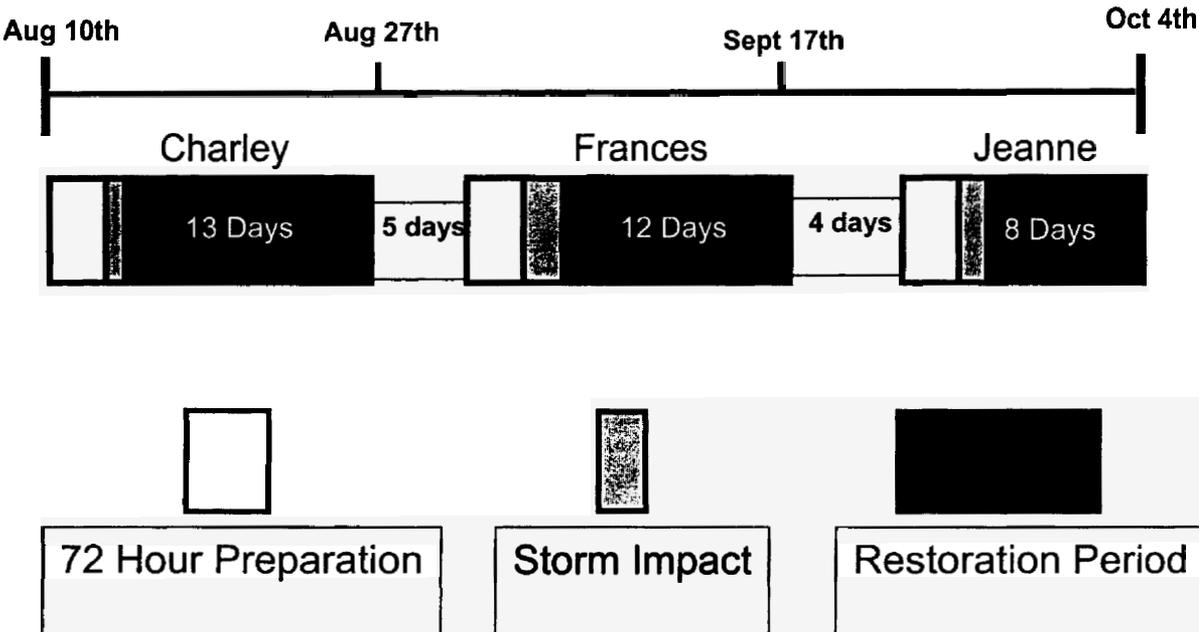
7 **A. Yes.**

Characterization of Hurricanes and Timeline

Characterization of Hurricanes

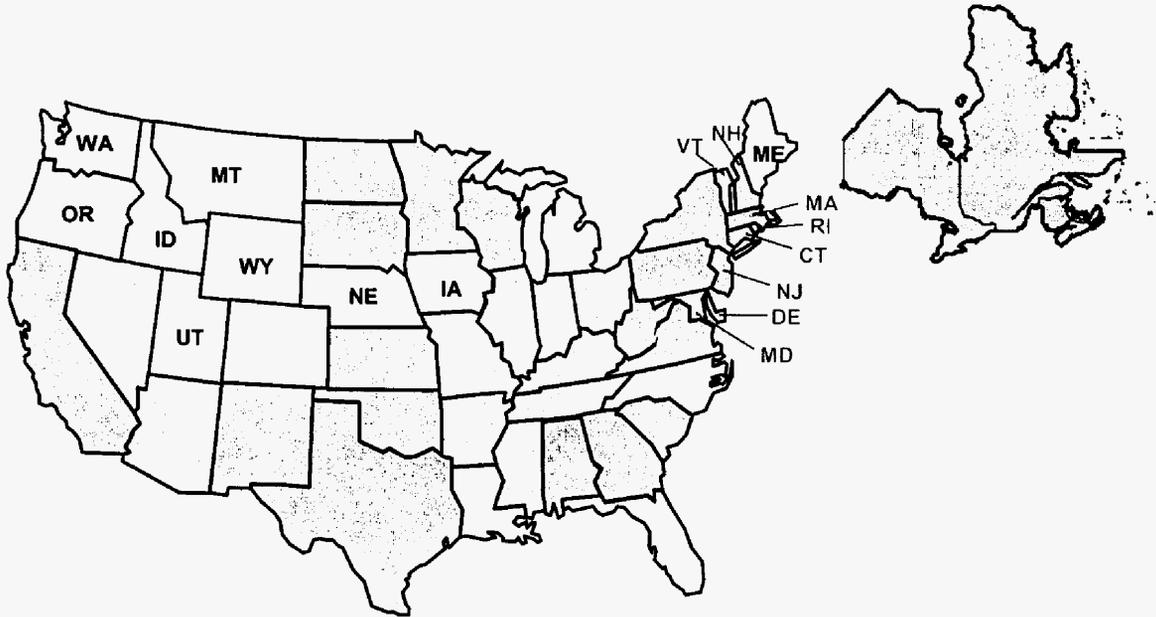
CHARACTERIZATION	CHARLEY	FRANCES	JEANNE
Customers affected	874,000	2,786,300	1,737,400
Counties impacted	22	35	35
Hours of impact	20	60	45
Width (mi.) of hurricane force winds	60	145	125
Width (mi.) of tropical force winds	210	345	315
Maximum sustained winds (MPH) at landfall	140	105	120

Timeline of Hurricane Response



Peak External and FPL Personnel Resources

External Resources Came from 39 States & Canada



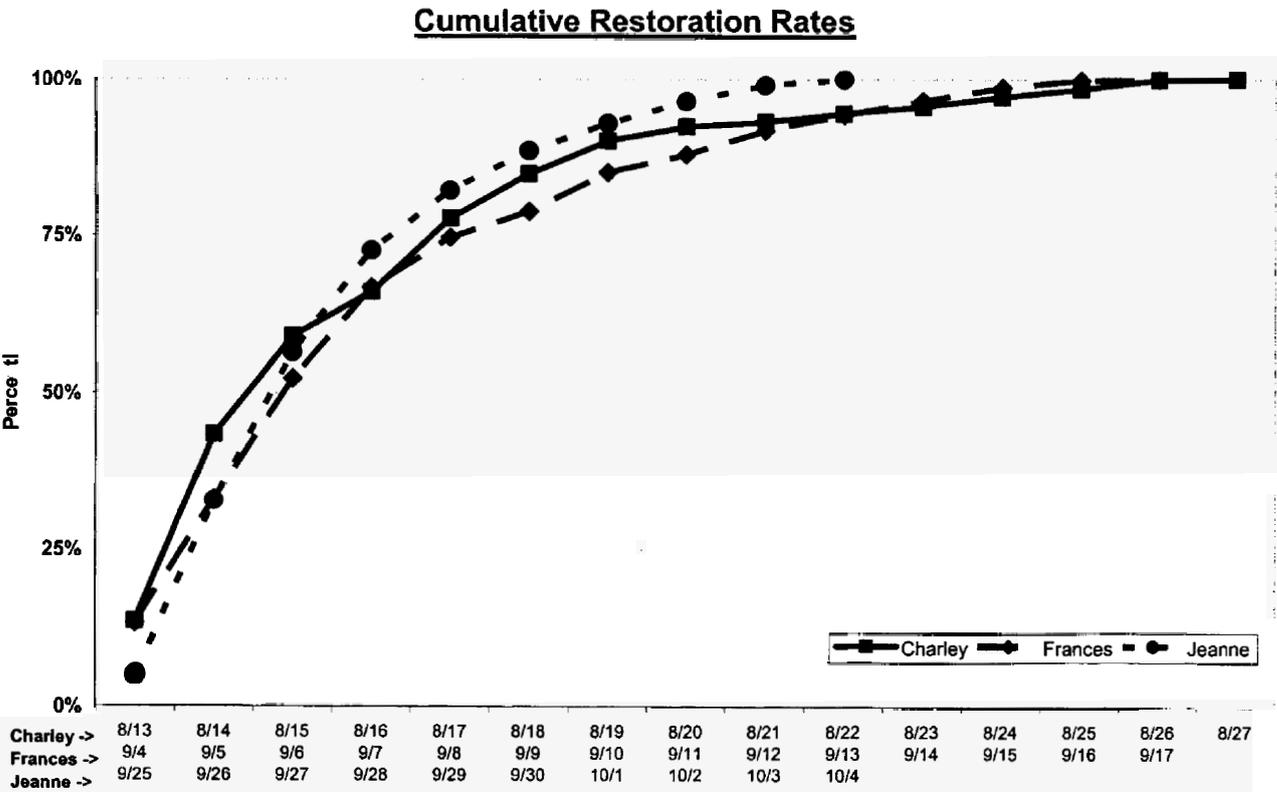
Approximate Peak Resources

	CHARLEY	FRANCES	JEANNE
FPL*	7,500	8,700	8,600
Contractors/Utilities**	6,000	8,000	7,900
TOTAL	13,500	16,700	16,500

* Includes contractors that normally work for FPL

** Line workers, tree personnel, and other

Percent of Customers Restored by Day



FPL vs. DVP Percent of Customers Restored by Day

