

**BEFORE THE FLORIDA  
PUBLIC SERVICE COMMISSION**

**DOCKET NO. 120015-EI  
FLORIDA POWER & LIGHT COMPANY**

**IN RE: PETITION FOR RATE INCREASE BY  
FLORIDA POWER & LIGHT COMPANY**

COM 5  
APA 1  
ECR 10  
GCL 1  
RAD 1  
SRC 1  
ADM 1  
OPC 1  
CLK 1  
Crt Rep 1

**TESTIMONY & EXHIBITS OF:**

**MANUEL B. MIRANDA**

DOCUMENT NUMBER - DATE

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**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**  
**FLORIDA POWER & LIGHT COMPANY**  
**DIRECT TESTIMONY OF MANUEL B. MIRANDA**  
**DOCKET NO. 120015-EI**

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1 **I. INTRODUCTION**

2

3 **Q. Please state your name and business address.**

4 A. My name is Manuel B. Miranda. My business address is Florida Power & Light  
5 Company, 700 Universe Boulevard, Juno Beach, Florida 33408.

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

7 A. I am employed by Florida Power & Light Company (“FPL” or the “Company”) as  
8 Vice President of Transmission and Substation.

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

10 A. I am responsible for FPL’s bulk and regional transmission planning, operations,  
11 maintenance, engineering and construction activities, including ensuring the  
12 reliability and security of the FPL transmission and substation facilities in a safe  
13 and effective manner, consistent with the applicable reliability standards.

14 **Q. Please describe your educational background and professional experience.**

15 A. I joined FPL in 1982 and have served in a variety of positions within Customer  
16 Service, Distribution and Transmission. These positions include engineering,  
17 dispatch operations, commercial and industrial manager, Director of Distribution  
18 Operations and Vice President of Distribution System Performance, responsible  
19 for FPL’s Storm Secure initiative to substantially strengthen the distribution  
20 infrastructure against future hurricanes. My current position is Vice President of  
21 Transmission & Substation.

1 I have a Bachelor of Science in Mechanical Engineering from the University of  
2 Miami and a Master's in Business Administration from Nova Southeastern  
3 University.

4 **Q. Are you sponsoring any exhibits in this case?**

5 A. Yes. I am sponsoring the following exhibits, which are attached to my direct  
6 testimony:

- 7 • MM-1, Summary of Sponsored MFRs
- 8 • MM-2, 2011 SGS Statistical Services ("SGS") Transmission Reliability  
9 Benchmarking Study All Voltages 2008-2010 (3 years)

10 **Q. Are you sponsoring or co-sponsoring any Minimum Filing Requirements**  
11 **("MFRs") filed in this case?**

12 A. Yes. Exhibit MM-1 shows my co-sponsorship of MFRs.

13 **Q. What is the purpose of your testimony?**

14 A. The purpose of my testimony is to: (1) describe the solid track record of the  
15 Transmission and Substation Business Unit ("Transmission"), based on system  
16 performance and reliability, including the programs that help to provide FPL  
17 customers with a high level of reliable service in a cost-effective manner; (2)  
18 address the initiatives that improve the storm resiliency of the transmission  
19 system's infrastructure; (3) explain the ongoing need for capital investments  
20 required to maintain FPL's high level of reliability for customers; (4) describe  
21 how Transmission effectively manages Operations & Maintenance ("O&M")  
22 expenses for the 2013 test period compared to the Commission Benchmark; and

1 (5) discuss FPL's efforts to meet its commitments to customers and to ensure  
2 compliance with all applicable regulatory and reliability standards.

3 **Q. Please summarize your testimony.**

4 A. Transmission provides a high level of reliable service through a proactive  
5 approach to reliability. Transmission has consistently provided customers with a  
6 superior level of reliable service in a cost-effective manner. The requested base  
7 rate increase will permit FPL to maintain this level of reliability for customers  
8 while promoting compliance with all applicable regulatory commitments.

9  
10 In a 2011 industry transmission reliability benchmarking study conducted by SGS  
11 Statistical Services ("SGS"), FPL's System Average Interruption Duration Index  
12 ("SAIDI") for 2010 data and for aggregate data from 2008 through 2010 was in  
13 the top 10% of survey participants. In 2010, FPL's Transmission SAIDI was  
14 3.99, improving in 2011 to a SAIDI of 3.17 (21% improvement from 2010).  
15 During the five years ending with 2010, Transmission had the best average  
16 Transmission SAIDI of the Florida investor-owned utilities. This overall  
17 performance is a direct result of the commitment of FPL's management and  
18 employees to providing superior reliability and service at a reasonable cost.

19  
20 The foundation of Transmission's reliability program is condition-based  
21 maintenance which is used to evaluate equipment and determine remaining useful  
22 life. Combining equipment assessment with a comprehensive risk management  
23 approach leads to the development of an appropriate, cost-effective plan to extend

1 the life of FPL's transmission and substation assets and replace those assets only  
2 when appropriate. An important part of this process involves the Company's use  
3 of both FPL and industry experience to focus on predictive maintenance and  
4 prevention of recurrence of events to reduce the frequency and duration of  
5 customer outages.

6  
7 Notwithstanding these programs, Transmission will require funding to maintain  
8 the level of system stability and service reliability that customers expect. The  
9 required capital expenditures are driven by the need for transmission  
10 infrastructure improvements, storm hardening efforts, and regulatory  
11 commitments. While FPL must continue to refurbish or replace aging facilities,  
12 the Company also must invest in transmission system expansion projects and  
13 added capacity where technology improvements and equipment upgrades already  
14 have maximized the efficiency of the existing infrastructure. Given current  
15 capacity limitations and FPL's assessment of its system, the Company has  
16 developed a sound plan to replace infrastructure and add new capacity through  
17 projects that I will describe later in my testimony. FPL must responsibly move  
18 forward with this work to maintain a safe and reliable system for the benefit of its  
19 current and future customers.

20

## II. RELIABILITY

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**Q. Please describe the FPL transmission and substation system.**

A. As of January 1, 2012, the FPL transmission and substation system was comprised of 6,721 circuit miles of transmission lines operating at voltages from 69 kiloVolt (“kV”) to 500 kV, 518 distribution substations and 98 transmission substations. The FPL transmission system is designed to integrate all of FPL’s generation resources in a reliable and cost-effective manner to serve FPL’s customers. FPL is required to plan, design, construct, operate and maintain its transmission and substation system to meet all applicable reliability standards.

**Q. How is Transmission’s reliability performance measured, and how does FPL compare to other electric utilities?**

A. To evaluate reliability performance, FPL uses standard industry measures for frequency and duration of outages such as SAIDI. These standard industry measurements provide a comprehensive and useful indication of the level of reliability FPL provides to its customers.

In a 2011 industry transmission reliability benchmarking study conducted by SGS, FPL’s SAIDI for 2010 data and for aggregate data from 2008 through 2010 was in the top 10% of survey participants. In 2010, FPL’s Transmission SAIDI was 3.99, improving in 2011 to a SAIDI of 3.17 (21% improvement from 2010). During the five years ending with 2010, Transmission had the best average Transmission SAIDI of the Florida investor-owned utilities. This overall



1 performance is a direct result of the commitment of FPL's management and  
2 employees to providing superior reliability and service at a reasonable cost.

3 **Q. Please describe Transmission's reliability programs.**

4 A. Transmission reliability programs are Facility/System Assessments, Targeted  
5 Maintenance, Prevention through Prediction, Prevention of Recurrence,  
6 Vegetation Management, and Smart Grid Technology. These programs utilize  
7 diagnostic tools to assess equipment and facility conditions. The information  
8 obtained from these assessments is used to develop a plan for maintenance and  
9 replacement. Resulting processes and initiatives are executed in a cost-effective  
10 manner that maintains grid reliability and reduces the frequency and duration a  
11 customer is without electricity due to transmission and substation events. The  
12 two main processes used to execute these programs are the Condition Assessment  
13 Process and Event Response Process.

14

15 The Condition Assessment Process has three main components that involve  
16 transmission line and substation assessments, remaining useful life determination  
17 for assets, and risk management. The second key process, Event Response  
18 Process, is designed to determine the root cause for every unplanned outage of  
19 transmission and substation equipment. Each event is recorded, classified and  
20 analyzed. The results of each outage cause analysis are then used in the  
21 Condition Assessment Process and incorporated into the design and engineering  
22 of future facilities. This approach supports prevention of recurrence and  
23 mitigation of future events, together with a resulting reduction in the frequency

1 and duration of customer outages. These two processes support Transmission's  
2 reliability programs.

3 **Q. Please provide some examples of Transmission's reliability programs and**  
4 **explain how these programs benefit FPL's customers.**

5 A. The following are some examples of Transmission's reliability programs:

6

7 • **Facility/System Assessments** – Transmission line and substation assessments  
8 are conducted using equipment diagnostics and both on-site and remote  
9 system surveillance. The assessments include oil sampling and testing,  
10 equipment and protective system testing, thermal imaging of components, and  
11 climbing inspections and station assessments, all of which provide  
12 information used to prevent or predict equipment or facility failures. Part of  
13 system surveillance is accomplished through equipment performance  
14 monitoring and diagnostics, consistent with Smart Grid initiatives, using  
15 remote monitoring tools and analysis programs which are deployed in the  
16 Transmission and Performance Diagnostic Center ("TPDC").

17

18 • **Targeted Maintenance** – Information obtained during condition assessment  
19 is evaluated using predictive models. A plan is then developed to replace or  
20 conduct targeted maintenance on major equipment and facilities. Targeted  
21 maintenance for equipment and facilities extends the useful life of the  
22 equipment while minimizing cost and significantly deferring the need for  
23 substantial investment in new equipment and capital projects.

- 1           • **Prevention through Prediction** – By combining remaining useful life  
2           determination with risk assessment of the transmission system, a plan is  
3           developed to replace major equipment and facilities in a predictive manner.  
4           Predictive replacements minimize customer impact and cost while  
5           maximizing asset utilization. When predictive replacements are made,  
6           customers benefit from FPL’s use of technological advances and design  
7           improvements. These improvements reduce the likelihood of interruptions  
8           and mitigate the effects on customers when interruptions do occur.  
9
  
- 10          • **Prevention of Recurrence** – Through the use of the Event Response Process  
11          described above, Transmission develops countermeasures to prevent the  
12          recurrence of similar events that could cause outages.  
13
  
- 14          • **Smart Grid Technology** – FPL is incorporating intelligent technology into  
15          the substation systems to improve reliability and to better anticipate and  
16          respond to system disturbances. For example, Distribution Substation  
17          Transformer Relay Scheme upgrades will utilize microprocessor-based  
18          systems to gather power system data, assess equipment operating conditions  
19          and enable the use of auto-restoration and self-healing systems. In addition to  
20          improvements in reliability, the project aims to increase the situational  
21          awareness of grid operations and optimize asset utilization.  
22

1           • **Vegetation Management** – The growth of vegetation into overhead power  
2           lines represents a major challenge to electric utilities. This is particularly true  
3           in much of Florida with the year-round growing season. Transmission’s  
4           Vegetation Management Program involves trimming and right-of-way  
5           clearance and has two main focuses: System Stability and Customer Impact  
6           Reliability. From the perspective of System Stability, this work focuses on  
7           preserving right-of-way requirements for higher voltage transmission lines  
8           (500 kV and 230 kV) that can affect the entire system. The Customer Impact  
9           Reliability work includes condition assessments of the lower voltage  
10          transmission lines, in order to determine appropriate maintenance trimming  
11          requirements.

12  
13          In summary, FPL’s reliability initiatives significantly contribute to the prevention  
14          and minimization of outages and customer inconvenience, while at the same time  
15          extending the life of equipment and infrastructure in an appropriate and cost-  
16          effective manner.

17 **Q.     How has FPL used technology to improve the monitoring and control of its**  
18 **transmission system?**

19 A.     FPL is implementing the following initiatives to improve the overall reliability of  
20          the transmission system:

21  
22          • **FPL System Control Center** – The FPL System Control Center (“SCC”) is a  
23          state-of-the-art facility that plays a key role in the efficient operation of FPL’s

1 transmission and substation systems. The quality and availability of tools and  
2 information on the status of FPL's system are hallmarks of FPL's SCC.  
3 Coordination among FPL and the other members of the Florida Reliability  
4 Coordinating Council to improve system management demonstrates FPL's  
5 continuous commitment to the reliable operation of the electric system.

6  
7 FPL operates its transmission system in full compliance with all applicable  
8 standards. The North American Electric Reliability Corporation ("NERC")  
9 Critical Infrastructure Protection ("CIP") standards provide a cyber security  
10 framework for the identification and protection of critical cyber assets to  
11 support the reliable operation of the Bulk Electric System ("BES"). The CIP  
12 standards include controlling and monitoring both physical and electronic  
13 access to the related cyber asset in support of the SCC. The CIP standards  
14 also require procedures for securing these cyber assets and training programs  
15 to instruct operations employees on expectations. Transmission has  
16 implemented cyber security measures to fully comply with the NERC CIP  
17 standards.

- 18  
19 • **Transmission and Performance Diagnostic Center** – Another example of a  
20 major transmission reliability initiative is the creation of the TPDC. The  
21 TPDC is a center for monitoring the critical operating parameters of  
22 transmission equipment and performing analyses. Current and near-future  
23 assessment methods provide early prediction of asset failures by monitoring

1 and using real-time statistical analysis of equipment performance to identify  
2 abnormal conditions. Through the use of dashboards and other informational  
3 displays, the health of transmission and substation equipment is continuously  
4 monitored. The TPDC also provides analyses of system events and acts as a  
5 transmission and substation support team.

6  
7 The TPDC enhances FPL's predictive capabilities by providing remote  
8 analysis of transmission and substation asset performance. The actual  
9 performance of equipment is compared to various equipment technical  
10 operating parameters to determine the present condition of installed  
11 equipment. Deviations from the technical operating parameters of the  
12 equipment can then be further assessed and investigated to minimize impacts  
13 on the system.

14  
15 The TPDC also coordinates with the SCC and Distribution Dispatch to  
16 respond with analyses of system events. TPDC personnel gather relay targets,  
17 sequence of events from the Supervisory Control and Data Acquisition system  
18 and other pertinent forensic information immediately following an outage, all  
19 while the first responder is still in route to the site of the event. Armed with  
20 this information upon arrival, first responders are able to perform the  
21 restoration more quickly than in the past. In fact, for feeder breaker failures,  
22 the contributions from TPDC have resulted in an improvement in restoration  
23 times.

1           **III. INFRASTRUCTURE IMPROVEMENTS – STORM RESILIENCY**

2  
3   **Q.    Please provide an update on efforts to improve the strength and resiliency of**  
4   **FPL transmission infrastructure in the event of a major storm.**

5   A.    In April of 2006, the Florida Public Service Commission issued Order No. PSC-  
6   06-0351-PAA-EI, requiring investor-owned electric utilities to file plans for ten  
7   (10) ongoing storm preparedness initiatives. As a result of initiative four (4) in  
8   this order, FPL accelerated two (2) programs for strengthening and improving  
9   resiliency of existing transmission structures in the event of a major storm. These  
10   programs are described as follows:

- 11  
12       •   **Replacement of Wood Transmission Structures:** FPL has implemented  
13       plans to replace all wood transmission structures throughout its service  
14       territory. New structures are made from engineered materials (such as  
15       concrete or steel). FPL transmission line structural designs are governed by  
16       Florida Statute Section 366.04. Under this Statute, all high voltage  
17       transmission structures must satisfy the requirements as specified by the  
18       National Electrical Safety Code (“NESC”, an American National Standard  
19       Institute (“ANSI”) publication, C 2). The ANSI C 2 document addresses  
20       extreme wind load criteria (Rule 250 C) which covers all wind sensitive  
21       factors and wind related effects that need to be considered in the design  
22       calculations. Between January 1, 2006 and December 31, 2011, the number  
23       of wood transmission structures at FPL decreased from 26,147 to 15,542.

1 FPL has committed to replace all wood structures. As of December 31, 2011,  
2 over 75% of the transmission structures at FPL are made from either concrete  
3 or steel.

- 4
- 5 • **Replacement of Ceramic Post Insulators on Concrete Structures:** FPL is  
6 also replacing ceramic post insulators on concrete structures. New insulators  
7 are made from polymer materials, meet current design standards, and  
8 minimize cascading type events. Between January 1, 2006 and December 31,  
9 2011, the number of concrete transmission structures with ceramic post  
10 insulators at FPL decreased from 5,562 to 2,139. As of December, 31 2011,  
11 less than 4% of FPL's transmission structures are concrete with ceramic post  
12 insulators.

13

#### 14 IV. REGULATORY COMPLIANCE

15

16 **Q. Please describe how federal regulations impact FPL's transmission business.**

17 A. Transmission is a heavily regulated sector of the electric utility industry. Under  
18 the direction of the Federal Energy Regulatory Commission ("FERC"), NERC  
19 has developed and issued 116 reliability standards, of which 104 standards,  
20 containing 1,080 requirements and sub-requirements govern FPL's Transmission  
21 operation and maintenance of the BES. NERC's purpose for implementing these  
22 standards is to ensure the provision of reliable electric service while allowing for  
23 planned and unplanned contingencies. Compliance with these enforceable



1 standards and requirements incrementally increases both capital and O&M  
2 expenditures for new and existing assets, the institution of enhanced processes  
3 and related training. Additionally, new NERC CIP standards, dealing with cyber  
4 security of the BES, are requiring significant incremental resources to protect  
5 FPL's most critical transmission assets from malicious cyber attack. NERC also  
6 imposes initiatives, for example, the recent Facilities Ratings, which further  
7 impacts the resource requirements of the Transmission business unit. For  
8 example, NERC's Facilities Rating Alert involves verification of transmission  
9 line compliance with NERC's method of determining electrical ratings. FPL is  
10 contracting aircraft to fly 6,721 miles of transmission lines from 2011 through  
11 2013 while utilizing Light Detection and Ranging ("LiDAR") technology to  
12 capture the actual location of the lines. Conflicts identified from the LiDAR  
13 assessment are followed up to verify any NERC defined discrepancies. Should  
14 any NERC defined discrepancies be verified, FPL has one year, from the date of  
15 identification, to remediate. The projected incremental cost for this remediation  
16 through 2014 is \$26 million.

17  
18 These mandatory reliability measures, administrative requirements, associated  
19 processes and required training associated with compliance to NERC Reliability  
20 Standards place an ongoing and incremental resource impact on Transmission  
21 which will continue to evolve as NERC's compliance enforcement program  
22 grows.

23

1 **V. TRANSMISSION O&M EXPENSE**

2

3 **Q. Comparing the 2013 Test Year to the 2012 Prior Year, are there any**  
4 **accounts in which the change to Transmission’s non-fuel O&M expenses**  
5 **exceeds the threshold defined in MFR C-8?**

6 A. No. Transmission has no accounts where the change in non-fuel expenses  
7 exceeds the threshold as defined on MFR C-8.

8

9 **Q. What are some of the major components associated with Transmission O&M**  
10 **expense actual and projected costs?**

11 A. In order to maintain FPL’s high level of reliable service while at the same time  
12 addressing aging infrastructure, Transmission engages in a number of initiatives  
13 which impact Transmission O&M expenses. These initiatives generally fall into  
14 the following categories:

15

- 16 • **Enhanced Transmission and Substation Maintenance and Condition**  
17 **Assessment Activities:** As transmission and substation facilities age, the  
18 maintenance costs increase. In order to maximize the life of major  
19 transmission and substation equipment, proper and timely maintenance is  
20 required. Transmission’s Condition Assessment Program uses risk  
21 assessments, life-cycle projections and predictive techniques to prioritize  
22 maintenance activities and equipment repair on an appropriate schedule to  
23 extend the life of the equipment. Without this program, FPL’s costs would be

1 greater because equipment replacement costs are higher than life extension  
2 costs.

3

4 • **System Control Center:** SCC operations require around the clock support of  
5 major computer systems, complex technical applications, infrastructure and a  
6 team of control center operators and computer systems support personnel.  
7 The SCC operators are required to have certification from the NERC and  
8 annual training is required as part of the NERC operator certification. The  
9 SCC computer system support personnel are highly skilled in power system  
10 operation tools, infrastructure support and NERC CIP requirements.

11

12 • **Regulatory:** Regulatory commitments include compliance oversight and  
13 computer enhancements, vegetation management programs, training  
14 certification and re-certification programs, and storm hardening and pole  
15 inspection programs.

16 **Q. How do FPL's projected 2013 O&M expenses for the Transmission**  
17 **functional area compare to the Commission Benchmark (MFR C-41; using**  
18 **the 2010 rate case decision adjusted for inflation and customer growth)?**

19 A. FPL's projected 2013 O&M expenses for the Transmission functional area are  
20 below the Commission Benchmark. FPL's O&M expenses for the Transmission  
21 functional area result from aggressively managing operating cost.

22

1 **VI. TRANSMISSION CAPITAL EXPENDITURES**

2

3 **Q. What are Transmission's capital expenditures for 2013.**

4 A. Transmission's capital expenditures for the 2013 test year are projected to be  
5 \$183 million.

6 **Q. What are the major cost drivers for Transmission's capital expenditures?**

7 A. The major cost drivers associated with Transmission's capital expenditures are:

8

- 9 • **Infrastructure replacement refurbishment and reliability, \$53 million:** As  
10 substation equipment such as transformers, breakers, capacitor banks and  
11 other associated equipment approach the end of their useful life, FPL  
12 optimizes the replacement process with respect to interruption avoidance,  
13 resource allocation, and asset utilization. Replacement and refurbishment of  
14 substation equipment will minimize service interruptions to customers. The  
15 opportunities to improve transmission line reliability are identified through an  
16 analysis of existing system performance. Based on the analysis, reliability  
17 improvement projects are developed to reduce the major cause of poor  
18 reliability on the worst performing facilities.

19

20 The Substation Reliability Improvement program uses innovative technology  
21 and systems upgrades to enhance and improve the reliability experienced by  
22 our customers and simultaneously reduces the reliability exposure of our  
23 critical multi-million dollar transformer fleet. Through this program,

1           imminent issues are either identified early to preempt occurrence of an event,  
2           or in the occurrence of an event, the upgrades significantly improve  
3           restoration time and thereby reduce customer outage and dissatisfaction.

- 4  
5           • **Projects to meet transmission system requirements, \$35 million:** While  
6           load growth has slowed recently, over the next several years load is forecasted  
7           to increase again. NERC reliability standards mandate minimum  
8           requirements to accommodate system load growth. To meet these  
9           requirements, FPL has developed a phased-in plan to expand facilities and add  
10          new capacity through system expansion requiring capital expenditures in 2013  
11          of \$35 million, \$29 million of which is the Bobwhite-Manatee 230 kV Line,  
12          as described below.

- 13           ○ **Bobwhite-Manatee 230 kV Line, \$29 million:** Additional capability  
14           of the transmission network serving the Southwest area is needed to  
15           comply with NERC standards and provide transmission customer  
16           service connection requests. This project was subject to the Florida  
17           Transmission Line Siting Act guidelines, which provides for  
18           certification of electrical transmission lines which are 230 kV or  
19           larger; cross a county line; and are 15 miles or longer. Prior to  
20           issuance of a corridor certification, the Department of Environmental  
21           Protection, Fish and Wildlife Conservation Commission, Department  
22           of Community Affairs, Public Service Commission, local  
23           governments, water management districts, and regional planning

1 councils through the jurisdiction in which the corridor would pass are  
2 required to assess the potential effects of the proposed transmission  
3 lines to ensure through available and reasonable methods that the  
4 location of transmission line corridors and construction and  
5 maintenance of transmission lines will produce minimal adverse  
6 effects on the environment and public health, safety, and welfare.

7  
8 Bobwhite-Manatee was certified by the Siting Board (Governor and  
9 Cabinet) on November 6, 2008. This project will improve the  
10 reliability as well as serve local and wholesale transmission customers  
11 in the Manatee-Sarasota area. The total cost of the project is estimated  
12 at \$47.6 million, \$29 million in the test year, and it is scheduled to be  
13 completed in 2014.

- 14
- 15 • **FPSC mandated programs, \$31 million:** The transmission infrastructure  
16 requires refurbishment to keep the facilities serviceable and to maintain  
17 reliability. The replacement of all wooden transmission structures over the  
18 next 25 – 30 years is in progress to address Transmission’s storm hardening.  
19 Inspections of transmission facilities through reliability programs or following  
20 an outage event have identified the need for follow-up refurbishment work.  
21 These refurbishments are major cost drivers which involve all types of  
22 components associated with the transmission system such as cross arms,  
23 insulators, overhead ground wires, poles and splices with a capital expenditure

1 of \$26 million in 2013. In addition, in order to maintain our long term  
2 hardening goal, capital expenditures of \$2.0 million to replace wooden  
3 transmission structures and \$1.7 million to replace ceramic post insulators on  
4 concrete poles are projected for 2013. Capital expenditures of \$0.8 million in  
5 2013 are projected for substation insulator replacement to reduce failures due  
6 to windblown salt and other contaminants.

- 7
- 8 • **Projects to meet distribution system requirements, \$23 million:** As part of  
9 its annual capacity planning process, FPL examines existing and projected  
10 loading conditions and evaluates the need for additional distribution  
11 substations, expansion and/or modification of existing distribution substations,  
12 and the need for additional feeders to ensure that increased capacity  
13 requirements are met and reliable electric service is maintained. FPL's plans  
14 for 2013 may include the site preparation of one new distribution substation,  
15 increasing capacity and/or modifying 11 existing distribution substations, and  
16 adding six new feeders.

- 17
- 18 • **Projects resulting from revisions to FERC/NERC standards, \$19 million:**  
19 These projects are improvements to FPL's system to meet NERC and FERC  
20 standards in addition to projects planned to meet transmission system  
21 requirements. They include protection redundancy, Digital Fault Recorders,  
22 Breaker/Bus Rating and Coupling Capacitor Voltage Transformer

1 replacements. They also include projects resulting from the recent NERC  
2 initiative Facilities Rating alerts previously discussed.

3  
4 • **Projects related to technology upgrades to FPL's SCC, \$8 million:**

5 Technology capital budget and plan is driven by three main factors: (1)  
6 replacement and/or upgrade of technology components for FPL's SCC due to  
7 obsolescence or end-of-life; (2) major technology upgrades to add or improve  
8 functionality for SCC applications; infrastructure, and associated  
9 communication systems and networks; and (3) other technology projects that  
10 support the business unit mission in improving its operational efficiency. The  
11 technology budget for 2013 includes the following major projects: (1) SCC  
12 equipment replacements and/or upgrades due to end-of-life (e.g., network  
13 infrastructure equipment and application servers); (2) replacement for the Unit  
14 Commitment application; (3) cyber security enhancements; and (4) the  
15 conversion of the substation communications infrastructure from a Frame  
16 Relay technology to either the Multiprotocol Label switching or fiber optic  
17 technology.

18  
19 • **Transmission 500 kV System Program, \$8 million**

20 FPL will continue its reliability initiatives on the 500 kV transmission line  
21 system. Replacement of insulators and vibration spacer-damper systems are  
22 planned for 2013 with a projected expenditure of \$4.4 million. Replacement  
23 of structures and structural components are also planned for 2013 with a



1           projected expenditure of \$3.6 million. FPL requires a reliable 500 kV system  
2           for bulk transmission power flow within its service area and to meet  
3           regulatory commitments and maintain transmission grid stability. These  
4           replacements are part of FPL's ongoing 500 kV reliability plan which is based  
5           on the previously described Condition Assessment Process.

6

7           • **Non-Reimbursable Relocations, \$6 million:** Forced relocations are the result  
8           of siting transmission facilities in right-of-ways where FPL does not have a  
9           compensable interest, most common being road rights-of-way. FPL has the  
10          legal obligation to State and county governments to relocate facilities located  
11          in road right-of-way when these facilities are in conflict with proposed road  
12          improvements. Failure to execute projects as scheduled may result in road  
13          contractor delay claims.

14   **Q.    Please summarize Transmission's accomplishments.**

15   A.    In summary, Transmission's accomplishments and operations are an example to  
16          the industry. We work hard every day to maintain the current high level of  
17          reliability our customers expect and deserve while promoting compliance with all  
18          applicable regulatory commitments. We have maintained this excellent record  
19          while carefully selecting where we must expand, replace, and refurbish the  
20          transmission system for the benefit of our customers now and in the future.  
21          Finally, we have accomplished the results and implemented the initiatives,  
22          processes and procedures described in my testimony while minimizing the costs  
23          for our customers.

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

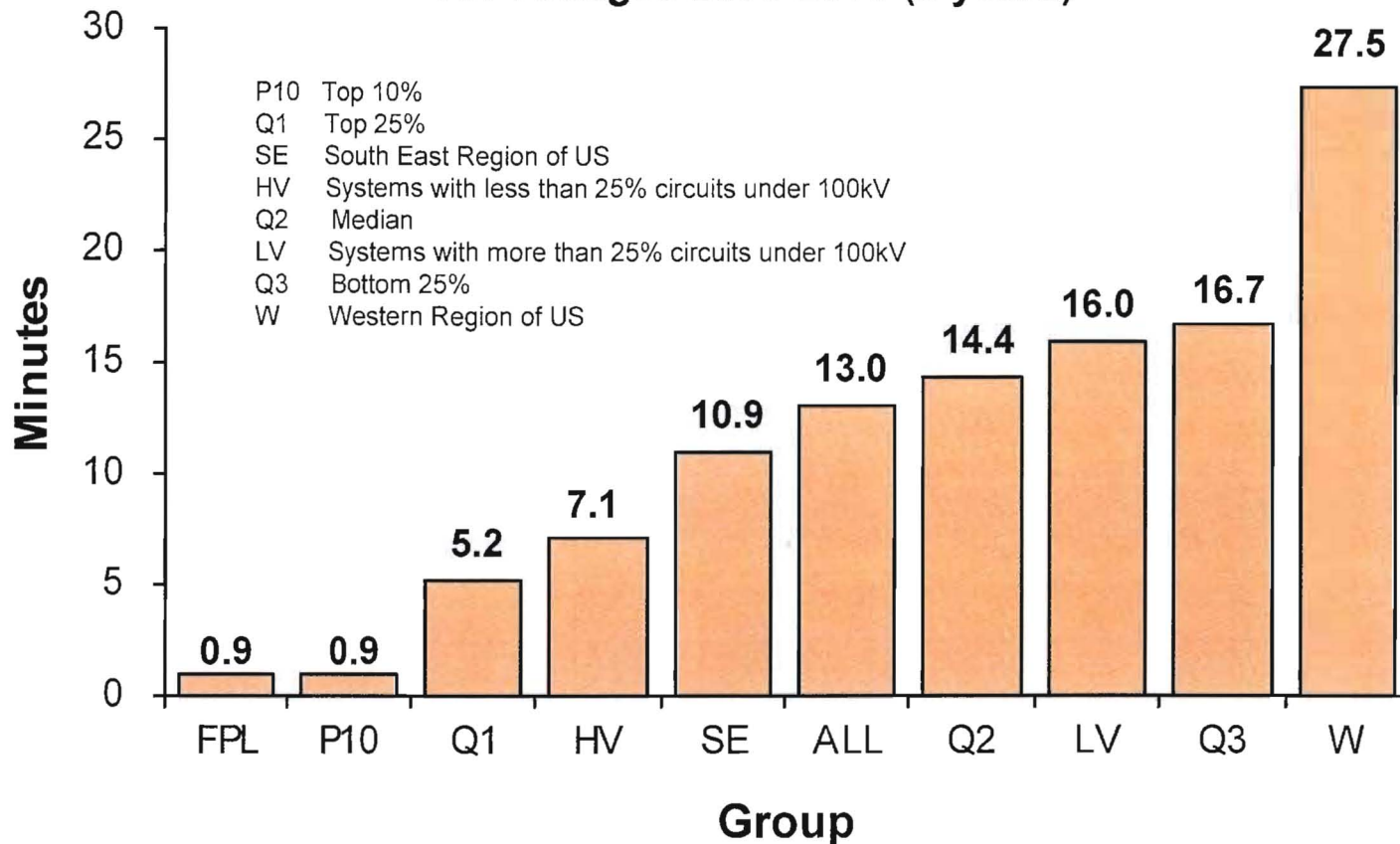
2 A. Yes.

**MFRs SPONSORED AND CO-SPONSORED BY  
MANUEL MIRANDA**

<b>MFR #</b>	<b>PERIOD</b>	<b>TITLE</b>
<b>CO-SPONSOR</b>		
B-13	Test	Construction Work in Progress
B-15	Test Prior	Property Held for Future Use – 13 Month Average
C-8	Prior Test	Detail of Changes in Expenses
C-15	Test	Industry Association Dues
C-16	Prior Test	Outside Professional Services
C-34	Historic 5 years	Statistical Information
C-41	Test Benchmark	O&M Benchmark Variance by Function

The FPL Transmission SAIDI compares favorably in recent industry benchmarking studies.

**2011 SGS Transmission Reliability Benchmarking Study  
All Voltages 2008-2010 (3 years)**



For industry comparisons, SAIDI is calculated for outages greater than or equal to five minutes versus FPSC definition of SAIDI of greater than or equal to one minute.