

**BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 160021-EI
FLORIDA POWER & LIGHT COMPANY
AND SUBSIDIARIES**

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

DIRECT TESTIMONY & EXHIBITS OF:

MITCHELL GOLDSTEIN

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF MITCHELL GOLDSTEIN

DOCKET NO. 160021-EI

MARCH 15, 2016

TABLE OF CONTENTS

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

I. INTRODUCTION 3

II. BACKGROUND ON FPL’S NUCLEAR ENERGY OPERATIONS..... 6

III. FPL’S NUCLEAR PLANT PERFORMANCE 7

IV. CAPITAL EXPENDITURES FOR FPL’S NUCLEAR BUSINESS UNIT..... 17

1 **I. INTRODUCTION**

2

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

4 A. My name is Mitchell Goldstein. My work address is 15430 Endeavor Dr.
5 Jupiter, Florida 33478.

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
8 “Company”) and NextEra Energy Resources as Vice President of Finance for
9 the Nuclear Fleet.

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

11 A. I am responsible for the overall financial management of the NextEra Nuclear
12 Fleet, including FPL’s four nuclear units at two sites. This includes oversight
13 for the fleet’s:

- 14 • strategic planning process, which sets priorities for the next 3 years;
- 15 • annual planning process, which establishes expense, capital and
16 inventory budgets and operating targets for each site and the fleet;
- 17 • ongoing reporting of actual financial results, variance analyses and
18 future forecasts; and
- 19 • continuous improvement program, which focuses on process changes
20 to yield better safety, reliability and efficiency.

1 **Q. Please describe your educational background and professional**
2 **experience.**

3 A. I earned my Bachelor's Degree in Science, magna cum laude, from the
4 Wharton School of the University of Pennsylvania. I hold a Master's of
5 Business Administration, with distinction, from Harvard Business School.

6

7 I have nearly 30 years of business experience, separated into two main parts. I
8 spent 12 years as a strategy consultant, becoming a Partner with Mercer
9 Management Consulting. My consulting practice was heavily focused on
10 operational strategies and business improvement programs. Since 1995, I've
11 held several financial and strategy leadership roles, including Chief Financial
12 Officer at two public companies. Those roles have included responsibility for
13 the overall financial leadership and improvement for each company. I joined
14 FPL in 2011 in my current role.

15

16 My experience at other companies showed that it was often possible to
17 improve quality, reliability and safety, as a means of improving productivity.

18 This also proved to be true at FPL, where through process changes we were
19 able to improve our performance on the key measures of safety and reliability,
20 and this also enabled us to reduce our overall cost.

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

22 A. Yes, I am sponsoring the following exhibits:

- 1 • MG-1 Listing of MFRs and Schedules Sponsored in Whole or in Part
2 by Mitchell Goldstein
- 3 • MG-2 NRC Performance Indicators
- 4 • MG-3 NRC Inspection Findings
- 5 • MG-4 NRC Regulatory Status
- 6 • MG-5 Nuclear Performance Metrics

7 **Q. Are you sponsoring or co-sponsoring any Minimum Filing Requirements**
8 **(“MFRs”) in this case?**

9 A. Yes, Exhibit MG-1 contains a listing of the MFR schedules that I am
10 sponsoring or co-sponsoring.

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

12 A. The purpose of my testimony is to: (1) provide an overview of FPL’s nuclear
13 operations; (2) describe how FPL’s nuclear fleet performance has yielded
14 significant benefits to FPL customers; (3) discuss FPL’s changes made to
15 improve performance since the 2012 rate case; and (4) discuss the O&M
16 expenditures for the 2017 Test Year and the 2018 Subsequent Year and the
17 capital expenditures from 2014 through 2018 for FPL’s nuclear operations.

18 **Q. Please summarize your testimony.**

19 A. FPL’s nuclear power plants are a source of safe, reliable, clean and cost
20 effective base-load energy for FPL’s customers. These plants are a key
21 component of FPL’s energy mix that provide significant value to FPL’s
22 customers in terms of fuel savings, reliability, enhanced system fuel diversity
23 and minimization of greenhouse gas (“GHG”) emissions. My testimony

1 summarizes FPL's efforts to help ensure the continued safe, reliable, clean
2 and cost-effective operation of FPL's nuclear power plants to meet the
3 significant operational and regulatory requirements for these plants.

4

5 **II. BACKGROUND ON FPL'S NUCLEAR ENERGY OPERATIONS**

6

7 **Q. Please describe FPL's nuclear plants.**

8 A. FPL's long and successful involvement with nuclear power started in the mid-
9 1960s with the first order for nuclear generation in the south. FPL's plans to
10 build nuclear units at Turkey Point were announced in 1965, and the first
11 nuclear unit achieved commercial operation in 1972. FPL is currently
12 licensed by the Nuclear Regulatory Commission ("NRC") to operate the St.
13 Lucie Nuclear Plant, Units 1 and 2, and the Turkey Point Nuclear Plant, Units
14 3 and 4. Turkey Point Units 3 and 4 are pressurized water reactors designed
15 by Westinghouse. Unit 3 commenced commercial operation in 1972, and
16 Unit 4 did so in 1973. St. Lucie Units 1 and 2 are pressurized water reactors
17 designed by Combustion Engineering (now owned by Westinghouse). Unit 1
18 went into commercial operation in 1976, and Unit 2 did so in 1983. The
19 investment to build these units in the 1960s, 1970s, and 1980s has yielded
20 significant value to FPL's customers in terms of safe, reliable, clean, cost-
21 effective, base-load energy.

1 **Q. Describe the ownership structure for FPL's nuclear units.**

2 A. FPL owns 100 percent of Turkey Point Units 3 and 4 and St. Lucie Unit 1.
3 FPL owns 85.10449 percent of St. Lucie Unit 2. The balance of St. Lucie
4 Unit 2 is owned by the Florida Municipal Power Agency, which owns 8.806
5 percent, and the Orlando Utilities Commission, which owns 6.08951 percent.

6 **Q. How long are FPL's nuclear units currently licensed to operate?**

7 A. In the late 1990s, FPL had the foresight to begin the process to renew the
8 operating licenses so that the benefits of those nuclear units could continue
9 well into the 21st century. In June 2002, FPL received renewed operating
10 licenses from the NRC for Turkey Point Units 3 and 4, and in October 2003,
11 FPL received renewed operating licenses from the NRC for St. Lucie Units 1
12 and 2. The renewed licenses give FPL the authority to operate each unit for
13 20 years past the original license expiration date. Accordingly, the current
14 license expiration dates are as follows: for Turkey Point Unit 3, 2032; for
15 Turkey Point Unit 4, 2033; for St. Lucie Unit 1, 2036; and for St. Lucie Unit
16 2, 2043.

17

18 **III. FPL'S NUCLEAR PLANT PERFORMANCE**

19

20 **Q. What metrics are used by FPL to measure the performance of FPL's**
21 **nuclear plants?**

22 A. FPL uses many metrics to measure the performance of its nuclear plants,
23 including nuclear safety, regulatory performance (as measured by the NRC),

1 overall plant performance (as measured by an objective numerical index
2 maintained by the Institute of Nuclear Power Operations (“INPO”)), personnel
3 safety, and reliability. INPO is an organization that promotes the highest
4 levels of safety and reliability by promoting excellence in the operation of
5 nuclear electric generating plants. FPL is a member of INPO.

6 **Q. What does FPL consider the most important metric in measuring the**
7 **performance of its nuclear fleet?**

8 A. Nuclear safety is by far the most important aspect of owning and operating
9 FPL’s nuclear fleet. FPL takes its commitment to protect the health and safety
10 of the public very seriously. The nuclear safety aspects of FPL’s nuclear
11 operations are comprehensively regulated by the NRC, the Department of
12 Homeland Security (the Federal Emergency Management Agency), the
13 Department of Energy (Office of Nuclear Energy) and the Environmental
14 Protection Agency.

15 **Q. How does the NRC measure FPL’s nuclear safety record?**

16 A. The NRC maintains and tracks a set of performance indicators as objective
17 measures of nuclear safety performance for commercial U.S. nuclear plants.
18 These indicators monitor the performance of initiating events, safety systems,
19 fission product barrier integrity, emergency preparedness, occupational and
20 public radiation safety, and physical protection (security). As shown in
21 Exhibit MG-2, for all four FPL’s nuclear units are in the “green” band of all
22 NRC Performance Indicators in 2015, indicating the best or highest rating for
23 these indicators of nuclear safety performance. As shown in Exhibit MG-3,

1 the NRC inspection findings for 2015 were also “green,” again indicating the
2 best or highest rating for these indicators of nuclear safety performance.

3 **Q. How do FPL’s nuclear plants compare to the remainder of the industry in**
4 **terms of the NRC performance system?**

5 A. Based on the NRC’s Performance Indicators, FPL’s plants compare favorably
6 with the remainder of the U.S. nuclear industry. The NRC uses its
7 Performance Indicators and inspection activities to determine the appropriate
8 level of agency oversight and response, including the need for supplemental
9 inspections, senior management meetings and regulatory actions.

10

11 All of the U.S. nuclear plants are listed in the NRC’s Action Matrix, which
12 categorizes each plant into one of five regulatory status columns based on
13 overall regulatory performance. The five regulatory columns in order of best-
14 to-worst regulatory performance are: (1) licensee response; (2) regulatory
15 response; (3) degraded cornerstone; (4) multiple/repetitive degraded
16 cornerstone; and (5) unacceptable performance.

17

18 Approximately 8 percent of the 100 nuclear units in the United States are
19 characterized by the NRC as having a level of plant performance requiring
20 increased NRC regulatory oversight (in columns 2 through 5). Of those
21 plants: (1) the “regulatory response” category includes five plants having at
22 least one regulatory finding of low to moderate safety significance in the past
23 12 months; and (2) the “multiple/repetitive degraded cornerstone” category

1 includes three plants having multiple regulatory findings of low to moderate
2 safety significance, a regulatory finding of substantial safety significance, or a
3 finding of high safety significance (or some combination of these), usually
4 coupled with inadequate corrective actions.

5
6 As illustrated by Exhibit MG-4, none of FPL's units fall into categories
7 requiring increased regulatory oversight. Rather, because of FPL's strong
8 regulatory performance in 2015, FPL's nuclear units are in the "licensee
9 response" column of the NRC's Action Matrix, which results in the normal
10 baseline inspection program. The NRC's regulatory structure places a
11 premium on FPL's ability to identify and correct problems. Degraded nuclear
12 safety performance can result in increased NRC inspection activity, which, in
13 turn, would require increased management attention to these NRC inspections
14 and increased O&M costs. In summary, FPL is proud of its nuclear
15 performance, both from a safety and regulatory standpoint. However, this
16 performance cannot be sustained without continued investment in our nuclear
17 plants and our people.

18 **Q. Please describe the operational performance of FPL's nuclear fleet as**
19 **measured by the numerical index maintained by INPO.**

20 A. The operational performance of FPL's nuclear fleet reflects a strong nuclear
21 safety and reliability record. FPL measures its nuclear plant performance
22 using the INPO index. The INPO index is a metric of nuclear plant safety and
23 reliability widely used in the U.S. nuclear power industry. In 2015, the INPO

1 index was calculated by summing weighted values of the following key
2 indicators:

- 3 1. Unit Capability Factor (5 percent);
- 4 2. Forced Loss Rate (7.5 percent);
- 5 3. Forced Loss Events (7.5 percent);
- 6 4. Unavailability of High Pressure Safety Injection System (10 percent);
- 7 5. Unavailability of Auxiliary Feedwater System (10 percent);
- 8 6. Unavailability of Emergency AC Power System (Site Average) (10
9 percent);
- 10 7. Unplanned Reactor Trips (10 percent);
- 11 8. Collective Radiation Exposure (10 percent);
- 12 9. Nuclear Fuel Reliability/Fuel Rod Defects (10 percent);
- 13 10. Chemistry Effectiveness Indicator (10 percent);
- 14 11. Shut Down Cooling Availability (5 percent); and
- 15 12. Industrial Safety (5 percent).

16
17 Since 2012 FPL has taken steps to improve its overall performance, which
18 resulted in improved INPO Index, generation and cost per megawatt hour
19 (“MWh”). As illustrated by the Nuclear Performance Metrics in Exhibit MG-
20 5, these metrics show a substantial improvement from 2012, which
21 corresponds to increased generation and improved reliability. As with the
22 NRC’s metrics, however, these improvements cannot be sustained without
23 continued investment in our nuclear plants and our people.

1 **Q. What changes has FPL made since 2012 in order to achieve this improved**
2 **performance for the nuclear fleet?**

3 A. FPL's top priority remains to provide safe and reliable generation. FPL has
4 maintained the safety and reliability of its nuclear fleet by following its
5 Nuclear Excellence Model ("NEM"), which is the foundation of its
6 commitment to achieve and sustain excellence in all aspects of its nuclear
7 operations.

8
9 In support of its NEM, FPL implemented its Self-Improving Culture/Learning
10 Organization ("SIC/LO"). Under the NEM SIC/LO, FPL benchmarked
11 performance against its peers to identify the biggest opportunities for
12 improvement. Based on this analysis, FPL adopted best practices from the
13 fleet and across the industry and made several changes that have resulted in
14 improved performance among most key metrics as mentioned above. The best
15 practices FPL implemented included:

- 16 • Standardization of nuclear fleet procedures, qualification, training and the
17 Corrective Action Program. Standardization leverages best practices and
18 ensures consistency within the fleet.
- 19 • Centralization of outage planning, engineering and collaborating with non-
20 nuclear functions where possible. Centralization ensures FPL maximizes
21 the benefit by providing the fleet the ease of obtaining technical expertise
22 in one location.

1 • Improving practices with contractor management, maintenance and work
2 management.

3 Other specific practices undertaken by FPL to improve performance and
4 control costs are addressed later in my testimony.

5 **Q. Please describe the personnel safety performance of FPL’s nuclear fleet.**

6 A. FPL measures its nuclear fleet personnel safety performance using an INPO
7 performance indicator known as the Total Industrial Safety Accident
8 (“TISA”) rate. The TISA rate measures the injury rate for all employees and
9 contractors that work at our nuclear sites, and it is based on the total number
10 of injuries per 200,000 man-hours worked over an 18 month period. An
11 injury rate is an effective measure of personnel safety performance because it
12 takes into account the amount of work undertaken during the reporting period
13 in man-hours. The current TISA rate over the 18 month period ending
14 December 31, 2015 for the nuclear fleet is 0.02 (*i.e.*, 1 injury ÷ 11,254,221
15 man-hours worked X 200,000 man-hours). The FPL fleet ranks Top Quartile
16 in the industry for this indicator. The injuries are conventional industrial in
17 nature and not radiological. The TISA rate includes injuries that would
18 involve radiological consequences, but there have been none. FPL is
19 committed to conducting its nuclear operations in a safe and responsible
20 manner that avoids injuries of all kinds and promotes the physical safety and
21 well being of its employees.

1 **Q. Please summarize the benefits to FPL’s customers of FPL’s nuclear**
2 **generation.**

3 A. FPL’s nuclear generating assets are critical in maintaining electric system
4 reliability, achieving fuel cost savings, enhancing system fuel diversity and
5 achieving reductions in FPL’s system emissions of GHG, sulfur dioxide,
6 nitrogen oxides and particulate matter. No one can dispute that these are
7 clear, significant direct benefits to FPL’s customers. As discussed below,
8 there are also indirect benefits that serve as a value add to the overall
9 communities in which we serve.

10

11 In 2015, the Nuclear Energy Institute (“NEI”) released a study finding that
12 because FPL’s nuclear plants operate at high capacity factors and do not emit
13 greenhouse gases, they prevent the release of more than 15 million tons of
14 carbon dioxide annually, which is the equivalent of taking nearly 3 million
15 cars off the road every year.

16

17 Beyond those direct benefits, the NEI study also found that FPL’s nuclear
18 fleet delivers substantial indirect benefits to Florida. The study quantified the
19 economic benefits delivered by our nuclear operations. Specifically, the study
20 highlights that FPL’s nuclear operations support billions of dollars in
21 economic activity annually. Every year, FPL’s nuclear operations generate a
22 combined \$1.2 billion of economic activity in the counties around the Turkey
23 Point and St. Lucie facilities. In addition, FPL’s nuclear operations generate

1 \$200 million in economic activity beyond those counties. So, the total annual
2 statewide impact of economic activity associated with FPL's nuclear units is
3 \$1.4 billion. In addition, FPL nuclear operations contribute \$70 million
4 annually in local and state taxes. More than 5,800 direct and secondary jobs
5 in Florida are supported by FPL's nuclear energy operations.

6 **Q. Please describe the fuel cost savings nuclear generation provides to FPL's**
7 **customers.**

8 A. FPL's nuclear generation has resulted in over \$17 billion in fuel savings from
9 January 2000 through 2015. This translates into direct savings for FPL
10 customers as these cost savings are passed directly to the customers through
11 lower Fuel and Purchased Power Cost Recovery Clause charges.

12 **Q. Are FPL's nuclear units part of a larger fleet?**

13 A. Yes. FPL and its affiliates collectively comprise the fourth largest nuclear
14 operator in the United States, owning and operating eight nuclear units at five
15 locations. FPL's affiliates own interests in and operate the Duane Arnold
16 Energy Center in Iowa, the Point Beach Nuclear Plant, Units 1 and 2, in
17 Wisconsin, and the Seabrook Station in New Hampshire.

18 **Q. Please describe the benefits to FPL's customers of being affiliated with a**
19 **larger nuclear fleet.**

20 A. There are important benefits and synergies to FPL and its customers from the
21 affiliation with a larger nuclear fleet. I will focus on six such benefits. All of
22 these benefits to FPL and its customers and the local communities in Florida

1 are not available to the operator of a smaller nuclear fleet or a single nuclear
2 site.

3

4 First, FPL is able to use operational experience from its affiliate plants and
5 incorporate lessons learned to the FPL nuclear fleet. By doing so, FPL has
6 made improvements that have increased equipment reliability, which helps
7 prevent events from occurring, resulting in improved nuclear safety and plant
8 reliability. FPL also receives operational experience in occupational health
9 and safety matters that improve plant industrial and radiological safety.

10

11 Second, FPL continuously pursues standardization of programs and
12 procedures, where applicable. This allows the sharing of data on best
13 practices to the benefit of FPL's nuclear fleet, improving nuclear safety,
14 efficiencies, and reducing costs.

15

16 Third, FPL is able to leverage contracts for goods and services across the
17 nuclear fleet. This results in more favorable pricing and contract terms for its
18 nuclear fleet.

19

20 Fourth, FPL is able to maintain and have access to a staff of subject matter
21 experts to address specific technical or regulatory issues that may arise at its
22 nuclear fleet. It is increasingly difficult and expensive for smaller nuclear
23 operators or operators of single nuclear units to retain such in-house expertise.

1 Fifth, in a similar manner, each of FPL's and its affiliates' nuclear plants
2 maintains an inventory of spare parts. This enables plants to share critical
3 spare parts in some circumstances.

4
5 Sixth, with the increased demand for skills in the nuclear industry and the
6 increase in retirements associated with an aging workforce, recruiting and
7 retaining talent has become a significant challenge. One of the key benefits of
8 operating a large nuclear fleet is the existence of numerous business
9 opportunities for employees to pursue career advancement in our nuclear
10 program in different jobs at different locations.

11

12 **IV. CAPITAL EXPENDITURES FOR FPL'S NUCLEAR BUSINESS UNIT**

13

14 **Q. Please summarize the principal drivers of capital expenditures for FPL's**
15 **Nuclear Business Unit.**

16 A. There are two principal drivers of these capital expenditures; meeting
17 regulatory requirements and sustaining long term operations of the nuclear
18 units. To accomplish these goals, FPL invests in equipment to enhance
19 nuclear safety and improve equipment reliability. These investments will
20 allow FPL to maximize fuel savings, enhance system fuel diversity and
21 provide for the safe and reliable operation of its nuclear units through their
22 renewed license terms.

23

1 Meeting Regulatory Requirements

2

3 **Q. Please explain the projects required to meet NRC requirements that FPL**
4 **anticipates implementing through 2018.**

5 A. FPL plans to implement projects to meet NRC requirements, such as the fire
6 protection plan, containment sump performance, and regulatory commitments
7 made in order to obtain license renewal for St. Lucie and Turkey Point.

8 **Q. Please describe FPL's efforts to meet NRC requirements for the fire**
9 **protection plan.**

10 A. FPL will implement modifications necessary to comply with requirements that
11 licensed nuclear units have a fire protection plan that ensures structures,
12 systems and components important to safety be designed and located to
13 minimize the probability and effect of fires and explosions. The fire
14 protection plan is necessary to comply with 10 Code of Federal Regulations
15 ("CFR") 50 Appendix R.

16

17 Compliance with 10 CFR 50 Appendix R represents a significant expenditure
18 of resources. It has resulted in increased regulatory enforcement and rule
19 "refinements." However, 10 CFR 50.48(c) allows licensees to voluntarily
20 comply with risk-informed performance-based fire protection in National Fire
21 Protection Association 805 ("NFPA 805") as an alternative to complying with
22 Appendix R or the requirements in the licensee's fire protection license
23 conditions. FPL has determined that a transition to NFPA 805 is beneficial.

1 Use of NFPA 805 will resolve outstanding fire protection issues as well as
2 clearly define the basis for the fire protection program. The advantages of
3 using NFPA 805 are:

- 4 • a risk-informed performance based licensing basis;
- 5 • a well-defined stable licensing basis that is accepted by the NRC;
- 6 • tools to allow risk informed performance base changes in the future;
- 7 and
- 8 • enforcement discretion for issues found during the transition.

9

10 Completion of the NFPA 805 projects results in full compliance with 10 CFR
11 50.48(c) for transitioning stations. This includes all supporting engineering
12 evaluations, procedures, training and modifications. FPL estimates the cost of
13 these modifications to be approximately \$68 million in capital expenditures
14 from 2014 through 2018, of which \$40 million will be incurred in 2016
15 through 2018.

16 **Q. Please describe FPL's efforts to meet NRC requirements for the**
17 **Containment Sump performance.**

18 A. Nuclear power plants are required by 10 CFR 50.46 to have an emergency
19 core cooling system to mitigate various design basis accidents. The NRC
20 identified a potential susceptibility of Pressurized Water Reactor ("PWR")
21 recirculation sump screens and associated flow paths to debris blockage
22 during loss-of-coolant accidents that require recirculation operation. This
23 issue, classified as Generic Safety Issue 191, might affect the long-term

1 operation of the emergency core cooling system or containment spray system.
2 The accumulation of debris has the potential to impede successful operation of
3 the emergency core cooling system and containment spray system pumps.
4 Debris can also pass through sump screens and affect equipment (such as
5 valves, pumps, and nuclear fuel assemblies) downstream of the strainers.
6 NRC Generic Letter (“GL”) 2004-02 “Potential Impact of Debris Blockage on
7 Emergency Recirculation during Design Basis Accidents at Pressurized-Water
8 Reactors” requires all operators of PWRs including FPL to evaluate and take
9 necessary actions to ensure system functionality.

10

11 As a result, St. Lucie and Turkey Point were required through NRC GL 2004-
12 02 to perform a mechanistic evaluation of the recirculation functions and, as
13 appropriate, make necessary modifications to the containment sump strainers
14 and screens to ensure system functionality. FPL estimates the cost of these
15 modifications to be approximately \$29 million in capital expenditures from
16 2014 through 2018, of which \$20 million will be incurred in 2016 through
17 2018.

18 **Q. Please discuss the capital expenditures FPL must make in order to meet**
19 **NRC commitments for St. Lucie and Turkey Point license renewals.**

20 A. The NRC approved extended licenses for Turkey Point in 2002 and St. Lucie
21 in 2003, securing low-cost energy for FPL’s customers for an additional 20
22 years at each unit. As a requirement of receiving the operating license
23 extensions, FPL had to make certain commitments requiring capital

1 expenditures. The activities associated with the St. Lucie license renewal
2 include, but are not limited to, installation of equipment coatings and
3 completion of preventative maintenance optimization programs. For example,
4 St. Lucie has 24 aging-management programs with associated commitments
5 made within each program. Additionally, the NRC will undertake
6 inspections, including document reviews and visual plant inspections, to
7 determine whether St. Lucie and Turkey Point have met their commitments.
8 FPL estimates the cost of these modifications to be approximately \$43 million
9 in capital expenditures from 2014 through 2018, of which \$18 million will be
10 incurred from 2016 through 2018.

11

12 **Sustaining Long Term Operations for Nuclear Units**

13

14 **Q. Please explain the St. Lucie and Turkey Point Long Term Reliability**
15 **projects.**

16 **A.** FPL continues to implement long term equipment reliability projects that
17 address ongoing component issues as part of the day to day operations of St.
18 Lucie and Turkey Point. The primary components addressed in these projects
19 consist of replacement and refurbishment of pumps, motors, valves, breakers
20 and turbines. FPL estimates capital expenditures of \$304 million on these
21 projects from 2014 through 2018, of which \$152 million will be incurred from
22 2016 through 2018.

23

1 Additionally, St. Lucie has implemented the Reactor Coolant Pump (“RCP”)
2 Motor Refurbishment Program, which is a multi-year effort to replace and
3 refurbish the original RCP motors at St. Lucie to ensure safe and reliable
4 operation into the renewed license term. FPL estimates the cost of this
5 replacement to be approximately \$79 million in capital expenditures from
6 2014 through 2018, of which \$25 million will be incurred from 2016 through
7 2018.

8 **Q. Are FPL’s projected nuclear capital expenditures from 2014 through**
9 **2018 necessary and reasonable?**

10 A. Yes. FPL’s 2014-2018 capital expenditures include costs to implement
11 projects to meet NRC requirements and to invest in equipment to enhance
12 nuclear safety and improve equipment reliability for long term operation of
13 the plants. This investment will be necessary to ensure FPL’s nuclear
14 facilities maximize fuel savings, enhance system fuel diversity, and allow for
15 the safe and reliable operation of its nuclear units through their renewed
16 license terms.

17 **Q. Does the forecast for 2017 Test Year O&M costs for the Nuclear Business**
18 **Unit exceed the Commission’s benchmark using 2013 as the benchmark**
19 **year?**

20 A. No. FPL’s 2017 Test Year O&M for Nuclear Production does not exceed the
21 Commission’s benchmark, using adjusted 2013 as the benchmark year. In
22 fact, FPL’s 2017 Test Year O&M for Nuclear Production is less than the 2013
23 actual amount.

1 **Q. What efforts has the Nuclear Business Unit implemented to reduce O&M**
2 **costs?**

3 A. In conjunction with the initiative known internally as Project Momentum, the
4 Nuclear Business Unit also implemented the Continuous Improvement
5 Process (“CIP”), which engages employees to develop and implement
6 solutions to operate more efficiently without compromising safety. This effort
7 supports the SIC/LO, which is a core part of the NEM, and has resulted in the
8 implementation of several creative and dynamic ideas that benefit the
9 customer. Some examples include:

- 10 • Implementation of the Electronic Work Package which reduces
11 unnecessary processes and data entry for craft labor. By eliminating
12 unnecessary and time consuming administrative steps (i.e., printing,
13 assembling, preparation and close out steps for work-order packages),
14 it streamlines planning and executions, reducing overall costs to the
15 customer.
- 16 • Centralization of the outage function, which streamlined outage
17 planning and utilizes best practices to achieve milestones and
18 commitments to plan. In years past, FPL achieved outage goals less
19 than 25 percent of the time. In 2014, FPL achieved outage goals 75
20 percent of the time. Consistently achieving milestones minimizes
21 unexpected increases to costs. Additionally, achieving outage goals
22 reduces outage duration and improves the capacity factor and
23 equivalent availability factor for the nuclear fleet.

- 1 • Addition of an innovative approach to training by implementing a
2 distance learning capability, which improved training and reduced
3 travel burden and costs.
- 4 • Insourcing of work to better leverage the skills of our team throughout
5 the fleet, which demonstrates one of the benefits to being part of a
6 large nuclear fleet.

7

8 Finally, FPL has completed a fleet reorganization that resulted in reducing
9 staffing levels for the 2017 Test Year to approximately 19.5 percent below
10 2013 levels. These are just a few examples of how FPL has created benefits
11 through utilizing CIP in identifying ways to operate more efficiently and
12 create value for its customers. At the same time, safety has not been
13 negatively impacted.

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

15 **A. Yes.**

Florida Power and Light Company

**MFRs AND SCHEDULES SPONSORED AND CO-SPONSORED BY MITCHELL
GOLDSTEIN**

SOLE SPONSOR:		
F-04	Historic Subsequent Year Adjustment	NRC SAFETY CITATIONS
CO-SPONSOR:		
B-13	Test Subsequent Year Adjustment	CONSTRUCTION WORK IN PROGRESS
B-16	Prior Test Subsequent Year Adjustment	NUCLEAR FUEL BALANCES
C-08	Prior Test Subsequent Year Adjustment	DETAIL OF CHANGES IN EXPENSES
C-15	Historic Test Subsequent Year Adjustment	INDUSTRY ASSOCIATION DUES
C-16	Historic Test Subsequent Year Adjustment	OUTSIDE PROFESSIONAL SERVICES
C-43	Historic Prior Test Subsequent Year Adjustment	SECURITY COSTS
F-08	Test Subsequent Year Adjustment	ASSUMPTIONS

Docket No. 160021-EI
Listing of MFRs and Schedules Sponsored in Whole
or in Part by Mitchell Goldstein
Exhibit MG-1, Page 1 of 1

As of December 31, 2015

NRC Performance Indicators for St. Lucie and Turkey Point

	Turkey Point Unit 3	Turkey Point Unit 4	St. Lucie Unit 1	St. Lucie Unit 2
Initiating Events Cornerstone				
Unplanned Reactor Scrams per 7000 Critical Hours (Automatic and Manual)	Green	Green	Green	Green
Unplanned Reactor Scrams with Loss of Normal Heat Removal	Green	Green	Green	Green
Unplanned Scrams with Complications	Green	Green	Green	Green
Mitigating Systems Cornerstone				
Mitigating System Performance	Green	Green	Green	Green
Safety System Functional Failures	Green	Green	Green	Green
Barriers Cornerstone				
RCS Activity	Green	Green	Green	Green
RCS Leakage	Green	Green	Green	Green
Emergency Preparedness Cornerstone				
Emergency Response Organization (ERO) Drill/Exercise Performance	Green	Green	Green	Green
ERO Drill Participation	Green	Green	Green	Green
Alert and Notification System Performance	Green	Green	Green	Green
Occupational Radiation Safety Cornerstone				
Occupational Exposure Control Effectiveness	Green	Green	Green	Green
Public Radiation Safety Cornerstone				
RETS/ODCM Radiological Effluent Occurrence	Green	Green	Green	Green
Physical Protection Cornerstone				
Protected Area Security Equipment Performance Index	Green	Green	Green	Green

Acceptable Performance Licensee Response Band Green	Acceptable Performance Increased Regulatory Response Band White	Acceptable Performance Required Regulatory Response Band Yellow	Unacceptable Performance Plants Not Normally Permitted To Operate Within This Band Red
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Best ←—————→ Worst

As of December 31, 2015

NRC Inspection Findings for St. Lucie and Turkey Point

	Turkey Point Unit 3	Turkey Point Unit 4	St. Lucie Unit 1	St. Lucie Unit 2
Initiating Events	Green	Green	Green	Green
Mitigating Systems	Green	Green	Green	Green
Barriers	Green	Green	Green	Green
Emergency Preparedness	Green	Green	Green	Green
Occupational Radiation Safety	Green	Green	Green	Green
Public Radiation Safety	Green	Green	Green	Green
Physical Protection	Green	Green	Green	Green

As of December 31, 2015

NRC Regulatory Status for St. Lucie and Turkey Point

Turkey Point Unit 3	Turkey Point Unit 4	St. Lucie Unit 1	St. Lucie Unit 2
Column 1 Licensee Response	Column 1 Licensee Response	Column 1 Licensee Response	Column 1 Licensee Response

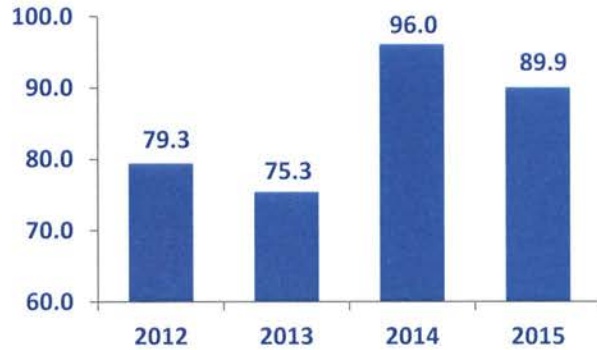


(Source: NRC Action Matrix Summary)

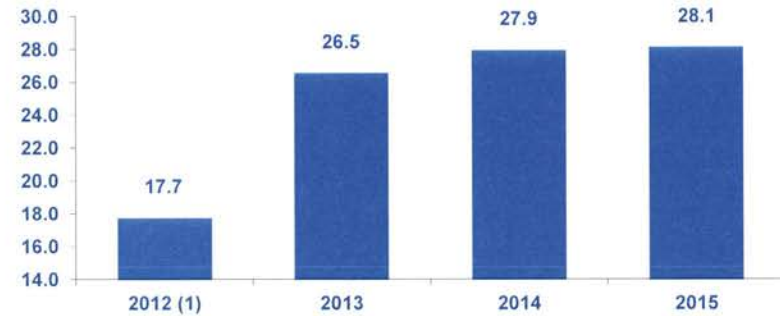
FPL Performance Indicators

INPO Index Performance

Based on 2015 INPO Index definition

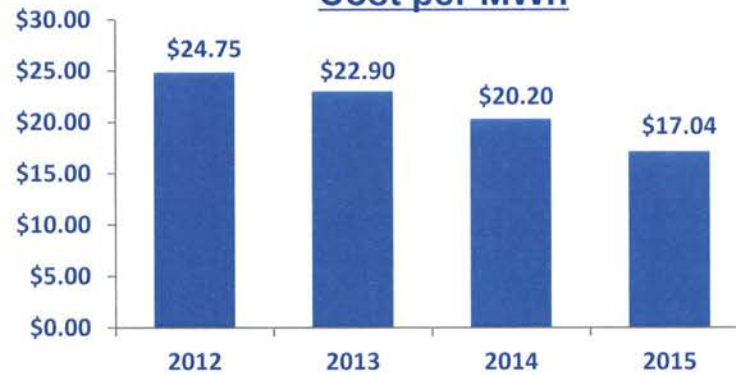


Generation (MM MWh)



(1) Extended Power Uprate project implementation.

Cost per MWh



Source: EUCG 3 year average excluding corporate support allocation.