

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**DOCKET NO. 150009-EI
FLORIDA POWER & LIGHT COMPANY**

MAY 1, 2015

**IN RE: NUCLEAR POWER PLANT COST RECOVERY
FOR THE YEAR ENDING
DECEMBER 2016**

TESTIMONY & EXHIBITS OF:

STEVEN D. SCROGGS

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **FLORIDA POWER & LIGHT COMPANY**

3 **DIRECT TESTIMONY OF STEVEN D. SCROGGS**

4 **DOCKET NO. 150009-EI**

5 **May 1, 2015**

6
7 **Q. Please state your name and business address.**

8 A. My name is Steven D. Scroggs. My business address is 700 Universe
9 Boulevard, Juno Beach, Florida 33408.

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

11 A. I am employed by Florida Power & Light Company (FPL or the Company) as
12 Senior Director, Project Development. In this position I have responsibility
13 for the development of power generation projects to meet the needs of FPL's
14 customers.

15 **Q. Have you previously provided testimony in this docket?**

16 A. Yes.

17 **Q. Are you sponsoring or co-sponsoring any exhibits in this case?**

18 A. Yes. I am sponsoring or co-sponsoring the following exhibits:

- 19 • Exhibit SDS-8, Turkey Point 6 & 7 Site Selection and Pre-construction
20 Nuclear Filing Requirement (NFR) Schedules consisting of the 2015
21 Actual/Estimated (AE) Schedules, the 2016 Projection (P) Schedules
22 and the 2016 True-up to Original (TOR) Schedules. The NFR

1 Schedules contain a table of contents listing the schedules sponsored
2 and co-sponsored by FPL Witness Grant-Keene and me, respectively.

3 • Exhibit SDS-9, consisting of summary tables presenting the 2015
4 Actual/Estimated and 2016 Projected Pre-construction costs for the
5 Turkey Point 6 & 7 project.

6 • Exhibit SDS-10, Turkey Point 6 & 7 Project Benefits at a Glance

7 • Exhibit SDS-11, Turkey Point 6 & 7 Customer Savings from Nuclear
8 Cost Recovery Law

9 • Exhibit SDS-12, Remaining Steps in Turkey Point 6 & 7 Licensing

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

11 A. The purpose of my testimony is to provide a description of how the Turkey
12 Point 6 & 7 project is being managed and controlled. The project undertakes
13 the steps necessary to license, construct, and operate two Westinghouse
14 designed AP1000 nuclear reactors (AP1000) and associated transmission and
15 ancillary facilities at the Turkey Point site near the existing Turkey Point
16 3 & 4 nuclear units in southern Miami-Dade County. My testimony provides
17 insight into how project activities are managed given the near term focus on
18 obtaining all licenses, permits, and approvals and the factors influencing key
19 decisions affecting the nature, cost, and pace of that effort. I will also
20 describe the projected expenditures for 2015 and 2016 allowing FPL to
21 support and defend the required licenses, permits and approvals, and to
22 maintain those that have been obtained. FPL's 2015 and 2016 cost recovery

1 requests, as in past years, include only amounts that are associated with the
2 Licensing Phase currently underway.

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

4 A. FPL continues to carefully and methodically create the opportunity for
5 additional reliable, cost-effective and fuel diverse nuclear generation to
6 benefit FPL's customers. The approach applied to the management of the
7 Turkey Point 6 & 7 project provides control of cost risks while maintaining
8 progress through the intensive licensing period. The unique qualitative
9 benefits of fuel diversity, energy security and zero greenhouse gas emissions
10 offered by nuclear generation are unchanged from the origin of the project.
11 Quantitative benefits estimated for the project have decreased slightly with
12 improving economic factors, which on balance are beneficial for FPL's
13 customers. Notably, progress in other nuclear industry milestones (i.e.,
14 AP1000 U.S. construction) continues to provide positive indicators for the
15 long term feasibility of new nuclear plant deployment.

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17 In 2015 and 2016 FPL will continue its progress on the project primarily by
18 defending an appeal of the state Site Certification Final Order and moving to
19 the final stages of the Nuclear Regulatory Commission's (NRC) Combined
20 License Application (COLA) review process.

21

22 The results of the annual feasibility analysis continue to support disciplined
23 pursuit of the project, and reaffirm that the project can provide unique

1 quantitative and qualitative benefits to FPL customers. FPL's stepwise
2 approach continues to provide FPL customers with the best opportunity to
3 make steady progress on the project. My testimony provides the Florida
4 Public Service Commission (FPSC) with the information necessary to
5 conclude that FPL's 2015 and 2016 project activities are reasonable and in the
6 interests of FPL customers and Floridians, in general.

7 **Q. Would you please provide an overview of the expected benefits of the**
8 **Turkey Point 6 & 7 project for FPL customers?**

9 A. Yes. Taking into account the updated project information provided in this
10 testimony, FPL expects the Turkey Point 6 & 7 project will:

- 11 • Provide estimated fuel cost savings for FPL's customers of
12 approximately \$570 million (nominal) in the first full year of operation
13 based on a Medium Fuel Cost forecast;
- 14 • Provide estimated fuel cost savings for FPL's customers of
15 approximately \$47 billion (nominal) over a 40 year operating life, and
16 approximately \$101 billion (nominal) over a 60 year operating life,
17 based on a Medium Fuel Cost forecast;
- 18 • Diversify FPL's fuel sources by decreasing reliance on natural gas by
19 approximately 13% beginning in the first full year of two unit
20 operation;
- 21 • Reduce annual fossil fuel usage by the equivalent of 29 million barrels
22 of oil or 184 million MMBTU of natural gas; and

1 A. Several key developments led to the establishment of the Nuclear Cost
2 Recovery statute as a means of resolving persistent issues in meeting the need
3 for stable and reasonably priced, reliable electricity for the state of Florida – in
4 a term “fuel diversity”. Primarily, the state’s reliance on natural gas-fueled
5 generation to meet the growing electricity needs of Floridians, highlighted by
6 volatile fossil fuel prices and supply reliability issues, created concern that
7 insufficient fuel diversity threatened the long term economic stability of the
8 state. These concerns were reinforced in 2005 by hurricanes Katrina and Rita,
9 which impacted natural gas production in the Gulf of Mexico, threatened
10 FPL’s fuel supply reliability, drove up natural gas prices and placed financial
11 strain on FPL customers. Florida’s significant and growing reliance on
12 natural gas fueled generation is a result of the difficulty in being able to
13 deploy non-gas baseload alternatives; most commonly fossil fuels (coal or oil
14 fueled generation) or nuclear generation. For example, FPL’s proposal in
15 2006 to build a clean coal power plant was denied by the FPSC. Nuclear Cost
16 Recovery was initiated to directly address some of the challenges associated
17 with deployment of nuclear generation to help improve fuel diversity and has
18 been successful for FPL customers, as more than 520 MW of new nuclear
19 capacity was successfully added to the system in 2013.

20 **Q. How did Florida’s reliance on natural gas develop?**

21 A. Throughout the last several decades, significant political, economic and
22 technology changes occurred to reshape the state’s generation portfolio away
23 from a dependence on foreign oil in the 1970s as existing plants were replaced

1 by plants operating on other fuel sources. During this period the nuclear
2 industry was dealing with significant regulatory, cost and schedule challenges
3 in deploying new nuclear units – essentially keeping new nuclear capacity
4 from being an option in the late 1980s and 1990s. The other traditional
5 baseload alternative, coal, had only been developed in limited amounts in
6 Florida because of the significant logistical challenges and expense in
7 delivering large quantities of coal from supply regions located in the country’s
8 interior and concerns related to emissions. These factors opened the door for
9 a new baseload technology. Deregulation of natural gas as a fuel for electric
10 generation and the introduction and continued improvement of large scale
11 combined cycle gas turbine technology evolved to provide a cost-effective,
12 efficient and low emissions alternative. As a result, combined cycle gas
13 turbine plants have been the technology of choice for most generation
14 additions in the state from the 1990s to today. While customers have
15 benefited from these choices, particularly the affordability and lower
16 emissions of domestic natural gas, recurrence of high and volatile fossil fuel
17 prices or supply reliability issues have impacted customers and the Florida
18 economy in the past and, unaddressed, could impact the state again in the
19 future.

20 **Q. What recent developments occurred to enable new nuclear generation as**
21 **a deployable alternative?**

22 A. In the late 1990s, the NRC instituted a refined regulatory framework for the
23 licensing of new nuclear generating units. This revised process places a high

1 focus on the rigor and detail applied during the licensing process, reducing the
2 opportunity for regulatory delays during construction or prior to operation;
3 complications that severely impacted the prior generation of nuclear power
4 plants. In this way, if regulatory delays occur they do so prior to significant
5 investment reducing the financial risk in the process. Also during the 1980s
6 and 1990s, a new generation of nuclear power plants were developed and
7 poised for U.S. and international deployment. The federal Energy Policy Act
8 of 2005 provided incentives and assurances that further motivated renewed
9 interest in nuclear generation. Consortiums were formed between potential
10 owners and manufacturers that furthered several key projects validating that
11 the new designs and licensing processes would be successful. By 2006, a host
12 of new nuclear projects had been proposed in the U.S. With the passage of
13 the Florida Energy Act of 2006 and the FPSC's adoption of the Nuclear Cost
14 Recovery rule, deployment of new nuclear capacity in Florida to address fuel
15 diversity concerns became a realistic option.

16 **Q. What specific considerations are included in the Nuclear Cost Recovery**
17 **rule as implemented by the FPSC?**

18 A. A core principle of the Nuclear Cost Recovery rule is that of transparency. In
19 order to satisfy that principle, applicants for cost recovery must satisfy a
20 number of extensive reviews. In order to enter the annual cost recovery
21 process, an applicant must first obtain an affirmative need determination
22 verifying that the proposed generation is required to provide cost-effective and
23 reliable electric generation. Annually, within the cost recovery process, the

1 applicant must provide a full accounting for all factors of the project,
2 including cost, schedule, decisions, and ongoing feasibility. This transparency
3 allows the FPSC to conduct in-depth oversight of the utility's actions in real
4 time – as the project proceeds, rather than in hindsight years after decisions
5 are made and money is spent. The FPSC then makes a “reasonableness”
6 determination as to costs projected for the project (prior to any recovery of
7 those costs), and reviews historical costs for “prudence”. Amendments to the
8 Nuclear Cost Recovery statute in 2013 provide for additional interim review
9 steps as the projects proceed from licensing to preparation and subsequently,
10 construction.

11 **Q. How does the existence of the Nuclear Cost Recovery process assist FPL**
12 **in bringing forward nuclear generation projects?**

13 A. The statute and associated rule provide the requisite regulatory certainty
14 necessary for FPL to undertake the complex and challenging task of adding
15 new nuclear capacity to its system. The process allows FPL to take the long-
16 lead steps of licensing and pre-construction and pays off interest costs during
17 construction, reducing costs to FPL's customers. Additionally, it enables FPL
18 to go to the financial markets and obtain competitive financing rates for the
19 large amount of capital required to fund the construction of the project.

20 **Q. Does the implementation of Nuclear Cost Recovery provide savings for**
21 **FPL customers?**

22 A. Yes. Nuclear Cost Recovery enables customers to avoid paying for
23 compounded interest during the approximately nine year construction period

1 and reduces the overall amount that would be recovered from customers under
2 normal rate base treatment by billions of dollars. As shown on Exhibit SDS-
3 11, the Nuclear Cost Recovery framework is projected to save FPL customers
4 about \$12.3 billion over the life of the Turkey Point 6 & 7 units.

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PROJECT APPROACH

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8 **Q. What is FPL's overall approach to developing Turkey Point 6 & 7?**

9 A. FPL continues to develop Turkey Point 6 & 7 through a deliberate and careful
10 process navigating through the four phases of project development:
11 Exploratory, Licensing, Preparation, and Construction. The project is
12 currently focused on the Licensing phase which allows FPL to make progress
13 on obtaining licenses and approvals without taking on the risks and
14 expenditures that would result from committing to a specific construction
15 schedule. For example, through 2016, FPL estimates it will have spent
16 approximately 1% of the high end of the estimated project cost range (\$20.0
17 billion).

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19 A project of this complexity, particularly in the early stages, is subject to
20 external factors that are not under FPL's control. Therefore, FPL's approach
21 has been developed as a step-wise process. Routine monitoring of a wide
22 range of factors and events is accomplished to help increase certainty and
23 predictability, informing each subsequent step.

1 **Q. Please expand on the concept of the step-wise process and how the risks**
2 **related to the Turkey Point 6 & 7 project are controlled by key decisions.**

3 A. The project team monitors issues at local, state, and federal levels and across
4 technical, commercial, economic, and regulatory areas of interest. The impact
5 on cost, schedule, and quality are routinely assessed through a set of tools and
6 reviews. If review indicates the potential for a considerable cost or schedule
7 impact, mitigation actions are identified and are designed to eliminate, reduce,
8 or defer the impact. If the magnitude of the impact materially affects cost or
9 schedule, or changes the feasibility of the project, a decision is made as to
10 whether such impact is acceptable in light of all current information.
11 Alternative courses of action include continuing with a modified budget and
12 schedule along with available mitigation actions, or halting a portion of the
13 project temporarily while the issue is further assessed or resolved. The
14 alternative of slowing or halting a portion of the project in response to
15 significant events or uncertainties offers a high level of risk control for FPL
16 and its customers.

17
18 Recent schedule modifications to accommodate the effects of the revised NRC
19 COLA review schedule, and to incorporate the impacts of the 2013 Nuclear
20 Cost Recovery statutory amendments, demonstrates the implementation of the
21 stepwise approach. The new information was reviewed, and a revised project
22 schedule was developed and vetted.

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1 recent success in the certification, NRC re-licensing, and permitting of
2 multiple power generation units in Florida and is complemented by our
3 national operating experience with renewable, natural gas, and nuclear
4 generation assets.

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6 FPL also gives careful consideration to how it contracts for support of the
7 many license and permit applications. A combination of competitive bidding
8 and single/sole source procurement is used, in compliance with FPL policies,
9 to manage augmentation of FPL staff with qualified and experienced specialty
10 contractors and service providers.

11 **Q. What process and risk management tools does FPL apply to manage cost,
12 risk, and schedule objectives?**

13 A. FPL uses industry accepted project controls, systems, and practices to obtain a
14 high level of control over the expenditures incurred and projected for all
15 projects. The primary means of control are 1) the project budgeting and
16 reporting process, 2) project schedule and activity reporting processes, 3) the
17 contract management process for external service providers, and 4) internal
18 and external oversight processes. These processes were fully described in my
19 March 2, 2015 testimony and continue to be utilized in the oversight of the
20 project.

21 **Q. Please provide examples of specific tools used to manage the project.**

22 A. The PTN 6 & 7 Licensing Project Dashboard presents issues and the current
23 trends for those issues. Over time, if a problematic issue continues to trend

1 down or remains neutral, the effectiveness of the project management controls
2 are investigated to determine if changes in approach can create improvement,
3 or if mitigation measures are adequate. Additionally, a quarterly risk
4 summary tracks the assessment of project risks over time. This summary
5 qualitatively gauges the probability of occurrence and impacts to
6 implementation, cost, and schedule aspects of the project.

7 **Q. What activities are undertaken by the project to address industry issues**
8 **affecting the long term success and execution of the project?**

9 A. FPL is involved in a number of areas to address issues relevant to new nuclear
10 deployment. FPL participates in three specific groups comprised of new
11 nuclear industry owners and design vendor(s). These include the Design
12 Centered Working Group (DCWG), the AP1000 Owners Group (APOG), and
13 the Advanced Nuclear Technology group. The collective purpose of these
14 groups is to identify and resolve issues potentially affecting the licensing,
15 design, construction, operation, and maintenance of the AP1000 design.
16 Individually, each group provides a collaborative forum for owners to work
17 with each other, the design vendor and the NRC to achieve standardized
18 solutions to the issues facing all owners. This enables the industry to maintain
19 a high level of standardization from the earliest stages of new nuclear
20 deployment. Standardization of designs and processes provides benefits to
21 FPL customers in terms of efficiency and cost control.

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1 **ISSUES POTENTIALLY AFFECTING THE PROJECT**

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Q. What are the international, national, and regional issues being monitored for their effect on the Turkey Point 6 & 7 project?

A. FPL monitors issues that can affect the overall timeline or feasibility of the project. Several of these factors, directly or indirectly, influence the scope and pace of regulatory reviews. For example, the NRC’s response to the March 2011 Japanese earthquake and tsunami has indirectly resulted in added scope to the safety review of FPL’s Turkey Point 6 & 7 COLA and impacted the NRC resources available to conduct that review. Other factors relate to updated information that must be incorporated into FPL’s decision making process and feasibility analysis. This information includes the lessons being gathered at the two U.S. AP1000 construction sites, as well as the most current economic forecasts for input into the project planning and analyses processes.

Q. What factors in the federal license and permit review processes may affect the overall timeline of the project?

A. The federal processes include the safety and environmental reviews that inform the NRC COLA process, as well as additional reviews conducted by the Army Corps of Engineers (USACE) in support of the Section 404(b) wetland permit applications. Looking forward, several factors are being monitored for potential impact.

1 For example, as discussed in my March 2, 2015 testimony, the NRC provided
2 an updated Review schedule for both safety and environmental aspects of the
3 Turkey Point 6 & 7 COLA in 2014. This revised schedule has provided
4 increased certainty regarding the timeline to complete the licensing phase, and
5 has allowed FPL to better estimate the earliest practicable project schedule.
6 NRC progress consistent with this new schedule will be closely tracked.

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8 Additionally, the Atomic Safety and Licensing Board (ASLB) has reviewed
9 contentions to the Turkey Point 6 & 7 COLA over the past several years. All
10 contentions offered by opponents have been dismissed with the exception of
11 one related to certain constituents within waste water from the plant. FPL has
12 conducted additional analyses and will seek to have that contention dismissed.
13 If successful, the Turkey Point 6 & 7 COLA would not require a contested
14 hearing, reducing the time required to obtain a COL.

15 **Q. What factors at the state and local levels may affect the pace of the state**
16 **Site Certification process?**

17 A. Following the Siting Board Final Order in May 2014, four parties filed an
18 appeal in the Third District Court of Appeals. The appellate process will
19 involve briefing and ultimately a hearing before the tribunal. The timing of
20 the process is dependent on several administrative steps and the court's
21 calendar. It is anticipated that the Appellate court will rule within the next 12
22 months.

1 **Q. Does FPL monitor the progress of other U. S. new nuclear energy**
2 **projects?**

3 A. Yes. The new nuclear construction projects at Southern Company's
4 (Southern) Vogtle Electric Generating Plant (Vogtle) in Georgia and SCANA
5 Corporation's (SCANA) Summer AP1000 projects in South Carolina continue
6 to make progress but have experienced delays, primarily related to the
7 fabrication and delivery of modules. In 2014 both projects made progress
8 with the initial safety related construction. The advanced status of these
9 projects serves as a reference for FPL's cost estimates and post-licensing
10 schedule. In general, the status of these projects continues to demonstrate that
11 substantial and consistent progress is being made on deploying the next
12 generation of nuclear projects.

13 **Q. What is the status of a Department of Energy (DOE) Loan Guarantee for**
14 **the Vogtle and Summer projects?**

15 A. Georgia Power has entered into an agreement for a \$3.46 billion loan
16 guarantee for the company's 45.7% interest in the Vogtle 3 & 4 project.
17 Oglethorpe Power, owner of a 30% stake in the Vogtle project, also closed on
18 a \$3.06 billion loan guarantee. Municipal Electric Authority of Georgia is
19 pursuing finalization of a \$1.8 billion loan guarantee for its minority interest
20 in the Vogtle project. SCANA continues to discuss loan guarantees for the
21 Summer project, but has yet to commit to obtaining the guarantees.

22 **Q. What would be required to obtain a DOE Loan Guarantee for the**
23 **Turkey Point 6 & 7 project?**

1 A. Essentially, a new solicitation issued by the DOE Loan Guarantee Office
2 would be required. The solicitation would define the eligibility requirements
3 and terms of application which would guide FPL's actions. Upon submission
4 of an application, the Turkey Point 6 & 7 project would be evaluated for
5 eligibility and specific discussions defining the terms and conditions of a loan
6 guarantee would be initiated. FPL is prepared to pursue such a guarantee
7 should one be offered, and should FPL determine that participation would
8 benefit its customers.

9 **Q. What do recent developments related to the national and regional**
10 **economy indicate with respect to the continued pursuit of the Turkey**
11 **Point 6 & 7 project?**

12 A. The supply and demand balance in the natural gas industry has created a near
13 term reduction in natural gas prices and has maintained long range forecasts
14 for price at historically low levels. FPL Witness Brown addresses the effect
15 of changes in FPL demand forecasts and natural gas price forecasts on the
16 economic feasibility of Turkey Point 6 & 7.

17 **Q. What do recent developments related to national and regional energy**
18 **policy indicate with respect to the continued pursuit of the Turkey Point**
19 **6 & 7 project?**

20 A. National energy policy remains supportive of nuclear energy in general, and
21 new nuclear energy development in specific. Challenges to existing nuclear
22 generators in certain markets has become a focus of the administration as
23 these generators greatly assist in attaining emission reduction goals set by the

1 federal government. Further, the closing of the loan guarantees for Vogtle in
2 2014 underscores the desire of the federal government to promote generation
3 technologies that reduce or eliminate greenhouse gas emissions, maintaining
4 progress towards meeting policy goals. In general, while cautious,
5 policymakers continue to recognize the long term benefits of and need for
6 existing and new nuclear generation capacity.

7
8 Regionally, the legislature amended the Nuclear Cost Recovery statute in
9 2013. Notably, the amendments resulted in maintaining cost recovery as
10 originally envisioned, with added opportunities for the FPSC to review the
11 project prior to initiating major milestones. However, the additional reviews
12 required by the amended statute affect the project schedule and estimated total
13 project cost. Reliability, cost-effectiveness, fuel diversity, fuel supply
14 reliability, and price stability are still benefits to be delivered by increasing
15 nuclear generation capacity and are still needed by FPL's customers. A future
16 plan that does not include new nuclear capacity increases and prolongs
17 reliance on fossil fuels, increases exposure to fuel supply reliability and price
18 volatility, and is not as effective at reducing system emissions, including
19 greenhouse gas emissions, when compared to a plan that does include new
20 nuclear generation capacity.

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KEY DECISIONS AND MILESTONES

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Q. What will be the focus of the project in 2015 and 2016?

A. The focus will remain on defending the state Site Certification in the appellate process and obtaining the federal licenses and permits necessary to construct and operate the Turkey Point 6 & 7 project. The milestones required to obtain these goals are discussed below and summarized in Exhibit SDS-12.

Q. What specific milestones are expected in relation to completing the NRC licensing process?

A. The Draft Environmental Impact Statement (EIS) was published on February 27, 2015 and public comment sessions were held on April 22, and 23, 2015. The comment period closes on May 22, 2015. The NRC staff and Army Corps will address the comments received, and estimates publication of the Final EIS in February 2016. Using these dates, and assuming the contention stands, FPL estimates that the ASLB would hold a contested hearing in the latter part of 2016.

The NRC staff estimates that the Advanced Final Safety Evaluation Report (SER) will be published in January 2016. A review by the Advisory Committee on Reactor Safeguards (ACRS) will be conducted in May 2016 followed by the Final Safety Analysis Report published in October 2016. With completion of the FSER and the ASLB hearing, the NRC would be able to make a decision on the Turkey Point Unit 6 & 7 COL by March 2017.

1 **Q. Are there assumptions included in these estimates that may change, and**
2 **therefore affect the schedule?**

3 A. Yes. The NRC assumes that they will be provided the necessary resources to
4 execute the estimated plan. The NRC is addressing competing priorities to
5 resolve the NRC's response to Fukushima for the existing nuclear plants and
6 demands on resources necessary to complete the safety review. The
7 availability of NRC resources to complete the Turkey Point Unit 6 & 7 COLA
8 review will be impacted by the progress made in this important area, and other
9 potential developments.

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11 At a project level, there are two specific assumptions that may offer an
12 opportunity to better the current milestone estimates. The SER timeline
13 assumes timely resolution of two additional rounds of Requests for Additional
14 Information of six months each, where only one round may be necessary.
15 Additionally, the overall timeline assumes the need for the ASLB (contested)
16 hearing. As discussed previously, if the last contention is dismissed, the
17 contested hearing would not be required and the overall schedule may gain six
18 months.

19 **Q. Did FPL anticipate that the NRC regulatory process could be extended?**

20 A. Yes. The potential for this schedule change was foreseen and this type of
21 change is at the core of how FPL has chosen to proceed on this important
22 project. As I indicated in 2013, "Things that are not under FPL's control are
23 federal budget issues, sequestration, and other items that affect the NRC's

1 resource and their resource allocation.” (See Transcript Docket 130009-EI,
2 page 609, lines 12-15). The NRC gives priority to emerging issues that affect
3 the existing nuclear fleet. FPL is making every prudent effort to deliver the
4 benefits of the project on the earliest practicable schedule, while being
5 mindful of the potential for and impact of delays. In fact, this has been FPL’s
6 position throughout this project.

7 **Q. What specific milestones are expected related to the USACE Section**
8 **404(b) process?**

9 A. As described in prior sections, the USACE will utilize the NRC EIS as its
10 Record of Decision for the Section 404(b) permits. Thus, the timing of these
11 permit activities closely follow the NRC process up to the point of the Final
12 EIS. When the Draft EIS was published for comment, the USACE published
13 a notice of the permit application. In parallel to the National Environmental
14 Policy Act based EIS process, the USACE will similarly complete a review
15 under the Clean Water Act to determine the Least Environmentally Damaging
16 Practicable Alternative. This will include a wildlife consultation with the U.S.
17 Fish & Wildlife Service. It is expected that the Section 404(b) permits could
18 be issued within four to six months following completion of the Final EIS in
19 2016.

20 **Q. What specific milestones are expected related to the state Site**
21 **Certification process in 2015 and 2016?**

1 A. As discussed earlier, the Third District Court of Appeals is expected to
2 address the appeal within the next 12 months. Also, FPL will take necessary
3 actions required by Conditions of Certification (CoC) to maintain compliance.

4 **Q. What type of activities are required by the CoC, and what is the timing**
5 **associated with these activities?**

6 A. The CoC identify specific activities (such as monitoring plans or reports,
7 management plans and wildlife surveys) necessary to demonstrate compliance
8 with the CoC and applicable regulatory requirements. The time requirements
9 for these activities vary based on the activity in question. Some are required
10 within a specified period of time following an event, such as Certification or
11 completion of construction. Some precede an event, such as commencement
12 of construction or commencement of operation. FPL will undertake those
13 activities necessary to maintain compliance with the terms and conditions of
14 the Certification.

15 **Q. Please provide an example of results associated with the state Site**
16 **Certification process that may affect the project cost or schedule.**

17 A. A monitoring program associated with the Radial Collector Well (RCW)
18 system was included as a CoC that will require significant groundwater and
19 ecological monitoring before, during, and after construction of the RCW
20 system. This is an example of the type of activity that could not be
21 specifically estimated prior to the Certification.

22 **Q. What specific milestones are expected for the Everglades National Park**
23 **Land Exchange process in 2015?**

1 A. The Draft EIS was published in January 2014 and comments were accepted
2 from the public through March 18, 2014. The U.S. National Park Service will
3 address the comments received and is expected to produce a Final EIS in
4 2015. Any agreement resulting in the land exchange would occur following
5 the Final EIS, and will likely include terms and conditions as established by
6 the Secretary of Interior.

7 **Q. Are there other specific milestones in the 2015-2016 timeframe that are**
8 **expected to enable FPL to proceed with pre-construction work after**
9 **receipt of the COL?**

10 A. Yes. FPL's current project schedule includes filing a request in 2016 to begin
11 pre-construction work, so that it can immediately begin such work upon
12 receipt of the COL. If FPL's request is made concurrent with its ordinary
13 May 2016 NCR filing, it would be considered by the FPSC in the fall and a
14 final order would likely be issued by the end of 2016. This timing aligns well
15 with the current NRC schedule discussed above, which assumes receipt of the
16 COL in the first part of 2017.

17 **Q. What work is FPL performing to obtain this necessary approval?**

18 A. FPL is conducting a number of initial assessments to inform a decision to
19 proceed to begin preconstruction work, as that term is used in Section 366.93,
20 Florida Statutes, and to support the related regulatory approval of such a
21 decision. These initial assessments are a collection of studies that are
22 necessary to compile a coordinated recommendation to continue to pre-
23 construction. These include engineering analyses that will help better define

1 the project schedule and construction scope, enhancing the accuracy of the
2 cost and schedule estimate to be used for the feasibility analysis that would be
3 presented in support of a decision to proceed to pre-construction. Due to the
4 nature of these initial assessments, some are required to be initiated up to
5 many months in advance of the decision to begin preconstruction.
6 Accordingly, it is reasonable that FPL undertake these activities in 2015 and
7 2016. FPL has chosen to defer requesting contemporaneous recovery of the
8 costs expended for these initial assessments until they are included in the
9 request for approval to proceed with pre-construction work.

10 **Q. Is there any pre-construction work anticipated in 2015 and 2016?**

11 A. No. Only activities that are related to obtaining or maintaining the necessary
12 licenses, permits or approvals, as discussed above, are planned to be
13 undertaken in 2015 and 2016.

14

15 **PROJECT COST AND FEASIBILITY**

16

17 **Q. What is the current non-binding cost estimate range for the project?**

18 A. The overnight capital cost estimate range is \$3,844/kW to \$5,589/kW. When
19 time-related costs such as inflation and carrying costs are included, and CODs
20 of 2027 and 2028 are assumed, the total project cost ranges from \$13.7 to
21 \$20.0 billion for the 2,200 MW project.

22 **Q. Please explain how the overnight cost estimate is constructed and how it**
23 **is used to help evaluate the feasibility of the project each year.**

1 A. An overnight cost is developed using the most current information available.
2 An overnight cost provides an estimate of the total project costs assuming all
3 costs occur at one point in time (“overnight”) and time-related costs
4 (escalation, interest during construction) are not included. Further,
5 recognizing many things could influence the overnight cost, additional
6 analysis is conducted on each component of the overnight cost to explore how
7 much it could vary, resulting in a cost estimate range. The overnight cost
8 provides an indication of the cost per kilowatt (\$/kW) for the project in a
9 given year reference. The 2014 cost estimate range was \$3,750/kW to
10 \$5,453/kW in 2014 dollars. Updating the cost estimate range provides a cost
11 estimate range of \$3,844/kW to \$5,589/kW in 2015 dollars. The cost estimate
12 range has been adjusted to current year dollars by assuming a 2.5% escalation
13 over the years between 2007 and present. While the actual escalation
14 experienced has been generally lower, retaining this simple assumption is
15 conservative and consistent with past year evaluations.

16
17 A breakeven cost analysis is developed by FPL’s Resource Assessment and
18 Planning Department, and is further discussed by FPL Witness Brown. This
19 breakeven cost is provided as an overnight cost and is directly compared to
20 the cost estimate range to assess the economic feasibility of the project.

21 **Q. Have there been any revisions to project features or design or any**
22 **industry-wide developments in the past year that suggest a revision to the**
23 **overnight capital cost estimate range?**

1 A. No. A review was conducted to capture any potential changes and estimate
2 the potential cost impact. No significant changes or developments have
3 occurred in the past year indicating any revisions are necessary to the project
4 cost estimate range. In general, the Final Order resulting from the SCA
5 preserved the project and ancillary features as proposed by FPL, and is
6 therefore consistent with the project as envisioned in the current cost estimate
7 range.

8 **Q. Does FPL's cost estimate range continue to be reasonable?**

9 A. Yes. The FPL cost estimate range continues to be reasonable based on the
10 annual review of the Turkey Point 6 & 7 capital cost estimate, a comparison to
11 other U.S. AP1000 project progress reports, and Concentric Energy Advisors'
12 review of U.S. AP1000 project overnight and total estimated costs.

13

14 The comparison to other U.S. AP1000 projects provides confidence due to the
15 advanced nature of the projects being reviewed. The costs being experienced
16 by the lead projects at Vogtle and Summer are informed by committed
17 contracts, are well into the construction cycle, and include significant
18 equipment and material purchases. Therefore, the total project costs estimated
19 for the projects in construction are more certain.

20 **Q. What future activities are anticipated that will provide information to
21 revise the overnight capital cost estimate range?**

22 A. Negotiations on the Engineering, Procurement and Construction contract will
23 provide more information including price, terms and schedules to support an

1 execution plan for project construction. That information will be integrated
2 with continued observations of the progress of preceding U.S. projects to
3 inform and revise the Turkey Point 6 & 7 non-binding cost estimate, as
4 warranted.

5 **Q. What factors may impact the overall project cost estimate, including**
6 **time-related costs such as price escalation and carrying costs?**

7 A. The primary factors affecting the total project cost will be the actual labor and
8 materials costs experienced during the Preconstruction and Construction
9 periods. The certainty around these costs will increase as preceding projects
10 move through the stages of construction and as FPL negotiates the principal
11 contracts for engineering, procurement, and construction of the project. The
12 pace of expenditures is also a critical factor that will impact total project costs.
13 Escalation of future costs and carrying costs on expended funds are time
14 related factors.

15 **Q. What are the most current Turkey Point 6 & 7 economic feasibility**
16 **analysis results?**

17 A. As discussed by FPL Witness Brown, the most current feasibility analysis
18 affirms the projected cost effectiveness and benefits associated with the
19 Turkey Point 6 & 7 project using the same basic analytical approach applied
20 in the Need Determination proceeding for the project and the six prior NCRC
21 filings. The analysis calculated a projected “break-even” cost for new
22 nuclear; a cost that results in the same life cycle costs (or cumulative present
23 value of revenue requirements) as an alternative plan relying on natural gas

1 combined cycle units assuming a 40 year operating life. The analysis was
2 conducted for seven scenarios comprised of combinations of three fuel and
3 three emission cost forecasts. The projected break-even costs were higher
4 than FPL's non-binding cost estimate range for its Turkey Point 6 & 7 project
5 in two of seven scenarios, and within the cost estimate range for the other five
6 scenarios. These results indicate that the Turkey Point 6 & 7 project is clearly
7 quantitatively superior to the combined cycle gas alternative plan in two
8 scenarios and within the non-binding cost estimate range in the other five
9 scenarios. The comparison to a natural gas facility must also recognize the
10 qualitative benefits offered only by a nuclear facility; fuel diversity, energy
11 security and zero greenhouse gas emissions.

12 **Q. Is a 40 year operating life assumption conservative?**

13 A. Yes. The term of forty years was chosen as a conservative estimate of the
14 operating life of the units based on the initial term of the NRC Combined
15 License. Historically, the initial license terms have been renewed for an
16 additional 20 years for many of the existing reactors in the U.S. today. FPL's
17 Turkey Point Units 3 and 4 and St. Lucie 1 and 2 units have successfully
18 extended the original license terms by 20 years. Therefore, it is reasonable to
19 assume that a 20 year extension would be attainable for the Turkey Point Unit
20 6 & 7 project.

21 **Q. How would the breakeven analysis results change if it is assumed that the**
22 **operating life of Turkey Point Units 6 and 7 is actually 60 years?**

1 A. The results indicate that the Turkey Point 6 & 7 project is quantitatively
2 superior to the combined cycle gas alternative plan in six scenarios, while one
3 scenario falls within the cost estimate range.

4 **Q. In February 2010, FPSC Staff provided a list of factors for consideration**
5 **in the feasibility analysis. Have those factors been considered?**

6 A. Yes. FPL Witness Brown discusses the economic factors and I discuss the
7 non-economic factors.

8 **Q. What non-economic factors affect the project's long term feasibility?**

9 A. Non-economic factors include the feasibility of obtaining all necessary
10 approvals (permits, licenses, etc.), the ability to obtain financing for the
11 project at a reasonable cost, and supportive state and federal energy policy.

12

13 Significant progress continues on the federal, state, and local approvals
14 required for the construction and operation of the project. During 2014, the
15 state certification process was completed, pending appeal. Similarly, the
16 federal licensing efforts are moving forward in 2015 and are estimated to be
17 complete by 2017 as discussed previously. While the review process has
18 taken longer than originally anticipated, the process is proceeding
19 substantively as expected.

20

21 Financing will be determined as the project proceeds through approvals to
22 construction. The lead projects, Vogtle and Summer, have successfully
23 obtained financing, and Vogtle has closed on a significant federal loan

1 guarantee. FPL will continue its dialogue with the financial community to
2 help maintain FPL's capability to obtain financing with reasonable terms.

3

4 As discussed earlier in this testimony, state and federal energy policy
5 continues to be generally supportive of new nuclear generation for a host of
6 reasons. Recent legislative activity in Florida sought to revise some aspects of
7 the Nuclear Cost Recovery statute, but preserve the opportunity it provides.
8 The high reliability, low and stable cost, and zero greenhouse gas emission
9 profile of nuclear generation technology remains highly compatible with key
10 energy policy objectives.

11 **Q. Does FPL intend to pursue completion of the Turkey Point 6 & 7 project?**

12 A. Yes. The critical path to completing Turkey Point 6 & 7 requires obtaining
13 the licenses and approvals necessary to construct and operate Turkey Point
14 6 & 7. Once the project is closer to obtaining the approvals, FPL will be able
15 to refine the economic assumptions and incorporate the experience of other
16 new nuclear projects as well as how state and federal energy policies have
17 evolved. The FPSC will continue to have the opportunity to review FPL's
18 plans through the NCRC process.

19 **Q. Does FPL have sufficient, meaningful, and available resources dedicated**
20 **to the Turkey Point 6 & 7 project?**

21 A. Yes. As demonstrated throughout this testimony, FPL has in place an
22 appropriate project management structure that relies on both dedicated and
23 matrixed employees, the necessary contractors for specialized expertise, and a

1 robust system of project controls. These resources enable the project to
2 progress through the current licensing phase.

3

4

2015 & 2016 PROJECT COSTS

5

6 **Q. How are the 2015 Actual/Estimated costs and the 2016 Projected costs**
7 **developed?**

8 A. FPL has a disciplined ground-up process to develop project budgets. This
9 process was used in the initial project budgeting activity and is routinely
10 reviewed and evaluated for adequacy and accuracy as additional information
11 becomes available. The estimates of the 2015 Actual/Estimated and 2016
12 Projected costs were completed in accordance with FPL's budget and
13 accounting guidelines and policies. Where services are contracted, rates are
14 provided by the contractor and reviewed to verify the charged rates are
15 consistent with FPL's experience in the broader industry. The cost estimates
16 were compared to other costs being incurred by the Company for similar
17 activities and found to be reasonable.

18 **Q. Please provide a high level summary of the 2015 Actual/Estimated and**
19 **the 2016 Projected costs presented in this filing.**

20 A. The costs associated with the Turkey Point 6 & 7 project in 2015 and 2016 are
21 focused on supporting the licensing and permit application reviews underway,
22 supporting compliance for permits and approvals obtained, and conducting the

1 necessary initial assessments to support decision making and necessary
2 approvals for proceeding to preconstruction work.

3 **Q. What changes may occur that could affect these cost projections?**

4 A. The pace and content of the application reviews may impact the actual costs in
5 2015 and 2016, however this is anticipated to be significantly less than
6 experienced in the past as the processes are coming to a close.

7 **Q. Please summarize the costs included in this filing for Turkey Point 6 & 7**
8 **Pre-construction activities.**

9 A. Schedule AE-6 of SDS-8 presents the 2015 Actual/Estimated costs in the
10 following categories: 1) Licensing \$15,377,764; 2) Permitting \$291,349;
11 3) Engineering and Design \$4,026,573; 4) Long Lead Procurement advance
12 payments \$0; 5) Power Block Engineering and Procurement \$0; 6)
13 Transmission \$0; and 7) Initial Assessments \$1,842,105.. Schedule P-6 of
14 SDS-8 presents the 2016 Projected costs in the following categories: 1)
15 Licensing \$17,047,175; 2) Permitting \$520,642; 3) Engineering and Design
16 \$4,684,208; 4) Long Lead Procurement \$0; 5) Power Block Engineering and
17 Procurement \$0; 6) Transmission \$0; and 7) Initial Assessments \$3,157,895.
18 Table 1 of Exhibit SDS-9 provides a summary of the Actual/Estimated 2015
19 and Projected 2016 Pre-construction costs. The descriptions in the Exhibit
20 SDS-9 tables are illustrative and do not provide full line item detail.

21 **Q. Please describe the activities included in the Licensing category for the**
22 **2015 Actual/Estimated costs and the 2016 Projected costs.**

1 A. For the period ending December 31, 2015, Licensing costs are estimated to be
2 \$15,377,764 as shown on Line 3 of Schedule AE-6 of SDS-8. For the period
3 ending December 31, 2016, Licensing costs are projected to be \$17,047,175
4 as shown on Line 3 of Schedule P-6 of SDS-8. Table 2 of Exhibit SDS-9
5 provides a detailed breakdown of the Licensing subcategory costs.

6
7 Licensing costs consist primarily of FPL employee and contractor labor and
8 specialty consulting services necessary to support the various license and
9 permit applications and maintain compliance with the conditions of the
10 approvals and permits obtained for the Turkey Point 6 & 7 project. For
11 example, upon receipt of a COL from the NRC, FPL will be required to have
12 the necessary resources in place to support the license. This will include
13 specialty software to maintain the required license documentation and the
14 necessary qualified professionals to administer the processes. These
15 expenditures result in an increase in NNP Team Costs in 2016 as compared to
16 2015.

17
18 In 2015 and 2016 Licensing costs are primarily related to the NRC COLA and
19 USACE 404(b) permit processes. Licensing costs are developed in accordance
20 with budget and accounting guidelines and policies. Further, these cost
21 estimates were compared to FPL's extensive experience with the development
22 and permitting of new generation projects in Florida and found to be
23 reasonable.

1 **Q. What are the major differences between the 2015 Actual/Estimated**
2 **values and those projected in the May 1, 2014 filing for the Licensing**
3 **category?**

4 A. The Actual/Estimated values for the Licensing category in 2015 are
5 \$4,350,513 more than the amount projected for 2015 in 2014. The principal
6 contributors to the increased requirements come from two areas. The new
7 forecast includes an increase of approximately \$3,200,000 in anticipated NRC
8 fees and a corresponding increase in technical support of approximately
9 \$2,000,000, partially offset by reductions in other cost categories. Both
10 expenditures are driven by the comprehensive review of seismic issues, as a
11 part of an overall heightened industry review of seismic-related areas.

12 **Q. Please describe the activities in the Permitting category for the 2015**
13 **Actual/Estimated costs and the 2016 Projected costs.**

14 A. For the period ending December 31, 2015, Permitting costs are estimated to be
15 \$291,349 as shown on Line 4 of Schedule AE-6 of SDS-8. For the period
16 ending December 31, 2016, Permitting costs are projected to be \$520,642 as
17 shown on Line 4 of Schedule P-6 of SDS-8. Table 3 of Exhibit SDS-9
18 provides a detailed breakdown of the Permitting subcategory costs, including
19 a description of items included within each category. Permitting costs include
20 costs for the Development team, in-house legal support, and resources to
21 conduct necessary outreach educating stakeholders about the project.

1 **Q. What are the major differences between the 2015 Actual/Estimated**
2 **values and those projected in the May 1, 2014 filing for the Permitting**
3 **category?**

4 A. The Actual/Estimated values for the Permitting category in 2015 are \$45,665
5 more than the amount projected for 2015 in 2014. The increased expenditures
6 are for continuing external legal support for the Land Exchange and
7 Development support beyond the time frame projected in the May 1, 2014
8 filing.

9 **Q. Please describe the activities in the Engineering and Design category for**
10 **the 2015 Actual/Estimated costs and the 2016 Projected costs.**

11 A. The Engineering and Design activities performed in 2015 and 2016 are
12 primarily related to participation in industry groups and engineering support
13 for the COLA review. For the period ending December 31, 2015, Engineering
14 and Design costs are estimated to be \$4,026,573 as shown on Line 5 of
15 Schedule AE-6 of SDS-8. For the period ending December 31, 2016,
16 Engineering and Design costs associated with preliminary engineering
17 activities are projected to be \$4,684,208 as shown on Line 5 of Schedule P-6
18 of SDS-8. Table 4 of Exhibit SDS-8 provides a detailed breakdown of the
19 Engineering and Design subcategory costs, including a description of items
20 included within each category.

21

22 Costs for participation in industry groups include the Electric Power Research
23 Institute Advanced Nuclear Technology working group (with annual fees of

1 \$250,000 in 2015 and \$275,000 in 2016) and the DCWG (no external charge
2 to participate in this group). The fee for participation in APOG is expected to
3 be \$3,000,000 in 2015 and \$3,000,000 in 2016. These costs are necessary to
4 obtain the benefits of membership described earlier in this testimony.

5 **Q. What are the major differences between the 2015 Actual/Estimated**
6 **values and those projected in the May 1, 2014 filing for the Engineering**
7 **and Design category?**

8 A. The Actual/Estimated values for the Engineering and Design category in
9 2015 are \$2,118,785 higher than the amount projected for 2015 in 2014. The
10 principal cause of this increase is the increase in APOG membership
11 contribution.

12 **Q. Please describe the activities in the Long Lead Procurement category for**
13 **the 2015 Actual/Estimated costs and the 2016 Projected costs.**

14 A. For the period ending December 31, 2015 and December 31, 2016, Long Lead
15 Procurement costs are projected to be \$0 as shown on Line 6 of Schedule AE-
16 6 of SDS-8 and line 6 of Schedule P-6 of SDS-8. Future Long Lead
17 Procurement costs are anticipated to be included in the Power Block
18 Engineering and Procurement cost category.

19 **Q. Please describe the activities in the Power Block Engineering and**
20 **Procurement category for the 2015 Actual/Estimated costs and the 2016**
21 **Projected costs.**

22 A. For the period ending December 31, 2015 and, Power Block Engineering and
23 Procurement costs are estimated to be \$0 as shown on Line 7 of Schedule AE-

1 6 of SDS-8. For the period ending December 31, 2016, Power Block
2 Engineering and Procurement costs are projected to be \$0 as shown on Line 7
3 of Schedule P-6 of SDS-8.

4 **Q. Please describe the activities in the Transmission category for the 2015**
5 **Actual/Estimated costs and the 2016 Projected costs.**

6 A. For the period ending December 31, 2015, Transmission expenditures are
7 estimated to be \$0 as shown on Line 25 of Schedule AE-6 of SDS-78. For the
8 period ending December 31, 2016, Transmission expenditures are projected to
9 be \$0 as shown on Line 25 of Schedule P-6 of SDS-8.

10

11 All 2015 and 2016 costs associated with Transmission planning are related to
12 the licensing and permitting activities, and therefore are appropriately
13 included in those categories, described above.

14 **Q. Please describe the activities in the Initial Assessments category for the**
15 **2015 Actual/Estimated costs and the 2016 Projected costs.**

16 A. For the period ending December 31, 2015, Initial Assessment expenditures are
17 estimated to be \$1,842,105 as shown on Line 8 of Schedule AE-6 of SDS-8.
18 For the period ending December 31, 2016, Initial Assessment expenditures are
19 projected to be \$3,157,895 as shown on Line 8 of Schedule P-6 of SDS-8.
20 These costs consist of studies required to further refine the revised schedule
21 and substantiate assumptions supporting the feasibility analysis. As discussed
22 previously, these costs are reasonable to support a decision to proceed to
23 preconstruction and to support the filings FPL will make to seek approval to

1 begin preconstruction. Nonetheless, FPL is not seeking to recover these costs
2 as part of its 2016 NCR amount. Therefore, they have been adjusted out of
3 FPL's request, as shown on Line 14 of Schedule AE-6 and Line 14 of
4 Schedule P-6.

5 **Q. Are FPL's Actual/Estimated 2015 and Projected 2016 Turkey Point 6 & 7**
6 **costs reasonable?**

7 A. Yes. FPL's 2015 expenditures of \$21,537,791 and 2016 expenditures of
8 \$25,409,920 are reasonable and necessary to obtain the licenses, permits and
9 approvals which will allow FPL to carefully and methodically create the
10 opportunity for additional reliable, cost-effective and fuel diverse nuclear
11 generation to benefit FPL customers. FPL uses a robust system of project
12 controls, systems, and practices to obtain a high level of control over the
13 expenditures incurred and projected. Together, these support a finding that
14 FPL's Actual/Estimated 2015 and Projected 2016 expenditures are reasonable.

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

16 A. Yes.

Docket No. 150009-EI
Turkey Point 6 & 7 Site Selection and Pre-construction
Nuclear Filing Requirement Schedules
Exhibit SDS-8, Page 1 of 1

SDS-8 is in the Nuclear Filing Requirements Book

Table 1. 2015 Preconstruction Costs

Category	2015 Actual/ Estimated Costs (\$)	2016 Projected Costs (\$)
Licensing	15,377,764	17,047,175
Permitting	291,349	520,642
Engineering & Design	4,026,573	4,684,208
Long Lead Procurement	-	-
Power Block Engineering & Procurement	-	-
Total Preconstruction Costs	19,695,685	22,252,025
Transmission	-	-
Total Preconstruction Costs & Transmission	19,695,685	22,252,025
Initial Assessments	1,842,105	3,157,895
Total Preconstruction Costs, Transmission & Initial Assessments	21,537,791	25,409,920

Note: Totals may not appear to add due to rounding.

Table 2. 2015 Licensing Costs

Category	2015 Actual/ Estimated Costs (\$)	2016 Projected Costs (\$)
NNP Team Costs - NNP FPL Payroll and Expenses, FPL Project Team Facilities, FPL Engineering, FPL Licensing	3,439,461	6,102,657
Application Production - COLA/SCA Contractor, Project Architecture & Engineering, NRC and Design Center Working Group fees	8,188,773	5,881,139
SCA Oversight	-	-
SCA Subcontractors:		
• Transmission	70,219	-
• Environmental	52,681	30,000
• Underground Injection	-	-
Total SCA	122,899	30,000
Environmental Services - FPL Payroll and Expenses, External Support Expenses	257,610	772,575
Power Systems - FPL Payroll and Expenses, System Studies, Licensing and Permitting Support and Design Activities	33,673	57,403
Licensing Legal - FPL Payroll and Expenses, External Legal Services, Expert Witnesses	1,069,688	1,267,019
• Regulatory Affairs	432,750	273,330
• New Nuclear Accounting	238,048	277,657
Total Regulatory Support	670,797	550,987
Licensing Contingency	1,594,863	2,385,395
Total Licensing	15,377,764	17,047,175

Note: Totals may not appear to add due to rounding.

Table 3. 2015 Permitting Costs

Category	2015 Actual/ Estimated Costs (\$)	2016 Projected Costs (\$)
Project Communication Support	37,133	58,527
Development - FPL Payroll and Expenses, Various Studies	148,421	287,953
Permitting - Legal Specialists Support	77,155	105,193
Permitting Contingency	28,639	68,969
Total Permitting	291,349	520,642

Table 4. 2015 Engineering and Design Costs

Category	2015 Actual/ Estimated Costs (\$)	2016 Projected Costs (\$)
Engineering and Construction Team - FPL Payroll and Expenses, Preconstruction Project Management	345,770	773,695
Pre-construction External Engineering - Construction Planning	20,000	-
APOG Membership Participation	3,000,000	3,000,000
EPRI Advanced Nuclear Technology	250,000	275,000
FEMA Fees	15,000	15,000
Engineering and Design Contingency	395,803	620,513
Total Engineering and Design	4,026,573	4,684,208

Table 5. 2015 Initial Assessment Costs

Category	2015 Actual/ Estimated Costs (\$)	2016 Projected Costs (\$)
Total Initial Assessments	1,842,105	3,157,895

Note: Totals may not appear to add due to rounding.

Turkey Point 6 & 7 Project Benefits at a Glance

Projected first year fossil fuel savings for customers

\$570 million

Projected lifetime fossil fuel savings for customers

40 years:
\$47 billion
60 years:
\$101 billion




Enough energy to power
1,251,000 customer homes
without burning coal,
natural gas or foreign oil

Fewer greenhouse gas emissions

CO₂ reduction of
290 million tons
40 years



U.S. EPA annual equivalent of removing more than
61 million cars
from the road



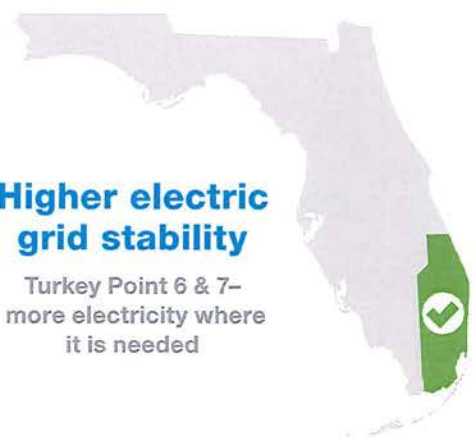
Decreased reliance on natural gas and foreign oil

Annual fossil fuel reduction of the equivalent of
29 million barrels of oil
or
184 million mMBTU of natural gas

FPL's reliance on natural gas reduced by
13%
beginning in the first full year of operation

Higher electric grid stability

Turkey Point 6 & 7—more electricity where it is needed



The quantifications of these benefits are set forth in FPL Witness Brown's testimony and Exhibit ROB-1

Florida's Nuclear Cost Recovery Law Saves FPL Customers Money

Recovery of carrying costs through the Nuclear Cost Recovery Clause reduces rates for customers over the life of the Turkey Point 6 & 7 plant



FPL customers
save more than

\$12
billion*
over the life
of the plant

* Based on the high end of the non-binding cost estimate range and an assumed 40 year operating life
* Net present value in 2015 dollars is more than \$580 million

Remaining Steps to Obtain Key State and Federal Licenses for Turkey Point 6 & 7

Licensing Activity	2015	2016	2017
Site Certification			
Siting Board/Certification			
Potential Appeal	[Bar spanning Q1-Q3 2015]		
Final Unappealable Certification		[Green square]	
Army Corps of Engineers Application			
404(b) Public Notice	[Green square]		
Least Environmentally Damaging Practicable Alternative Review	[Bar spanning Q1-Q3 2015]		
Final Record of Decision		[Green square]	
Permit Issued			[Green square]
Combined License Application (COLA)			
Revised COLA Schedule			
Safety Review	[Bar spanning Q1-Q3 2015]		
Advanced Final Safety Evaluation Report (SER)		[Green square]	
Advisory Committee on Reactor Safeguards Meeting		[Green square]	
Final SER			[Green square]
Environmental Review	[Blue bar]		
Draft Environmental Impact Statement (EIS)	[Green square]		
Completion of EIS	[Bar spanning Q1-Q3 2015]		
Final EIS		[Green square]	
Atomic Safety and Licensing Board Hearing			[Blue bar]
NRC COL Decision			[Green square]

All dates are estimated based on recent state or federal communications

**CERTIFICATE OF SERVICE
DOCKET NO. 150009-EI**

I HEREBY CERTIFY that a true and correct copy of the foregoing testimony and exhibits was served by electronic mail this 1st day of May, 2015 to the following:

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