

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 140009-EI  
FLORIDA POWER & LIGHT COMPANY**

**MAY 1, 2014**

**IN RE: NUCLEAR POWER PLANT COST RECOVERY  
FOR THE YEAR ENDING  
DECEMBER 2015**

**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. 140009-EI**

5                   **May 1, 2014**

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-7, Turkey Point 6 & 7 Site Selection and Pre-construction  
20                Nuclear Filing Requirement (NFR) Schedules consisting of the 2014  
21                Actual/Estimated (AE) Schedules, the 2015 Projection (P) Schedules  
22                and the 2015 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-8, consisting of summary tables presenting the 2014  
4 Actual/Estimated and 2015 Projected Pre-construction costs for the  
5 Turkey Point 6 & 7 project.

6 • Exhibit SDS-9, Turkey Point 6 & 7 Project Benefits at a Glance

7 • Exhibit SDS-10, Turkey Point 6 & 7 Customer Savings from Nuclear  
8 Cost Recovery Law

9 • Exhibit SDS-11, 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 will  
17 provide insight into how project activities are managed given the near term  
18 focus on obtaining all licenses, authorizations, and approvals and the factors  
19 influencing key decisions affecting the nature, cost, and pace of that effort. I  
20 will also describe the projected expenditures for 2014 and 2015 allowing FPL  
21 to support and defend the applications requesting the required licenses and  
22 permits and to maintain permits that have been obtained. FPL's 2014 and  
23 2015 cost recovery requests, as in past years, include only amounts that are

1 associated with the licensing activities currently underway. Notably, the  
2 request does not include any construction costs for the Turkey Point 6 & 7  
3 project. No such costs are being incurred, and such costs are not permitted to  
4 be recovered at this time.

5 **Q. Please summarize your testimony.**

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

18  
19 In 2014 and 2015 FPL will continue its progress on the project by concluding  
20 the state Site Certification Application (SCA) process and moving to the  
21 report review stage in the Nuclear Regulatory Commission's (NRC)  
22 Combined License Application (COLA) process. Delays in the regulatory  
23 review process have been accommodated, but will impact the licensing

1 timeline and, ultimately, the projected commercial operation dates (CODs) of  
2 2022 for Unit 6 and 2023 for Unit 7. An updated project schedule will be  
3 developed following receipt of a revised NRC COLA review schedule, which  
4 is the critical path for project completion. Absent a revised NRC COLA  
5 review schedule, a project schedule including revised in-service dates would  
6 be of marginal planning value.

7  
8 The results of the annual feasibility analysis continue to support disciplined  
9 pursuit of the project, and reaffirm that the project can provide unique  
10 quantitative and qualitative benefits to FPL customers. FPL's stepwise  
11 approach continues to provide FPL customers with the best opportunity to  
12 make steady progress on the project. My testimony provides the Florida  
13 Public Service Commission (FPSC) with the information necessary to  
14 conclude that the licensing activities identified in this request are reasonable  
15 and in the interests of FPL customers and Floridians, in general.

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

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

- 20 • Provide estimated fuel cost savings for FPL's customers of  
21 approximately \$644 million (nominal) in the first full year of operation  
22 based on a Medium Fuel Cost forecast;

- 1 • Provide estimated fuel cost savings for FPL's customers of  
2 approximately \$64 billion (nominal) over a 40 year operating life, and  
3 approximately \$173 billion (nominal) over a 60 year operating life,  
4 based on a Medium Fuel Cost forecast;
- 5 • Diversify FPL's fuel sources by decreasing reliance on natural gas by  
6 approximately 14% beginning in the first full year of two unit  
7 operation;
- 8 • Reduce annual fossil fuel usage by the equivalent of 28 million barrels  
9 of oil or 177 million MMBTU of natural gas; and
- 10 • Reduce CO<sub>2</sub> emissions by an estimated 267 million tons over a 40 year  
11 operating life, which is the equivalent of operating FPL's entire  
12 generating system with zero CO<sub>2</sub> emissions for over 6.5 years.

13 These quantifications are based on the May 2014 project feasibility analysis set  
14 forth in FPL Witness Sim's testimony and Exhibit SRS-1. The Turkey Point  
15 6 & 7 project benefits are also included in my Exhibit SDS-9.

16 **Q. Please describe how the remainder of your testimony is organized.**

17 A. My testimony includes the following sections:

- 18 1. Policy Considerations
- 19 2. Project Approach
- 20 3. Process and Risk Management
- 21 4. Issues Potentially Affecting the Project
- 22 5. Key Decisions and Milestones
- 23 6. Project Cost and Feasibility



1           been successful for FPL customers, as more than 520 MW of new nuclear  
2           capacity was successfully added to the system in 2013.

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

4   A.   Throughout the last several decades, significant political, economic and  
5           technology changes occurred to reshape the state’s generation portfolio away  
6           from a dependence on foreign oil in the 1970s as existing plants were replaced  
7           by plants operating on other fuel sources. During this period the nuclear  
8           industry was dealing with significant regulatory, cost and schedule challenges  
9           in deploying new nuclear units – essentially keeping new nuclear capacity  
10          from being an option in the late 1980s and 1990s. The other traditional  
11          baseload alternative, coal, had only been developed in limited amounts in  
12          Florida because of the significant logistical challenges and expense in  
13          delivering large quantities of coal from supply regions located in the country’s  
14          interior and concerns related to emissions. These factors opened the door for  
15          a new baseload technology. Deregulation of natural gas as a fuel for electric  
16          generation and the introduction and continued improvement of large scale  
17          combined cycle gas turbine technology evolved to provide a cost-effective,  
18          efficient and low emissions alternative. As a result, combined cycle gas  
19          turbine plants have been the technology of choice for most generation  
20          additions in the state from the 1990s to today. While customers have  
21          benefited from these choices, particularly the affordability and lower  
22          emissions of domestic natural gas, recurrence of high and volatile fossil fuel  
23          prices or supply reliability issues have impacted customers and the Florida

1 economy in the past and, unaddressed, could impact the state again in the  
2 future.

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

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

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

3 A. A core principle of the Nuclear Cost Recovery rule is that of transparency. In  
4 order to satisfy that principle, applicants for cost recovery must satisfy a  
5 number of extensive reviews. In order to enter the annual cost recovery  
6 process, an applicant must first obtain an affirmative need determination  
7 verifying that the proposed generation is required to provide cost-effective and  
8 reliable electric generation. Annually, within the cost recovery process, the  
9 applicant must provide a full accounting for all factors of the project,  
10 including cost, schedule, decisions, and ongoing feasibility. This transparency  
11 allows the FPSC to conduct in-depth oversight of the utility's actions in real  
12 time – as the project proceeds, rather than in hindsight years after decisions  
13 are made and money is spent. The FPSC then makes a “reasonableness”  
14 determination as to costs projected for the project (prior to any recovery of  
15 those costs), and reviews historical costs for “prudence”. Amendments to the  
16 Nuclear Cost Recovery statute in 2013 provide for additional interim review  
17 steps as the projects proceed from licensing to preparation and subsequently,  
18 construction.

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

21 A. The statute and associated rule provides the requisite regulatory certainty  
22 necessary for FPL to undertake the complex and challenging task of adding  
23 new nuclear capacity to its system. The process allows FPL to take the long-

1 lead steps of licensing and pre-construction and pays off interest costs during  
2 construction, reducing costs to FPL's customers. Additionally, it enables FPL  
3 to go to the financial markets and obtain competitive financing rates for the  
4 large amount of capital required to fund the construction of the project.

5 **Q. Does the implementation of the Nuclear Cost Recovery Clause (NCRC)**  
6 **provide savings for FPL customers?**

7 A. Yes. Nuclear Cost Recovery enables customers to avoid paying for  
8 compounded interest during the approximately eight year construction period  
9 and reduces the overall amount that would be recovered from customers under  
10 normal rate base treatment by billions of dollars. As shown on Exhibit SDS-  
11 10, the Nuclear Cost Recovery framework is projected to save FPL customers  
12 about \$10.4 billion over the life of the Turkey Point 6 & 7 plant.

13

14

## PROJECT APPROACH

15

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

17 A. FPL continues to develop Turkey Point 6 & 7 through a deliberate and careful  
18 process navigating through the four phases of project development:  
19 Exploratory, Licensing, Preparation, and Construction. The project is  
20 currently focused on the Licensing phase prior to initiating Preparation (or  
21 pre-construction) phase activities. The approach allows FPL to make progress  
22 on obtaining licenses and approvals without taking on the risks and  
23 expenditures that would result from committing to a specific construction

1 schedule. For example, through 2015, FPL estimates it will have spent a total  
2 of \$234 million on the Turkey Point 6 & 7 project – approximately 1% of the  
3 high end of the estimated project cost range (\$18.4 billion).

4  
5 A project of this complexity, particularly in the early stages, is subject to  
6 external factors that are not under FPL’s control. Therefore, FPL’s approach  
7 has been developed as a step-wise process. Routine monitoring of a wide  
8 range of factors and events is accomplished to help increase certainty and  
9 predictability, informing each subsequent step.

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

12 A. The project team monitors issues at local, state, and federal levels and across  
13 technical, commercial, economic, and regulatory areas of interest. The impact  
14 on cost, schedule, and quality are routinely assessed through a set of tools and  
15 reviews. If review indicates the potential for a considerable cost or schedule  
16 impact, mitigation actions are identified and are designed to eliminate, reduce,  
17 or defer the impact. If the magnitude of the impact materially affects cost or  
18 schedule, or changes the feasibility of the project, a decision is made as to  
19 whether such impact is acceptable in light of all current information.  
20 Alternative courses of action include continuing with a modified budget and  
21 schedule along with available mitigation actions, or halting a portion of the  
22 project temporarily while the issue is further assessed or resolved. The  
23 alternative of slowing or halting a portion of the project in response to

1 significant events or uncertainties offers a high level of risk control for FPL  
2 and its customers.

3  
4 For example, the events of Fukushima in March 2011 and federal budget  
5 issues in 2010, 2012 and 2013 have constrained the resources of the NRC.  
6 FPL has chosen in past years to defer previously planned expenses associated  
7 with pre-construction activity such as engineering, procurement, and planning  
8 in response to a slower than expected pace of licensing. In this way, FPL  
9 controls the impact of schedule delays that can occur during licensing thereby  
10 lowering the project risk profile. In 2013 the Nuclear Cost Recovery statute  
11 and rule were amended to insert additional decision points, in effect  
12 establishing a step-wise progression that is highly consistent with FPL's  
13 applied project management practice.

14

15 **PROCESS AND RISK MANAGEMENT**

16

17 **Q. How is the Turkey Point 6 & 7 project management organized to**  
18 **maintain an ongoing risk management focus?**

19 A. The Turkey Point 6 & 7 project requires a wide range of skilled team  
20 members with experience in the development, design, construction and  
21 licensing of nuclear generation. The project management structure of the  
22 Turkey Point 6 & 7 project provides for dedicated teams with the requisite  
23 subject matter expertise coordinated to meet project objectives. This is

1 accomplished through a project organization and reporting structure that  
2 effectively identifies and applies resources to issues while maintaining  
3 transparent and open communications.

4  
5 As described in my March 3, 2014 testimony, the project organization relies  
6 on two principal groups jointly responsible for the integrated execution of the  
7 project. William Maher, Senior Director of New Nuclear Projects, manages  
8 the New Nuclear Plant (NNP) organization with responsibility for NRC  
9 licensing and project engineering and construction. I lead the Development  
10 organization for all other facets of project development, such as state Site  
11 Certification, local zoning approvals, public relations, and FPSC regulatory  
12 issues. Both Development and NNP report to Mano Nazar, Executive Vice  
13 President of Nuclear and Chief Nuclear Officer. Each organization is  
14 supported by FPL business units with specific, recent success in the  
15 certification, NRC re-licensing, and permitting of multiple power generation  
16 units in Florida and is complemented by our national operating experience  
17 with renewable, natural gas, and nuclear generation assets.

18  
19 FPL also gives careful consideration to how it contracts for support of the  
20 many license and permit applications. A combination of competitive bidding  
21 and single/sole source procurement is used, in compliance with FPL policies,  
22 to manage augmentation of FPL staff with qualified and experienced specialty  
23 contractors and service providers.

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

3 A. FPL uses industry accepted project controls, systems, and practices to obtain a  
4 high level of control over the expenditures incurred and projected for all  
5 projects. The primary means of control are 1) the project budgeting and  
6 reporting process, 2) project schedule and activity reporting processes, 3) the  
7 contract management process for external service providers, and 4) internal  
8 and external oversight processes. These processes were fully described in my  
9 March 3, 2014 testimony and continue to be utilized in the oversight of the  
10 project.

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

12 A. The PTN 6&7 Licensing Project Dashboard presents issues and the current  
13 trends for those issues. Over time, if a problematic issue continues to trend  
14 down or remains neutral, the effectiveness of the project management controls  
15 are investigated to determine if changes in approach can create improvement,  
16 or if mitigation measures are adequate.

17  
18 Project Memoranda, describing the background and analysis considered in  
19 project decisions, are an example of a tool developed to ensure a higher level  
20 of documentation and transparency in the management of the project. These  
21 memoranda document decisions made with respect to project features,  
22 policies, contracts, cost estimates, and schedules.

23

1           Additionally, a quarterly risk summary tracks the assessment of project risks  
2           over time. This summary qualitatively gauges the probability of occurrence  
3           and impacts to implementation, cost, and schedule aspects of the project.

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

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

19

#### 20                           **ISSUES POTENTIALLY AFFECTING THE PROJECT**

21

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

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

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

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

18

19 As a result of the government shutdown in late 2013, the NRC's subcontracts  
20 supporting the environmental review were terminated. With funding restored,  
21 these subcontracts were subsequently reinstated, but some delay occurred as  
22 the issue was addressed. Additionally, the pace of the environmental review  
23 has been impacted by resources being diverted to the Waste Confidence

1 Environmental Impact Statement (EIS), a priority for the NRC. The USACE  
2 relies on the Turkey Point 6 & 7 EIS produced through the NRC COLA  
3 process for its Section 404(b) permitting review. Delay in the NRC EIS  
4 process directly impacts the USACE process.

5  
6 Similarly, the NRC staff is now completing reviews of additional analyses  
7 related to seismic, geologic and geotechnical engineering. The pace of the  
8 safety review has been impacted by resources being diverted to the hydrology  
9 and seismology issues resulting from the events at Fukushima in 2011. A  
10 schedule for completion of the COLA review, expected later in 2014, will  
11 establish a higher level of schedule certainty for completion of the licensing  
12 phase and will support development of a revised Turkey Point 6 & 7 project  
13 schedule.

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

22

1           There are also several NRC proceedings that relate indirectly to the Turkey  
2           Point 6 & 7 project. These include the rulemaking related to the long term  
3           storage of high-level radiological waste, commonly referred to as “Waste  
4           Confidence”. The NRC has indicated that it will not issue a new COL until  
5           that rulemaking is complete. Additionally, there is an ongoing rulemaking  
6           related to Spent Fuel Pools. A motion has been made to suspend activity on  
7           the Turkey Point 6 & 7 COLA (and other applications) until the  
8           Spent Fuel Pool rulemaking has been completed. Neither rulemaking appears  
9           to present a negative impact to the expected receipt of the Turkey Point 6 & 7  
10          COL, the schedule of which I discuss in greater detail later in this testimony.

11       **Q. Has NRC staff recently provided an estimate of milestone dates in the**  
12       **Turkey Point Unit 6 & 7 COLA review schedule?**

13       A. Yes. In response to a specific request by the ASLB, NRC staff provided  
14       estimates of certain key milestones in an April 10, 2014 letter. In an April 17,  
15       2014 letter to FPL, NRC staff confirmed the environmental dates provided in  
16       the April 10, 2014 letter. While these letters do not provide a revised COLA  
17       review schedule, they provide information that is helpful in estimating the  
18       remaining steps in the licensing phase. The potential implications of these  
19       letters are discussed in the next section of this testimony.

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

22       A. Due to the interests of parties to the state Site Certification, the duration of  
23       steps within the process have taken longer than originally anticipated. While

1 this additional time ensures that all parties' concerns are appropriately  
2 addressed, it challenges the ability to develop a precise schedule. Beyond the  
3 Siting Board decision anticipated in mid-2014, it is possible that the  
4 Certification may be appealed by those opposed to specific aspects of the  
5 project, namely a single 230 kV transmission line in Eastern Miami-Dade  
6 County. The appeal would be heard by a District Court of Appeal and could  
7 require 12 to 18 months to complete.

8 **Q. Does FPL monitor the progress of international new nuclear energy**  
9 **projects?**

10 A. Yes. However, FPL focuses on U.S. projects given the difference in  
11 regulatory, economic, political and supply chain factors between U.S. and  
12 international projects.

13 **Q. What do recent developments related to the progress of new nuclear**  
14 **energy projects in the U.S. indicate with respect to the continued pursuit**  
15 **of the Turkey Point 6 & 7 project?**

16 A. The new nuclear construction projects at Southern Company's (Southern)  
17 Vogtle Electric Generating Plant (Vogtle) in Georgia and SCANA  
18 Corporation's (SCANA) Summer AP1000 projects in South Carolina continue  
19 to make progress. Specifically, in 2013 both projects moved from site  
20 preparation and non-nuclear construction into the safety related construction  
21 authorized by the Combined License under NRC jurisdiction. In 2014, the  
22 projects completed foundation work and began moving major equipment and  
23 pre-fabricated modules into position.

1

2 Both the Vogtle and Summer projects are largely complete with the  
3 engineering design and procurement steps and are complete with more than  
4 one third of construction. Therefore, the predictability of costs and schedule  
5 for the projects are much higher than projects in earlier stages. The advanced  
6 status of these projects provides benchmarks for comparison of FPL's cost  
7 estimates and post-licensing schedule.

8

9 In general, the status of these projects continues to demonstrate that  
10 substantial and consistent progress is being made on deploying the next  
11 generation of nuclear projects. Further, it indicates that the construction  
12 phases of these complex projects can be managed within predictable budget  
13 and schedule parameters.

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

16 A. In February 2014, Georgia Power closed on a \$3.46 billion loan guarantee for  
17 the company's 45.7% interest in the Vogtle 3 & 4 project. Oglethorpe Power,  
18 owner of a 30% stake in the Vogtle project, also closed on a \$3.06 billion loan  
19 guarantee. Municipal Electric Authority of Georgia is pursuing finalization of  
20 a \$1.8 billion loan guarantee for its minority interest in the Vogtle project.  
21 Terms of the guarantees have not been disclosed, however Georgia Power has  
22 projected approximately \$225 million savings, on a present value basis, to its  
23 customers based on reduced interest fees provided by the loan guarantee.

1

2 SCANA continues to discuss loan guarantees for the Summer project, but has  
3 yet to commit to obtaining the guarantees.

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

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

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

17 A. The economic downturn affected forward demand and fuel price forecasts, but  
18 it also reduced the rate of price escalation and the projected costs of materials  
19 and labor. The pace of recovery is expected to be steady for the near term.  
20 Additionally, the significant shift in supply relative to demand in the natural  
21 gas industry has created a near term reduction in natural gas prices and has  
22 reduced long range forecasts for price levels. FPL Witness Sim addresses the

1 effect of changes in FPL demand forecasts and natural gas price forecasts on  
2 the economic feasibility of Turkey Point 6 & 7.

3 **Q. What do recent developments related to national and regional energy**  
4 **policy indicate with respect to the continued pursuit of the Turkey Point**  
5 **6 & 7 project?**

6 A. National energy policy remains supportive of nuclear energy in general, and  
7 new nuclear energy development in specific. Challenges to existing nuclear  
8 generators in certain markets has become a focus of the administration as  
9 these generators greatly assist in attaining emission reduction goals set by the  
10 federal government. Further, the recent closing of the loan guarantees for  
11 Vogtle underscores the desire of the federal government to promote  
12 generation technologies that reduce or eliminate greenhouse gas emissions,  
13 maintaining progress towards meeting policy goals. In general, while  
14 cautious, policymakers continue to recognize the long term benefits of and  
15 need for existing and new nuclear generation capacity.

16  
17 Regionally, the legislature amended the Nuclear Cost Recovery statute in  
18 2013. Notably, the amendments resulted in maintaining cost recovery as  
19 originally envisioned, with added opportunities for the FPSC to review the  
20 project prior to initiating major milestones. Reliability, cost-effectiveness,  
21 fuel diversity, fuel supply reliability, and price stability are still benefits to be  
22 delivered by increasing nuclear generation capacity and are still needed by  
23 FPL's customers. A future plan that does not include new nuclear capacity

1 increases and prolongs reliance on fossil fuels, increases exposure to fuel  
2 supply reliability and price volatility, and is not as effective at reducing  
3 system emissions, including greenhouse gas emissions, when compared to a  
4 plan that does include new nuclear generation capacity.

5

6

## KEY DECISIONS AND MILESTONES

7

8 **Q. What will be the focus of the project in 2014 and 2015?**

9 A. The focus will remain on completing the state Site Certification process and  
10 obtaining the federal licenses and permits necessary to construct and operate  
11 the Turkey Point 6 & 7 project. The milestones required to obtain these goals  
12 are discussed below and summarized in Exhibit SDS-11. Following state  
13 certification, the project will conduct necessary post-certification activities  
14 required to comply with conditions of the state certification and other  
15 approvals obtained to date.

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

18 A. Based on the correspondence with the ASLB on April 10, 2014, and  
19 correspondence to FPL on April 17, 2014, NRC staff estimates publication of  
20 the Draft EIS by February 2015 followed by the Final EIS in February 2016.  
21 Further, the staff estimates that the Final Safety Evaluation Report (SER) will  
22 be published in March 2017. It is anticipated that the NRC staff will develop  
23 a revised COLA review schedule later in 2014. Using these estimated dates

1 and the experience of earlier COLA review schedules, FPL estimates that the  
2 ASLB would hold a contested hearing in the later part of 2016 and, with  
3 completion of the Final SER in March 2017, the NRC would be able to make  
4 a decision on the Turkey Point Unit 6 & 7 COL in September 2017.

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

7 A. Yes. As stated in the April 17, 2014 letter, the estimates for the  
8 environmental dates are based on the NRC's current assessment of the  
9 availability of resources for the Turkey Point Unit 6 & 7 COLA review. The  
10 NRC is addressing competing priorities and reassigning resources to resolve  
11 the Waste Confidence issue, limiting the available resources required to  
12 complete the environmental review. Similarly, FPL understands that  
13 additional seismic reviews and actions related to the NRC's response to  
14 Fukushima for existing nuclear plants have placed demands on resources  
15 necessary to complete the safety review. The availability of NRC resources to  
16 complete the Turkey Point Unit 6 & 7 COLA review will be impacted by the  
17 progress made in these two important areas, and other potential developments.

18  
19 At a project level, there are two specific assumptions that may offer an  
20 opportunity to better the current milestone estimates. The SER timeline  
21 assumes two additional rounds of Requests for Additional Information of six  
22 months each, where only one round may be necessary. Additionally, the  
23 overall timeline assumes the need for the ASLB (contested) hearing. As

1 discussed previously, if the last contention is dismissed, the contested hearing  
2 would not be required and the overall schedule may gain six months.

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

4 A. Yes. The potential for this schedule change was foreseen and this type of  
5 change is at the core of how FPL has chosen to proceed on this important  
6 project. As I indicated last year before this Commission, “Things that are not  
7 under FPL’s control are federal budget issues, sequestration, and other items  
8 that affect the NRC’s resource and their resource allocation.” (See Transcript  
9 Docket 130009-EI, page 609, lines 12-15). The NRC gives priority to  
10 emerging issues that affect the existing nuclear fleet. FPL is making every  
11 prudent effort to deliver the benefits of the project on the earliest practicable  
12 schedule, while being mindful of the potential for and impact of delays. In  
13 fact, this has been FPL’s position throughout this project.

14 **Q. What specific milestones are expected related to the USACE Section  
15 404(b) process?**

16 A. As described in prior sections, the USACE will utilize the NRC EIS as its  
17 Record of Decision for the Section 404(b) permits. Thus, the timing of these  
18 permit activities closely follow the NRC process up to the point of the Final  
19 EIS. When the Draft EIS is published for comment, the USACE will publish  
20 a notice of the permit application. In parallel to the National Environmental  
21 Policy Act based EIS process, the USACE will similarly complete a review  
22 under the Clean Water Act to determine the Least Environmentally Damaging  
23 Practicable Alternative. This will include a wildlife consultation with the U.S.

1 Fish & Wildlife Service. It is expected that the Section 404(b) permits could  
2 be issued within four to six months following completion of the Final EIS in  
3 2016.

4 **Q. What specific milestones are expected related to the state Site**  
5 **Certification process in 2014 and 2015?**

6 A. The Siting Board is expected to vote on the Certification on May 13, 2014. If  
7 approved, the Certification would be issued by May 20, 2014, and a 30 day  
8 appeal period would begin. Any appeals would be heard in a District Court of  
9 Appeal and could require 12 to 18 months to resolve. FPL will take necessary  
10 actions required by Conditions of Certification (CoC) to maintain compliance.

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

13 A. The CoC identify specific activities (such as monitoring plans or reports,  
14 management plans and wildlife surveys) necessary to demonstrate compliance  
15 with the CoC and applicable regulatory requirements. The time requirements  
16 for these activities vary based on the activity in question. Some are required  
17 within a specified period of time following an event, such as Certification or  
18 completion of construction. Some precede an event, such as commencement  
19 of construction or commencement of operation. Only those activities  
20 necessary to maintain compliance with the terms and conditions of the  
21 Certification will be undertaken without specific authorization of the FPSC, in  
22 accordance with Section 366.93, Florida Statutes.

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

3 A. FPL entered into stipulations and CoC were imposed that require FPL to  
4 undertake certain activities. For example, a monitoring program associated  
5 with the Radial Collector Well (RCW) system was included as a CoC that will  
6 require significant groundwater and ecological monitoring before, during and  
7 after construction of the RCW system. This is an example of the type of  
8 activity that could not be specifically estimated prior to the Certification, but  
9 is now more defined, allowing for a better assessment in the project cost and  
10 schedule estimating process.

11 **Q. What specific milestones are expected for the Everglades National Park**  
12 **Land Exchange process in 2014 and 2015?**

13 A. The Draft EIS was published in January and comments were accepted from  
14 the public through March 18, 2014. The U.S. National Park Service will  
15 address the comments received and is expected to produce a Final EIS in fall  
16 2014. Any agreement resulting in the land exchange would occur following  
17 the Final EIS, and will likely include terms and conditions as established by  
18 the Secretary of Interior. Negotiation of those terms and conditions will be  
19 the critical path to reaching a final exchange agreement.

20 **Q. Is there any pre-construction work anticipated in 2014 and 2015?**

21 A. No. Based on current information, FPL anticipates that the licensing activities  
22 will extend beyond 2015. Therefore, only activities that are related to

1 obtaining or maintaining the necessary licenses, permits or approvals are  
2 planned to be undertaken in 2014 and 2015.

3  
4 FPL's step-wise management allows the project to continue progress to a later  
5 stage where risks can be better quantified and more specifically mitigated.  
6 Considering all project specific and industry factors, this is a responsible and  
7 prudent course of action to continue progress in creating the opportunity for  
8 new nuclear generation for our customers.

9 **Q. Are there other project decisions that have occurred or are expected in**  
10 **2014 or 2015?**

11 A. Yes. FPL executed a Forging Reservation Agreement with Westinghouse in  
12 2008 to secure manufacturing capacity for ultra-heavy forgings to support the  
13 project's original schedule. The agreement has been extended several times to  
14 allow FPL and Westinghouse to monitor industry developments and  
15 determine the best disposition of the existing agreement. The current  
16 extension expires October 31, 2016.

17

18 **PROJECT COST AND FEASIBILITY**

19

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

21 A. The overnight capital cost estimate range is \$3,750/kW to \$5,453/kW. When  
22 time-related costs such as inflation and carrying costs are included, and CODs

1 of 2022 and 2023 are assumed, the total project cost ranges from \$12.6 to  
2 \$18.4 billion.

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

5 A. An overnight cost is developed using the most current information available.  
6 An overnight cost provides an estimate of the total project costs assuming all  
7 costs occur at one point in time (“overnight”) and time-related costs  
8 (escalation, interest during construction) are not included. Further,  
9 recognizing many things could influence the overnight cost, additional  
10 analysis is conducted on each component of the overnight cost to explore how  
11 much it could vary, resulting in a cost estimate range. The overnight cost  
12 provides an indication of the cost per kilowatt (\$/kW) for the project in a  
13 given year reference. The 2013 cost estimate range was \$3,659/kW to  
14 \$5,320/kW in 2013 dollars. Updating the cost estimate range provides a cost  
15 estimate range of \$3,750/kW to \$5,453/kW in 2014 dollars. The cost estimate  
16 range has been adjusted to current year dollars by assuming a 2.5% escalation  
17 over the years between 2007 and present. While the actual escalation  
18 experienced has been generally lower, retaining this simple assumption is  
19 conservative and consistent with past year evaluations.

20

21 A breakeven cost analysis is developed by FPL’s Resource Assessment and  
22 Planning Department, and is further discussed by FPL Witness Sim. This

1 breakeven cost is provided as an overnight cost and is directly compared to  
2 the cost estimate range to assess the economic feasibility of the project.

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

6 A. No. A review was conducted to capture any potential changes and estimate  
7 the potential cost impact. No significant changes or developments have  
8 occurred in the past year that indicate any revisions are necessary to the  
9 project cost estimate range. In general, the Recommended Order resulting  
10 from the SCA preserved the project and ancillary features as proposed by  
11 FPL, and is therefore consistent with the project as envisioned in the current  
12 cost estimate range.

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

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

19

20 This is reassuring when one recognizes that the costs being experienced by the  
21 lead projects at Vogtle and Summer are informed by committed contracts, are  
22 well into the construction cycle, and include significant equipment and

1 material purchases. Therefore, the total project costs estimated for the  
2 projects in construction are more certain.

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

5 A. Negotiations on the Engineering, Procurement and Construction contract will  
6 provide more information including price, terms and schedules to support an  
7 execution plan for project construction. That information will be integrated  
8 with continued observations of the progress of preceding U.S. projects to  
9 inform and revise the Turkey Point 6 & 7 non-binding cost estimate, as  
10 warranted.

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

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

21 **Q. What is the estimate of the total project costs based on the current**  
22 **project schedule?**

1 A. As described above, there are a number of assumptions made to arrive at this  
2 estimate. Under the existing 2022/2023 in-service date schedule, and using  
3 the 2014 overnight cost estimate range, the total project cost range becomes  
4 \$12.6 billion to \$18.4 billion for the 2,200 MW project.

5 **Q. Would the project cost range be significantly higher if the in-service dates  
6 were assumed to be later in time?**

7 A. Not necessarily. Although later in-service dates would allow escalation more  
8 time to affect the total project cost, the actual impacts of such a decision  
9 would be determined by the primary market factors: material and labor costs  
10 at the time of purchase.

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

13 A. As discussed by FPL Witness Sim, the most current feasibility analysis  
14 affirms the projected cost effectiveness and benefits associated with the  
15 Turkey Point 6 & 7 project using the same basic analytical approach applied  
16 in the Need Determination proceeding for the project and the six prior NCRC  
17 filings. The analysis calculated a projected “break-even” cost for new  
18 nuclear; a cost that results in the same life cycle costs (or cumulative present  
19 value of revenue requirements) as an alternative plan relying on natural gas  
20 combined cycle units assuming a 40 year operating life. The analysis was  
21 conducted for seven scenarios comprised of combinations of three fuel and  
22 three emission cost forecasts. The projected break-even costs were higher  
23 than FPL’s non-binding cost estimate range for its Turkey Point 6 & 7 project

1 in two of seven scenarios, within the cost estimate range for four scenarios  
2 and lower than the cost estimate range in one scenario. These results indicate  
3 that the Turkey Point 6 & 7 project is quantitatively superior to the combined  
4 cycle gas alternative plan in two scenarios and four scenarios fall within the  
5 cost estimate range. The combined cycle alternative was economically  
6 superior in a scenario which assumes continued low costs for both natural gas  
7 and environmental compliance for 50 years. However, a nuclear facility is the  
8 only meaningful opportunity to deliver the qualitative benefits of fuel  
9 diversity, energy security and zero greenhouse gas emissions.

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

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

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

21 A. The results indicate that the Turkey Point 6 & 7 project is quantitatively  
22 superior to the combined cycle gas alternative plan in five scenarios, while  
23 two scenarios fall within the cost estimate range.

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

3 A. Yes. FPL Witness Sim discusses the economic factors and I discuss the non-  
4 economic factors.

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

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

9  
10 Significant progress continues on the federal, state, and local approvals  
11 required for the construction and operation of the project. During 2013, the  
12 state certification process was largely completed and should be complete in  
13 2014. Similarly, the federal licensing efforts are moving forward in 2014 and  
14 are estimated to be complete by 2017 as discussed previously. While the  
15 review process has taken longer than originally anticipated, the process is  
16 proceeding substantively as expected.

17  
18 Financing will be determined as the project proceeds through approvals to  
19 construction. The lead projects, Vogtle and Summer, have successfully  
20 obtained financing, and Vogtle has closed on a significant federal loan  
21 guarantee. FPL will continue its dialogue with the financial community to  
22 help maintain FPL's capability to obtain financing with reasonable terms.

23

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

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

9 A. Yes. The critical path to completing Turkey Point 6 & 7 requires obtaining  
10 the licenses and approvals necessary to construct and operate Turkey Point  
11 6 & 7. Once the project is closer to obtaining the approvals, FPL will be able  
12 to refine the economic assumptions and incorporate the experience of other  
13 new nuclear projects as well as how state and federal energy policies have  
14 evolved. The FPSC will continue to have the opportunity to review FPL's  
15 plans through the NCRC process.

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

18 A. Yes. As demonstrated throughout this testimony, FPL has in place an  
19 appropriate project management structure that relies on both dedicated and  
20 matrixed employees, the necessary contractors for specialized expertise, and a  
21 robust system of project controls. These resources enable the project to  
22 progress through the current licensing phase.

23

1 **2014 & 2015 PROJECT COSTS**

2

3 **Q. How are the 2014 Actual/Estimated costs and the 2015 Projected costs**  
4 **developed?**

5 A. FPL has a disciplined ground-up process to develop project budgets. This  
6 process was used in the initial project budgeting activity and is routinely  
7 reviewed and evaluated for adequacy and accuracy as additional information  
8 becomes available. The estimates of the 2014 Actual/Estimated and 2015  
9 Projected costs were completed in accordance with FPL's budget and  
10 accounting guidelines and policies. Where services are contracted, rates are  
11 provided by the contractor and reviewed to verify the charged rates are  
12 consistent with FPL's experience in the broader industry. The cost estimates  
13 were compared to other costs being incurred by the Company for similar  
14 activities and found to be reasonable.

15 **Q. Please provide a high level summary of the 2014 Actual/Estimated and**  
16 **the 2015 Projected costs presented in this filing.**

17 A. The costs associated with the Turkey Point 6 & 7 project in 2014 and 2015 are  
18 focused on supporting the licensing and permit application reviews underway.  
19 Additional costs are incurred in the Engineering & Design category associated  
20 with completing the Underground Injection Control (UIC) Exploratory Well, a  
21 necessary step towards approval of that process.

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

1 A. The pace and content of the application reviews may impact the actual costs in  
2 2014 and 2015, however this is anticipated to be significantly less than  
3 experienced in the past as the processes are coming to a close.

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

6 A. Schedule AE-6 of SDS-7 presents the 2014 Actual/Estimated costs in the  
7 following categories: 1) Licensing \$16,582,678; 2) Permitting \$588,412;  
8 3) Engineering and Design \$3,069,539; 4) Long Lead Procurement advance  
9 payments \$0; 5) Power Block Engineering and Procurement \$0; and  
10 6) Transmission \$0. Schedule P-6 of SDS-7 presents the 2015 Projected costs  
11 in the following categories: 1) Licensing \$11,027,251; 2) Permitting  
12 \$245,684; 3) Engineering and Design \$1,907,788; 4) Long Lead Procurement  
13 \$0; 5) Power Block Engineering and Procurement \$0; and 6) Transmission \$0.  
14 Table 1 of Exhibit SDS-8 provides a summary of the Actual/Estimated 2014  
15 and Projected 2015 Pre-construction costs. The descriptions in the Exhibit  
16 SDS-8 tables are illustrative and do not provide full line item detail.

17 **Q. Please describe the activities included in the Licensing category for the**  
18 **2014 Actual/Estimated costs and the 2015 Projected costs.**

19 A. For the period ending December 31, 2014, Licensing costs are estimated to be  
20 \$16,582,678 as shown on Line 3 of Schedule AE-6 of SDS-7. For the period  
21 ending December 31, 2015, Licensing costs are projected to be \$11,027,251  
22 as shown on Line 3 of Schedule P-6 of SDS-7. Table 2 of Exhibit SDS-8  
23 provides a detailed breakdown of the Licensing subcategory costs.

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

Licensing costs consist primarily of FPL employee and contractor labor and specialty consulting services necessary to support the various license and permit applications required by the Turkey Point 6 & 7 project. The license and permit applications contain project specific information, assessments and studies requested by various regulatory authorities to support the reviews leading to decisions on the technical, environmental and social acceptability of the project. Other licensing activities include costs associated with the SCA, USACE permits and delegated programs such as Prevention of Significant Deterioration and UIC. In 2014 and 2015 these costs will increasingly be related to the NRC COLA and USACE 404(b) permit processes, as the state Site Certification is concluding. A portion of the 2014 and 2015 expenditures will be used to pursue lesser approvals, and maintain compliance with those approvals received. Licensing and Permitting costs are developed in accordance with budget and accounting guidelines and policies. Some activities are common between applications, and therefore offer opportunities to coordinate efforts and manage costs. Further, these cost estimates were compared to FPL's extensive experience with the development and permitting of new generation projects in Florida and found to be reasonable.

**Q. What are the major differences between the 2014 Actual/Estimated values and those projected in the May 1, 2013 filing for the Licensing category?**

1 A. The Actual/Estimated values for the Licensing category in 2014 are higher  
2 than the amount projected for 2014 in 2013. Primarily, the increase is based  
3 on the extension of the SCA process into 2014, the extension of the  
4 Everglades National Park Land Exchange process into 2014 and the additional  
5 technical responses required by the NRC in the seismic, geological and  
6 geotechnical engineering areas.

7 **Q. Please describe the activities in the Permitting category for the 2014**  
8 **Actual/Estimated costs and the 2015 Projected costs.**

9 A. For the period ending December 31, 2014, Permitting costs are estimated to be  
10 \$588,412 as shown on Line 4 of Schedule AE-6 of SDS-7. For the period  
11 ending December 31, 2015, Permitting costs are projected to be \$245,684 as  
12 shown on Line 4 of Schedule P-6 of SDS-7. Table 3 of Exhibit SDS-8  
13 provides a detailed breakdown of the Permitting subcategory costs, including  
14 a description of items included within each category. Permitting costs include  
15 costs for the Development team, in-house legal support, and resources to  
16 conduct necessary outreach educating stakeholders about the project.

17 **Q. What are the major differences between the 2014 Actual/Estimated**  
18 **values and those projected in the May 1, 2013 filing for the Permitting**  
19 **category?**

20 A. The difference is driven by a reduction in labor costs in this category and a  
21 reduction in contingency in this category, based on anticipated completion of  
22 the state Site Certification process.

1 **Q. Please describe the activities in the Engineering and Design category for**  
2 **the 2014 Actual/Estimated costs and the 2015 Projected costs.**

3 A. The Engineering and Design activities performed in 2014 and 2015 are  
4 primarily related to supporting the permitting effort for the UIC well system.  
5 For the period ending December 31, 2014, Engineering and Design costs are  
6 estimated to be \$3,069,539 as shown on Line 5 of Schedule AE-6 of SDS-7.  
7 For the period ending December 31, 2015, Engineering and Design costs  
8 associated with preliminary engineering activities are projected to be  
9 \$1,907,788 as shown on Line 5 of Schedule P-6 of SDS-7. Table 4 of Exhibit  
10 SDS-8 provides a detailed breakdown of the Engineering and Design  
11 subcategory costs, including a description of items included within each  
12 category.

13  
14 Costs for participation in industry groups include the Electric Power Research  
15 Institute Advanced Nuclear Technology working group (with annual fees of  
16 \$275,000) and the DCWG (no external charge to participate in this group).  
17 The fee for participation in APOG is expected to be approximately \$2 million  
18 in 2014 and \$1 million in 2015. These costs are necessary to obtain the  
19 benefits of membership described earlier in this testimony.

20 **Q. What are the major differences between the 2014 Actual/Estimated**  
21 **values and those projected in the May 1, 2013 filing for the Engineering**  
22 **and Design category?**

1 A. The major difference is a carryover of costs that were not incurred in 2013 on  
2 the UIC exploratory well. Costs associated with completing the UIC injection  
3 test were incurred in early 2014, with minimal costs remaining in the year.

4 **Q. Please describe the activities in the Long Lead Procurement category for**  
5 **the 2014 Actual/Estimated costs and the 2015 Projected costs.**

6 A. For the period ending December 31, 2014 and December 31, 2015, Long Lead  
7 Procurement costs are projected to be \$0 as shown on Line 6 of Schedule AE-  
8 6 of SDS-7 and line 6 of Schedule P-6 of SDS-7. Future Long Lead  
9 Procurement costs are anticipated to be included in the Power Block  
10 Engineering and Procurement cost category.

11 **Q. Please describe the activities in the Power Block Engineering and**  
12 **Procurement category for the 2014 Actual/Estimated costs and the 2015**  
13 **Projected costs.**

14 A. For the period ending December 31, 2014, Power Block Engineering and  
15 Procurement costs are estimated to be \$0 as shown on Line 7 of Schedule AE-  
16 6 of SDS-7. For the period ending December 31, 2015, Power Block  
17 Engineering and Procurement costs are projected to be \$0 as shown on Line 7  
18 of Schedule P-6 of SDS-7.

19 **Q. Please describe the activities in the Transmission category for the 2014**  
20 **Actual/Estimated costs and the 2015 Projected costs.**

21 A. For the period ending December 31, 2014, Transmission expenditures are  
22 estimated to be \$0 as shown on Line 25 of Schedule AE-6 of SDS-7. For the

1 period ending December 31, 2015, Transmission expenditures are projected to  
2 be \$0 as shown on Line 25 of Schedule P-6 of SDS-7.

3  
4 All 2014 and 2015 costs associated with Transmission planning are related to  
5 the licensing and permitting activities, and therefore are appropriately  
6 included in those categories, described above.

7 **Q. Are FPL's Actual/Estimated 2014 and Projected 2015 Turkey Point 6 & 7**  
8 **costs reasonable?**

9 A. Yes. FPL's 2014 and 2015 expenditures are reasonable and necessary to  
10 obtain the licenses and permits which will allow FPL to carefully and  
11 methodically create the opportunity for additional reliable, cost-effective and  
12 fuel diverse nuclear generation to benefit FPL customers. FPL uses a robust  
13 system of project controls, systems, and practices to obtain a high level of  
14 control over the expenditures incurred and projected. Together, these support  
15 a finding that FPL's Actual/Estimated 2014 and Projected 2015 expenditures  
16 are reasonable.

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

18 A. Yes.

**Docket No. 140009-EI**  
**Turkey Point 6 & 7 Site Selection and Pre-construction**  
**Nuclear Filing Requirement Schedules**  
**Exhibit SDS-7, Page 1 of 1**

**SDS-7 is in the Nuclear Filing Requirements Book**

**Table 1. Pre-construction Costs**

Category	2014 Actual/ Estimated Costs (\$)	2015 Projected Costs (\$)
Licensing	16,582,678	11,027,251
Permitting	588,412	245,684
Engineering & Design	3,069,539	1,907,788
Long Lead Procurement	0	0
Power Block Engineering & Procurement	0	0
<b>Total Pre-construction Costs</b>	<b>20,240,630</b>	<b>13,180,724</b>
Transmission	0	0
<b>Total Pre-construction Costs &amp; Transmission</b>	<b>20,240,630</b>	<b>13,180,724</b>

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

**Table 2. Licensing Costs**

Category	2014 Actual/ Estimated Costs (\$)	2015 Projected Costs (\$)
NNP Team Costs - NNP FPL Payroll and Expenses, FPL Project Team Facilities, FPL Engineering, FPL Licensing	5,224,873	3,410,158
Application Production - COLA/SCA Contractor, Project Architecture & Engineering, NRC and Design Center Working Group fees	5,070,783	4,176,014
SCA Oversight	0	0
SCA Subcontractors:		
• ECT - Transmission	161,343	105,000
• Golder - Environmental	145,001	61,000
• McNabb - Underground Injection	0	0
<b>Total SCA</b>	<b>306,344</b>	<b>166,000</b>
Environmental Services - FPL Payroll and Expenses, External Support Expenses	667,400	352,751
Power Systems - FPL Payroll and Expenses, System Studies, Licensing and Permitting Support and Design Activities	48,431	40,336
Licensing Legal - FPL Payroll and Expenses, External Legal Services, Expert Witnesses	2,640,592	405,465
• Regulatory Affairs	534,475	539,499
• New Nuclear Accounting	217,622	449,854
<b>Total Regulatory Support</b>	<b>752,097</b>	<b>989,352</b>
Licensing Contingency	1,872,157	1,487,175
<b>Total Licensing</b>	<b>16,582,678</b>	<b>11,027,251</b>

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

**Table 3. Permitting Costs**

Category	2014 Actual/ Estimated Costs (\$)	2015 Projected Costs (\$)
Project Communication Support	64,394	35,247
Development - FPL Payroll and Expenses, Various Studies	311,003	123,192
Permitting - Legal Specialists Support	148,996	55,821
Permitting Contingency	64,020	31,424
<b>Total Permitting</b>	<b>588,412</b>	<b>245,684</b>

**Table 4. Engineering and Design Costs**

Category	2014 Actual/ Estimated Costs (\$)	2015 Projected Costs (\$)
Engineering and Construction Team - FPL Payroll and Expenses, Pre-construction Project Management	254,331	298,710
Pre-construction External Engineering - Construction Planning	432,386	20,000
APOG Membership Participation	1,773,855	1,000,000
EPRI Advanced Nuclear Technology	275,000	275,000
FEMA Fees	0	15,000
Engineering and Design Contingency	333,968	299,078
<b>Total Engineering and Design</b>	<b>3,069,539</b>	<b>1,907,788</b>

*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

**\$644 million**

Projected lifetime fossil fuel savings for customers

40 years:  
**\$64 billion**  
60 years:  
**\$173 billion**



Enough energy to power  
**1,329,000 customer homes**  
without burning coal,  
natural gas or foreign oil

**Fewer greenhouse gas emissions**

CO<sub>2</sub> reduction of



U.S. EPA annual equivalent of removing more than



**Decreased reliance on natural gas and foreign oil**

Annual fossil fuel reduction of the equivalent of  
**28 million barrels of oil**  
or  
**177 million mMBTU of natural gas**

FPL's reliance on natural gas reduced by

**14%**  
beginning in the first full year of operation

**Higher electric grid stability**

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



## 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

\$ **10.4**  
**billion\***

over the life  
of the plant

\* Net present value in 2014 dollars is almost \$300 million

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

Licensing Activity	2014	2015	2016	2017
<b>Site Certification</b>				
Siting Board/Certification	■			
Potential Appeal	■			
Final Unappealable Certification		■		
<b>Army Corps of Engineers Application</b>				
404(b) Public Notice		■		
Least Environmentally Damaging Practicable Alternative Review	■			
Final Record of Decision			■	
Permit Issued			■	
<b>Combined License Application (COLA)</b>				
Revised COLA Schedule	■			
Safety Review	■			
Advanced Final Safety Evaluation Report (SER)			■	
Advisory Committee on Reactor Safeguards Meeting				■
Final SER				■
Environmental Review	■			
Draft Environmental Impact Statement (EIS)		■		
Completion of EIS	■			
Final EIS			■	
Atomic Safety and Licensing Board Hearing			■	
NRC COL Decision				■

All dates are estimated based on recent state or federal communications

**CERTIFICATE OF SERVICE  
DOCKET NO. 140009-EI**

I HEREBY CERTIFY that a true and correct copy of FPL's Petition for Approval of Nuclear Power Plant Cost Recovery Amount for the Year 2015, with accompanying testimony and exhibits, was served electronically this 1st day of May, 2014 to the following:

Keino Young, Esq.  
Michael Lawson, Esq.  
Division of Legal Services  
Florida Public Service Commission  
2540 Shumard Oak Blvd.  
Tallahassee, Florida 32399-0850  
[kyoung@psc.state.fl.us](mailto:kyoung@psc.state.fl.us)  
[MLAWSON@PSC.STATE.FL.US](mailto:MLAWSON@PSC.STATE.FL.US)

J. R. Kelly, Esq.  
Charles Rehwinkel, Esq.  
Joseph McGlothlin, Esq.  
Erik L. Sayler, Esq.  
Office of Public Counsel  
c/o The Florida Legislature  
111 West Madison Street, Room 812  
Tallahassee, Florida 32399  
[Kelly.jr@leg.state.fl.us](mailto:Kelly.jr@leg.state.fl.us)  
[Rehwinkel.Charles@leg.state.fl.us](mailto:Rehwinkel.Charles@leg.state.fl.us)  
[mcglothlin.joseph@leg.state.fl.us](mailto:mcglothlin.joseph@leg.state.fl.us)  
[Sayler.Erik@leg.state.fl.us](mailto:Sayler.Erik@leg.state.fl.us)

J. Michael Walls, Esq.  
Blaise N. Gamba, Esq.  
Carlton Fields Jordan Burt, P.A.  
P.O. Box 3239  
Tampa, Florida 33601-3239  
[mwalls@cfjblaw.com](mailto:mwalls@cfjblaw.com)  
[bgamba@cfjblaw.com](mailto:bgamba@cfjblaw.com)  
Attorneys for Duke Energy

John T. Burnett, Esq.  
Dianne M. Triplett, Esq.  
Progress Energy Service Company, LLC  
299 First Avenue North  
St. Petersburg, Florida 33701  
[john.burnett@duke-energy.com](mailto:john.burnett@duke-energy.com)  
[dianne.triplett@duke-energy.com](mailto:dianne.triplett@duke-energy.com)  
Attorneys for Duke Energy

Robert Scheffel Wright  
John T. LaVia  
Gardner Bist Wiener Wadsworth Bowden  
Bush Dee LaVia & Wright, P.A.  
1300 Thomaswood Drive  
Tallahassee, FL 32308  
Phone: 850-385-0070  
FAX: (850) 385-5416  
[Schef@gbwlegal.com](mailto:Schef@gbwlegal.com)  
[Jlavia@gbwlegal.com](mailto:Jlavia@gbwlegal.com)  
Attorneys for FRF

Matthew Bernier, Sr. Counsel  
Mr. Paul Lewis, Jr.  
106 East College Ave., Suite 800  
Tallahassee, Florida 32301-7740  
[Matthew.bernier@duke-energy.com](mailto:Matthew.bernier@duke-energy.com)  
[paul.lewisjr@duke-energy.com](mailto:paul.lewisjr@duke-energy.com)

James W. Brew, Esq.  
F. Alvin Taylor, Esq.  
Brickfield Law Firm  
1025 Thomas Jefferson Street, N.W., 8<sup>th</sup> Floor  
Washington, D.C. 20007  
[jbrew@bbrslaw.com](mailto:jbrew@bbrslaw.com)  
[ataylor@bbrslaw.com](mailto:ataylor@bbrslaw.com)  
Attorneys for PCS Phosphate-White Springs

Jon C. Moyle, Jr., Esq.  
Moyle Law Firm, P.A.  
118 North Gadsden Street  
Tallahassee, Florida 32301  
[jmoyle@moylelaw.com](mailto:jmoyle@moylelaw.com)  
Attorney for FIPUG

By: s/ Jessica A. Cano  
Jessica A. Cano  
Fla. Bar No. 0037372