BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 130009-EI
FLORIDA POWER & LIGHT COMPANY

MAY 1, 2013

IN RE: NUCLEAR POWER PLANT COST RECOVERY FOR THE YEAR ENDING DECEMBER 2014

TESTIMONY & EXHIBITS OF:

STEVEN R. SIM

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF STEVEN R. SIM

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May 1, 2013

Q. Please state your name and business addresses.

A. My name is Steven R. Sim, and my business address is 9250 West Flagler Street, Miami, Florida 33174.

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

A. I am employed by Florida Power & Light Company (FPL) as Senior Manager of Integrated Resource Planning in the Resource Assessment & Planning department.

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

A. I supervise and coordinate analyses that are designed to determine the magnitude and timing of FPL's resource needs and then develop the integrated resource plan with which FPL will meet those resource needs.

Q. Please describe your education and professional experience.

A. I graduated from the University of Miami (Florida) with a Bachelor's degree in Mathematics in 1973. I subsequently earned a Master's degree in Mathematics from the University of Miami (Florida) in 1975 and a Doctorate in Environmental Science and Engineering from the University of California at Los Angeles (UCLA) in 1979.

While completing my degree program at UCLA, I was also employed full-time as a Research Associate at the Florida Solar Energy Center during 1977 - 1979. My responsibilities at the Florida Solar Energy Center included an evaluation of Florida consumers' experiences with solar water heaters and an analysis of potential renewable energy resources including photovoltaics, biomass, wind power, etc., applicable in the Southeastern United States.

In 1979 I joined FPL. From 1979 until 1991 I worked in various departments including Marketing, Energy Management Research, and Load Management, where my responsibilities included the development, monitoring, and cost-effectiveness analyses of demand side management (DSM) programs. In 1991 I joined my current department, then named the System Planning Department, where I held different supervisory positions dealing with integrated resource planning. In late 2007 I assumed my present position.

Q. What is the purpose of your testimony?

A. The primary purpose of my testimony is to present the results of the 2013 economic analyses for the new FPL nuclear units, Turkey Point 6 & 7, using updated assumptions and addressing 7 scenarios of future fuel cost and environmental compliance cost forecasts. In my testimony I will refer to these analyses as the 2013 feasibility analyses for the Turkey Point 6 & 7 project. The results of these analyses were that the Turkey Point 6 & 7 project is projected to be the economic choice in 5 of these 7 scenarios.

In addition, I will briefly discuss FPL's portfolio approach in resource planning and the role of additional nuclear energy in that portfolio approach. I will also discuss the assumptions used in the 2013 feasibility analyses. I will also present the results of additional analyses that further quantify the projected benefits of the Turkey Point 6 & 7 project. Finally, I will briefly discuss the recently completed Extended Power Uprate (EPU) project, particularly the types of benefits that the project is already delivering to FPL's customers and which it will continue to deliver to FPL's customers for decades to come.

The 2013 feasibility analyses of the Turkey Point 6 & 7 project are presented to satisfy the requirement of Subsection 5(c)5 of the Florida Administrative Code Rule 25-6.0423, Nuclear Power Plant Cost Recovery which states "By May 1 of each year, along with the filings required by this paragraph, a utility shall submit for Commission review and approval a detailed analysis of the long-term feasibility of completing the power plant." Other feasibility-related topics for the Turkey Point 6 & 7 project are discussed by FPL Witness Scroggs.

Q. Please summarize your testimony.

A. Completion of the two new nuclear units, Turkey Point 6 & 7, continues to be projected as the economic choice for FPL's customers in new feasibility analyses using updated assumptions. The results of FPL's 2013 feasibility analyses indicate that completing the project is projected to be economic for

FPL's customers in the majority (5 of 7) of scenarios analyzed. The bases for this conclusion are summarized in Exhibit SRS-1. This exhibit presents a number of results from FPL's 2013 analyses of the Turkey Point 6 & 7 project including, but not limited to: (i) the number of future fuel cost and environmental cost scenarios in which the project is projected to be cost-effective; (ii) projected fuel savings for FPL's customers; (iii) reduced reliance upon fossil fuels (i.e., fuel diversity); and (iv) projected carbon dioxide (CO_2) reductions. These results, and results of other analyses and calculations, are discussed later in my testimony.

These results, whether examined individually or as a whole, present a strong case for the Turkey Point 6 & 7 project. For example, over the life of Turkey Point 6 & 7, customers are projected to save at least $78 billion (nominal) in fuel costs, based on the Medium Fuel Cost forecast. Additionally, the project will produce energy that otherwise would have required the consumption of substantial amounts of natural gas or millions of barrels of oil annually, and will reduce system CO_2 emissions by millions of tons. In short, completing Turkey Point 6 & 7 continues to be projected as solidly cost-effective and the new nuclear units are projected to be valuable resource additions for FPL's customers.

In regard to the EPU project, this project was completed in April of this year. The increased nuclear capacity that has been delivered by the EPU project is

already benefiting customers and will continue to do so for decades to come. The types of benefits being provided to FPL's customers by the additional nuclear capacity resulting from the EPU project include: (i) over 500 MW of increased firm capacity; (ii) baseload energy delivered from the increased nuclear capacity; (iii) increased fuel diversity for the FPL system due to the additional energy produced by the increase in nuclear capacity; (iv) significant reductions in system fossil fuel usage and system air emissions; (v) an excellent hedge against both increases in fossil fuel costs and environmental regulations and/or costs; and (vi) additional generating capacity located in the Southeastern Florida region (Miami-Dade and Broward Counties) that helps maintain a balance between generation and electrical load in that region.

Q. Would you please briefly explain what you mean by FPL's portfolio approach to resource planning and what part additional nuclear capacity such as Turkey Point 6 & 7 plays in that portfolio approach?

A. Yes. As with all economic analyses, FPL's 2013 economic analyses of the Turkey Point 6 & 7 project provides a "snapshot" of the projected customer benefits associated with Turkey Point 6 & 7 based on current project assumptions, forecasts of numerous costs, and resource planning assumptions. The 2013 feasibility analyses, as with prior feasibility analyses, examine potential future scenarios that result from combining various fossil fuel price forecasts and environmental compliance cost forecasts. Of course, the actual economic performance of FPL's system, including the impacts of future fuel prices, etc., cannot be known until after the fact. That is why FPL examines

the projected impacts of resource additions such as new nuclear capacity over a wide range of potential future scenarios.

The inability to be able to predict with confidence future fuel and environmental compliance costs is a key reason why FPL not only performs these analyses based on multiple forecasts and scenarios, but also why FPL strives for diversity in regard to system resources and fuels in what I will refer to as a portfolio approach to resource planning. Because the price of nuclear fuel is unrelated to fossil fuel prices, and because nuclear power plants produce no emissions such as sulfur dioxide (SO_2), nitrogen oxides (NO_x), or carbon dioxide (CO_2) in the process of generating electricity, additional nuclear capacity is a superb hedge against fossil fuel price volatility and increases in environmental compliance costs. Diversification also improves system reliability.

The Turkey Point 6 & 7 nuclear project will help reduce FPL's reliance on natural gas that is currently delivered into the state of Florida by only two natural gas pipelines. In addition, the Turkey Point 6 & 7 nuclear project will also help further reduce the usage of oil, including foreign oil, by FPL's system. Through diversification generally, and the addition of Turkey Point 6 & 7, FPL is working to keep its electric rates, and thus the resulting bills for its customers, low over the long term while also providing highly reliable electric service.

The current low cost of natural gas is a great thing for FPL's customers because it allows FPL to produce electricity with relatively low fuel costs. This results in lower electric rates for all of FPL's customers as long as natural gas prices remain low. Therefore, FPL has been increasing its use of natural gas to benefit its customers and now supplies approximately 2/3 of all of the electricity it provides to customers by burning natural gas.

However, this increased use of natural gas also represents a growing reliance on natural gas. In turn, this growing reliance on natural gas results in increased risk in regard to potential future changes in natural gas cost and availability.

Consequently, FPL's resource planning takes a balanced portfolio approach to maximize the benefits to customers of using currently low cost natural gas while also taking steps to minimize the risks inherent in having a high reliance on natural gas. Among the steps being taken to minimize this risk are: (i) burning natural gas as efficiently as possible through the addition of multiple high-efficiency combined cycle (CC) generating units, (ii) enhancing the availability of natural gas by pursuing a third natural gas pipeline into Florida (which may also put downward pressure on delivered natural gas prices), (iii) maintaining the ability to continue to burn fuel oil in existing steam generating units by installing electrostatic precipitators at these units, (iv) diversifying

FPL's fuel mix by pursuing additional renewable energy, and (v) significantly diversifying FPL's fuel mix by adding additional nuclear capacity through the recently completed EPU project and the Turkey Point 6 & 7 project.

Additional nuclear capacity is an important aspect of this balanced portfolio approach because it is the only resource option available that can provide baseload, firm capacity at even lower fuel costs than natural gas and which does so using no fossil fuels and producing zero air emissions. In regard to the latter two points - no fossil fuel use and producing zero air emissions - nuclear capacity serves as an excellent hedge against increasing natural gas costs and increasing environmental costs as previously mentioned. These hedge aspects of nuclear capacity are especially valuable attributes in a balanced portfolio approach to serving FPL's customers both today and in the future.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following 9 exhibits:

- Exhibit SRS-1: Summary of Results from FPL's 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project (Plus Results from Additional Analyses);
- Exhibit SRS-2: Comparison of Key Assumptions Utilized in the 2012 and 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project: Projected Fuel Costs (Medium Fuel Cost Forecast);

- Exhibit SRS-3: Comparison of Key Assumptions Utilized in the 2012 and 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project: Projected Environmental Compliance Costs (Env II Forecast);
- Exhibit SRS-4: Comparison of Key Assumptions Utilized in the 2012 and 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project: Summer Peak Demand Load Forecast;
- Exhibit SRS-5: Projection of FPL's Resource Needs Through 2025;
- Exhibit SRS-6: Comparison of Key Assumptions Utilized in the 2012 and 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project: Other Assumptions;
- Exhibit SRS-7: The Two Resource Plans Utilized in FPL's 2013 Feasibility Analyses of Turkey Point 6 & 7;
- Exhibit SRS-8: 2013 Feasibility Analyses Results for the Turkey Point 6 & 7 Project: Total Costs, Total Cost Differentials, and Breakeven Costs for All Fuel and Environmental Compliance Cost Scenarios in 2013$ (millions, CPVRR, 2013-2063); and,
- Exhibit SRS-9: EPU Project Benefits to FPL's Customers.

I. 2013 Feasibility Analyses – Analytical Approach

Q. Please provide an overview of the basic analytical approach used for evaluating the Turkey Point 6 & 7 project.

A. The basic analytical approach in the feasibility analyses of Turkey Point 6 & 7 is to compare competing resource plans. FPL utilizes resource plans in its analyses in order to ensure that all relevant impacts to the FPL system are accounted for.

The analysis of each resource plan is a complex undertaking. For each resource plan, annual projections of system fuel costs and emission profiles are developed for various scenarios of fuel cost/environmental compliance costs using a sophisticated production costing model. This model, the P-MArea model, simulates the FPL system and dispatches all of the generating units on an hour-by-hour basis for each year in the analysis. The resulting fuel cost and emission profile information is then combined with projected annual capital costs, plus other fixed and variable costs for each resource plan. In this way, a comprehensive set of projected annual costs, for each year of the analysis, is developed for each resource plan.

One resource plan includes the Turkey Point 6 & 7 units. The other resource plan includes instead an alternate resource option that competes with these two nuclear units. The competing alternate resource option is new highly fuel-efficient CC generating capacity consistent with the CC capacity currently being installed through FPL's modernization projects.

The competing resource plans are then analyzed over a multi-year period. This approach allows FPL's analyses to account for both short-term and long-term economic impacts of the resource options being evaluated. FPL's 2013 feasibility analyses address these economic impacts. In addition, my testimony provides a discussion of three non-economic impacts to the FPL system: system fuel savings, increased system fuel diversity, and system emission reductions, which will result from the Turkey Point 6 & 7 project.

Q. Has the Florida Public Service Commission provided guidance regarding what is required in the feasibility analyses?

A. Yes. The Florida Public Service Commission (FPSC) first provided guidance in its affirmative determination of need order for Turkey Point 6 & 7 (Order No. PSC-08-0237-FOF-EI, page 29), when it stated:

> "FPL shall provide a long-term feasibility analysis as part of its annual cost recovery process which, in this case, shall also include updated fuel costs, environmental forecasts, break-even costs, and capital cost estimates. In addition, FPL should account for sunk costs. Providing this information on an annual basis will allow us to monitor the feasibility regarding the continued construction of Turkey Point 6 and 7."

In the FPSC's 2009 NCRC order (Order No. PSC-09-0783-FOF-EI, page 14), the FPSC quoted its need determination order and reiterated that these elements are "necessary to satisfy Rule 25-6.0423(5)(c)5, F.A.C."

This guidance from the FPSC clearly distinguishes "sunk costs" from "updated capital cost estimates" in regard to feasibility analyses of nuclear projects. Consequently, FPL has effectively removed sunk costs in its calculation of breakeven costs for the feasibility analyses of Turkey Point 6 & 7. FPL's approach to sunk costs complies with the above mentioned Rule, which directs FPL to evaluate "completing" the project. FPL's approach to sunk costs also follows the guidance provided by the FPSC, and was expressly approved for the Turkey Point 6 & 7 analyses by the FPSC in its 2011 NCRC order (Order No. PSC-11-0547-FOF-EI, pages 17-18 and 38).

Q. Was the analytical approach used in FPL's 2013 feasibility analyses of Turkey Point 6 & 7 similar to the approach used in the Determination of Need filings for this project, and in the feasibility analyses of this project that were presented in previous NCRC filings?

A. Yes. The analytical approach that was used in the 2013 feasibility analyses for the Turkey Point 6 & 7 project is very similar to the approach used in the 2007 Determination of Need filing and in the feasibility analyses presented in the 2008 through 2012 NCRC filings.

Q. Please describe the economic perspective used in the analytical approach for the Turkey Point 6 & 7 project.

A. This perspective is the calculation of breakeven overnight capital costs, in terms of both CPVRR costs and overnight construction costs in $/kW, for the new nuclear units. This same perspective was utilized in the 2007 Determination of Need filing, and in the 2008 through 2012 NCRC filings, for the Turkey Point 6 & 7 project. In later years, as more information becomes available regarding the cost and other aspects of the new nuclear units, another perspective may emerge as more appropriate.

II. 2013 Feasibility Analyses – Updated Assumptions

Q. Do FPL's 2013 feasibility analyses utilize updated assumptions for the specific information referred to in the previously mentioned FPSC Order?

A. Yes. FPL typically seeks to utilize a set of updated assumptions in its resource planning work. By early 2013, FPL updated these assumptions and is using them in its 2013 resource planning work including the nuclear analyses presented in this docket.

Five informational items were listed in Order No. PSC-08-0237 that should be updated and included in FPL's annual long-term feasibility analyses of Turkey Point 6 & 7. These five items are:

1) fuel forecasts;

2) environmental forecasts;

3) breakeven costs;

4) capital cost estimates; and,

5) sunk costs.

FPL's 2013 feasibility analyses for the Turkey Point 6 & 7 project utilized FPL's current assumptions for four of these five items and calculated the current projected value for the fifth item. FPL's 2013 feasibility analyses for the Turkey Point 6 & 7 project included current assumptions for the following four items: items 1), 2), 4), and 5). The remaining item, item 3) breakeven costs, is a result of the analyses (as opposed to an assumption). The results of FPL's 2013 feasibility analyses present breakeven costs for the Turkey Point 6 & 7 project in terms of CPVRR costs and in terms of overnight construction costs in $/kw.

Q. Do FPL's feasibility analyses include FPL's updated assumptions for information other than these 5 items?

A. Yes. FPL also updated a number of other assumptions in early 2013 in preparation for all of its 2013 resource planning work. Consequently, these other updated assumptions are also included in FPL's 2013 feasibility analyses of the Turkey Point 6 & 7 project. A partial listing of these other assumptions include: FPL's load forecast and cost and performance assumptions for new CC capacity.

Q. Please discuss the changes in the forecasted values for fuel costs and environmental compliance costs between the forecasts utilized in the 2013

feasibility analyses and those that were used in the 2012 feasibility analyses.

A. Exhibits SRS-2 and SRS-3 provide these comparisons. Exhibit SRS-2 provides 2012 and 2013 forecasted Medium Fuel Cost values for selected years for natural gas, oil, and nuclear fuel costs. As shown in this exhibit, the 2013 Medium Fuel Cost forecast for natural gas is lower than the 2012 forecast through the year 2035, then higher in subsequent years, consistent with the independent external forecasts and escalation rates relied upon by FPL. A comparison of the forecasted prices for 1% sulfur oil shows that these 2013 forecasted values are lower than in the 2012 forecast through the year 2030, then are also higher in subsequent years. In regard to forecasted nuclear fuel costs, the 2013 forecasted prices are unchanged from the 2012 forecasted prices.

Exhibit SRS-3 presents similar 2012 and 2013 comparative information for forecasted Env II (i.e., mid-level) environmental compliance costs for three types of air emissions: SO_2, NO_x, and CO_2. As shown in the exhibit, there has been no change in projected environmental compliance costs for these three types of air emissions from what was assumed in FPL's 2012 feasibility analyses. The decision not to change these projected compliance costs was made after a discussion in early 2013 with the consultant ICF whose work has been the basis for FPL's environmental compliance cost projections for all of FPL's nuclear analyses from the need filing in 2007 through the present.

ICF's position was that nothing had occurred on either the legislative or regulatory fronts since the 2012 environmental compliance cost projections had been developed that would require a change in these cost projections. As in FPL's 2012 analyses, these projected environmental compliance costs are lower than the projected costs used in FPL's nuclear analyses from 2007 through 2011.

Q. Are any of the fuel cost forecasts or environmental compliance cost forecasts considered the "most likely" forecast?

A. FPL does not consider any fuel cost forecast or environmental cost forecast as the "most likely" cost forecast. FPL's scenario approach is designed to provide a range of possible future fuel and environmental compliance costs.

Q. Please discuss FPL's 2013 load forecast and how it compares to FPL's 2012 load forecast.

A. Exhibit SRS-4 presents the 2012 and 2013 Summer peak load forecasts. As shown in Column (3) of this exhibit, the 2013 forecast of Summer peak load is generally lower than the 2012 forecast.

In addition, Exhibit SRS-4 also provides a projection of the annual and cumulative growth in Summer peak loads associated with the 2013 peak load forecast. As shown in column (5) of this exhibit, FPL projects a cumulative growth in Summer peak load of approximately 4,314 MW by 2022, and 4,992 MW by 2023; i.e., the years in which the two new nuclear units, Turkey Point 6 & 7, are projected to go in-service. Significant growth in peak loads is also

forecast to continue after 2023 as shown by the projected cumulative growth in Summer peak load value for 2025 of 6,364 MW.

Q. Based on this projected growth in Summer peak load, what is FPL's projected need for new resources?

A. FPL's projected need for new resources, assuming that the resource need is met by new generating capacity, is presented in Exhibit SRS-5. This projection assumes that FPL is implementing DSM through the year 2019 at a level consistent with the FPSC's 2011 DSM Plan order (Order No. PSC-11-0346-PAA-EG) and also assumes an additional 100 MW per year of DSM are implemented in the years 2020 through 2025. This exhibit shows that, without the incremental capacity from Turkey Point 6 & 7, and with no new generating resources added after the modernization of Port Everglades in 2016 except for the planned addition of 180 MW of new power purchase capacity in 2021, FPL has a need for new resources starting in 2022 and this need increases every year thereafter. The projected resource need in 2022 is 304 MW of new generating capacity and this projected resource need increases to 2,652 MW by 2025.

Q. What other assumptions changed from the 2012 analyses to the 2013 analyses?

A. Exhibit SRS-6 presents the 2012 and 2013 projections for 10 other assumptions that were utilized in the feasibility analyses of the Turkey Point 6 & 7 project.

Q. Please discuss the first five assumptions.

A. These five assumptions are:

1) the number of environmental compliance cost scenarios;
2) financial/economic assumptions;
3) the projected capital cost of competing CC capacity;
4) the projected heat rate of competing CC capacity; and,
5) the projected cost of firm gas transportation.

In regard to the number of environmental compliance cost scenarios utilized in FPL's 2013 feasibility analyses, FPL is again using three scenarios in its 2013 resource planning work: Env I (representing low CO_2 compliance costs), Env II (representing medium CO_2 compliance costs), and Env III (representing high CO_2 compliance costs).

FPL's financial/economic assumptions used in the 2013 feasibility analyses have changed from those used in the 2012 feasibility analyses due to the outcome of the recent base rate case. The current financial/economic assumptions include the following: return on equity (ROE) is 10.5%; the allowed cost of debt is 4.79%; the debt-to-equity ratio is 40.38%/59.62%.; and the associated discount rate is 7.45%.

The remaining three assumptions involve the costs of the competing new CC capacity used in the feasibility analyses. FPL's current projected (generator only) capital cost of CC capacity is $798/kw in 2018$. The current projected

heat rate of this CC capacity is 6,334 BTU/kwh, and the projected firm gas transportation cost is $1.98/mmBTU in 2018. The projected capital cost and heat rate of the CC unit are lower than projected in 2012. These changes in projected capital cost and heat rate of the CC unit are based on updated estimates for cost and performance of new CC units. There has been no change in the projected firm gas transportation cost.

Q. Please discuss the remaining five assumptions.

A. These five assumptions are:

6) assumed in-service dates for Turkey Point 6 & 7;

7) assumed operating lives of Turkey Point 6 & 7;

8) non-binding capital cost estimate for the new nuclear units;

9) previously spent capital costs that are excluded from the 2013 feasibility analyses; and,

10) the cumulative annual capital expenditure percentages for Turkey Point 6 & 7.

The first of these five assumptions, the projected in-service dates, for planning purposes, of Turkey Point 6 & 7 are unchanged from the 2022 and 2023 in-service dates used in the 2012 feasibility analyses. FPL Witness Scroggs' testimony addresses these dates which represent the earliest practical deployment dates for the new nuclear units.

The second of these assumptions is the assumed operating lives of the two new nuclear units. For purposes of the 2013 feasibility analyses, FPL is again assuming a 40-year operating life for each of the two units. Although this assumption is consistent with the operating life assumption used in prior feasibility analyses, FPL believes this is a conservative assumption.

Two of FPL's four existing nuclear units, Turkey Point 3 & 4, have now been operating for more than 40 years. Furthermore, all four of FPL's nuclear units have received a license extension from the Nuclear Regulatory Commission (NRC) enabling each unit to operate for a total of 60 years. In addition, FPL's parent company, NextEra Energy (NEE), owns and operates two other nuclear units, Point Beach 1 & 2, that have operated for more than 40 years. These two nuclear units, plus a third nuclear unit owned and operated by NEE (Duane Arnold), have also been granted a license extension from the NRC enabling each unit to operate for a total of 60 years. Therefore, FPL believes that its current 40-year operating life assumption for Turkey Point 6 & 7 is a conservative choice.

The third of these assumptions is the non-binding cost estimate for constructing Turkey Point 6 & 7. The range of costs used in the 2013 feasibility analyses is $3,659/kw to $5,320/kw in 2013$. This reflects an updating of the projected cost range. FPL Witness Scroggs' testimony also discusses the updating of this assumption.

The fourth of these assumptions is the previously spent capital costs that are excluded in the 2013 feasibility analysis. In order to account for "sunk" capital costs for the Turkey Point 6 & 7 project, FPL is excluding approximately $192 million of sunk costs that have already been spent through December 31, 2012. This represents an increase of approximately $35 million compared to the approximately $157 million sunk cost value utilized in FPL's 2012 feasibility analyses. FPL Witness Powers discusses the sunk cost value of the Turkey Point 6 & 7 project in her testimony.

The fifth assumption is the cumulative annual capital expenditure percentages for the construction of Turkey Point 6 & 7. The annual expenditure percentage values used in the 2013 feasibility analyses are largely unchanged from the values used in the 2012 feasibility analyses.

Q. It is clear that a number of changes in assumptions were made between those used in the 2012 feasibility analyses and those used in the 2013 feasibility analyses. Were all of these assumption changes favorable to the projected economics of the Turkey Point 6 & 7 project?

A. No. Assumption changes are made on a regular basis by FPL in order to utilize the best and most current information available in its resource planning analyses. Typically, updates to some assumptions are favorable, and changes to other assumptions are unfavorable, for any specific resource option or project.

This was indeed the case for the Turkey Point 6 & 7 project in regard to the changes in assumptions from those used in the 2012 feasibility analyses to those used in the 2013 feasibility analyses. For the Turkey Point 6 & 7 project, some updated assumptions (such as the projected lower capital costs and projected lower heat rates for new CC unit capacity) are unfavorable for the project (although favorable overall for FPL's customers).

All of FPL's updated assumptions, whether favorable or unfavorable for the Turkey Point 6 & 7 project, were included in FPL's 2013 feasibility analyses of the project.

III. The Turkey Point 6 & 7 Project

Q. What resource plans were used to perform the 2013 feasibility analyses of Turkey Point 6 & 7?

A. The two resource plans that were utilized in the 2013 feasibility analyses of Turkey Point 6 & 7 are presented in Exhibit SRS-7. As shown in this exhibit, the two resource plans are identical through 2021. The resource plans differ starting in 2022, with the Resource Plan with Turkey Point 6 & 7 adding the two 1,100 MW nuclear units, one in 2022 and one in 2023. The Resource Plan without Turkey Point 6 & 7 adds two 1,269 MW CC units, one in 2022 and one in 2024. Both resource plans then add the same amount of CC filler

unit capacity through the rest of the analysis periods although the timing of the filler unit additions varies between the two resource plans.

Q. What were the results of the 2013 feasibility analyses for Turkey Point 6 & 7?

A. The results of the 2013 feasibility analyses for Turkey Point 6 & 7 are presented in Exhibit SRS–8. The calculated breakeven nuclear capital costs in overnight construction costs in terms of $/kW in 2013$ are presented in Column (6) of this exhibit. The results in Column (6), when compared to FPL's non-binding estimated range of capital costs in 2013$ of $3,659/kW to $5,320/kW, show that the projected breakeven capital costs for Turkey Point 6 & 7 are above this range in 5 of 7 scenarios of fuel cost and environmental compliance cost. In the remaining 2 scenarios, the projected breakeven capital cost is within the non-binding estimated capital cost range. Thus Turkey Point 6 & 7 is projected to be the economic choice in the majority (5 of 7) of the cases.

It is informative to note that both of the remaining 2 scenarios, in which the projected breakeven costs for Turkey Point 6 & 7 are projected to be within the non-binding cost estimate range, these scenarios are based on the Env I forecast which represents an assumption of relatively low environmental compliance costs continuing every year for the next 50 years. In addition, one of these remaining scenarios is also based on the Low Fuel Cost forecast

which represents an assumption of relatively low natural gas costs continuing every year for the next 50 years.

Also, as evidenced by the CPVRR values for these 2 remaining scenarios, compared to the CPVRR values for all other scenarios, FPL's customers would still benefit greatly if these assumed low costs for natural gas and/or environmental compliance were to materialize. For example, using the projected CPVRR costs for the Resource Plan with Turkey Point 6 & 7, the projected CPVRR costs under the Medium Fuel Cost/Env II scenario are $152,803 million, but are projected to be significantly lower, $125,585 million, under the Low Fuel Cost/Env I scenario. Therefore, although the economics for the Turkey Point 6 & 7 project are diminished under a scenario of lower fuel and environmental compliance costs (i.e., Low Fuel Cost/Env I), FPL's customers are still projected to benefit significantly under such a scenario by more than $27,000 million CPVRR.

Q. In addition to the results of these economic analyses, did FPL's 2013 feasibility analyses identify any additional advantages for FPL's customers that are projected to be derived from the Turkey Point 6 & 7 project?

A. Yes. I will discuss three other advantages to FPL's customers that are projected to result from the Turkey Point 6 & 7 project:

1) system fuel savings;

2) system fuel diversity; and,

3) system CO2 emission reductions.

These advantages for the Turkey Point 6 & 7 project will be discussed by using the results from the 2013 feasibility analyses for the Medium Fuel Cost, Env II scenario.

In regard to system fuel savings, the CPVRR values for the system fuel savings for each scenario of fuel cost and environmental compliance cost is accounted for in the respective total CPVRR savings number for that scenario. As shown in Exhibit SRS-8, these CPVRR savings values are then translated into breakeven costs. Consequently, the system fuel savings have already been accounted for in the breakeven cost values. However, it is informative to also look at the annual nominal fuel savings projections for Turkey Point 6 & 7.

In 2024, the first year in which both of the new nuclear units are in service for a full year, Turkey Point 6 & 7 are projected to save FPL's customers approximately $804 million (nominal) in fuel costs for that year.

Q. What are the projected fuel savings over the operating life of the Turkey Point 6 & 7 units and how does those projections compare with FPL's current total system annual fuel cost?

A. The total fuel savings for FPL's customers is projected to be approximately $78 billion (nominal). FPL's 2012 annual total system fuel cost was

approximately $3.3 billion. Therefore, the projected fuel savings over the life of the Turkey Point 6 & 7 project is equivalent to serving FPL's more than 4.6 million customer accounts (representing approximately 8.9 million people) for approximately 24 years at zero fuel costs for FPL's customers calculated at last year's fuel costs.

Q. Please discuss the projected fuel diversity and CO_2 emission reduction benefits for Turkey Point 6 & 7.

A. Regarding system fuel diversity, in 2024 the relative percentages of the total energy supplied by FPL that is projected to be generated by natural gas and nuclear, without Turkey Point 6 & 7, are approximately 71% and 21%, respectively. With Turkey Point 6 & 7, these projected percentages change to approximately 58% for natural gas and 35% for nuclear. Thus FPL is projected to be far less reliant on natural gas, and more reliant upon nuclear energy, by approximately 14% each.

These percentage changes in system fuel use for a system the size of FPL's are significant. This can be demonstrated by looking at the projected amount of energy that will be supplied by the two new nuclear units in 2024. That value is projected to be approximately 17.7 million MWh. The current forecasted average annual energy use per residential customer in 2024 is 15,043 kWh. Therefore, the projected output from Turkey Point 6 & 7 in 2024 will serve the equivalent of the total annual electrical usage of approximately 1,176,000 residential customers in that year.

The improvement in system fuel diversity from Turkey Point 6 & 7 can also be demonstrated, for illustrative purposes, by looking at the amount of natural gas or oil that would have been needed to produce this same number of approximately 17.7 million MWh in 2024 if that energy had been produced by a conventional steam generating unit with a heat rate of 10,000 BTU/kwh. In such a case, Turkey Point 6 & 7 can be thought of as saving approximately 177,000,000 mmBTU of natural gas (if all of this energy had been produced by natural gas), or approximately 27,600,000 barrels of oil (if all of this energy had been produced by oil), in 2024.

In regard to reduction of system CO_2 emissions, Turkey Point 6 & 7 are projected to result in a cumulative reduction over the expected life of the two units of approximately 265 million tons of CO_2. This will be a significant reduction in CO_2 emissions, representing approximately 629%, of the total CO_2 emissions from all FPL-owned generating units in 2012 (which was approximately 42 million tons). Stated another way, this projected cumulative CO_2 emission reduction from Turkey Point 6 & 7 is the equivalent of operating FPL's very large system of more than 24,000 MW of generation for approximately 75 months, or approximately 6.3 years, with zero CO_2 emissions.

Q. In regard to the projected fuel cost savings and emission reductions discussed above, does the fact that Turkey Point 6 & 7 will produce

electricity using no fossil fuel and with zero air emissions also represent important hedge benefits for FPL's customers?

A. Yes. Nuclear power provides an important hedge for customers against the potential for future natural gas prices to be higher than forecasted and the potential for costly environmental (especially CO_2) regulations. Because the price of nuclear fuel is unrelated to fossil fuel prices, and because it produces no SO_2, NO_x, CO_2, etc., emissions in producing electricity, it is a superb hedge against higher fossil fuel costs and environmental compliance costs.

Q. Does Turkey Point 6 & 7 provide other hedge benefits?

A. Yes. There are potential avoided cost benefits; i.e., hedge benefits, that will be provided by Turkey Point 6 & 7 (and which have already been provided by the completed EPU project) if a "nuclear neutral" Renewable Portfolio Standard (RPS) or Clean Energy Standard (CES) mandate is imposed in the future. In such a circumstance the 2,200 MW of Turkey Point's nuclear capacity will reduce the need for, and the cost of, a large amount of renewable generation that would otherwise need to be built to meet the mandate. Such cost savings would likely be significant. This mandate has the possibility to occur in the future with or without the establishment of CO_2 compliance costs.

Q. Will Turkey Point 6 & 7 also defer/avoid costs of new transmission facilities that would otherwise be needed to import power into the Southeastern Florida region?

A. Yes. The addition of 2,200 MW of capacity from Turkey Point 6 & 7 in Miami-Dade County is projected to achieve significant transmission cost

savings by avoiding the construction of transmission facilities that would otherwise need to be built to import power from outside the Southeastern Florida region (Miami-Dade and Broward Counties) into that region. These savings are currently projected to be approximately $933 million CPVRR. This savings value is accounted for in FPL's 2013 feasibility analyses of the Turkey Point 6 & 7 project.

Q. What conclusions do you draw from the results of the 2013 feasibility analyses of Turkey Point 6 & 7?

A. In regard to these economic feasibility analyses, the Turkey Point 6 & 7 project is clearly projected to be the economic choice in the majority (5 of 7) of scenarios examined. In the remaining scenarios (which are based on assumptions of either relatively low environmental compliance costs, or relatively low environmental compliance and natural gas costs, each year for the next 50 years), the projected breakeven capital costs are within the non-binding estimated capital cost range for the new nuclear units. Therefore, Turkey Point 6 & 7 is projected to be the economic choice in the majority of cases; i.e., in 5 of 7 scenarios, and will be beneficial in terms of increased fuel diversity, reduced emissions, and avoided regional transmission expenditures in all scenarios.

Thus, the results of the 2013 feasibility analyses show that Turkey Point 6 & 7 continues to be projected as a solidly cost-effective capacity and energy choice for FPL and its customers. In addition, the results of FPL's 2013

feasibility analyses show that FPL's customers are projected to significantly benefit from Turkey Point 6 & 7 in regard to system fuel savings, system fuel diversity, system CO_2 emission reductions, and avoided regional transmission expenditures once the Turkey Point 6 & 7 units go in-service. These conclusions fully support the feasibility of continuing the Turkey Point 6 & 7 project.

IV. The EPU Project

Q. What is the status of the EPU project, particularly in regard to the project's objective?

A. The EPU project is essentially complete. The objective of the EPU project, as approved in its Need Determination, was to provide approximately 400 MW of additional nuclear generation from FPL's existing nuclear units. That objective has not only been met, it is being surpassed with more than 500 MW of additional nuclear generation being delivered. Therefore, no feasibility analysis to examine "completion" of the EPU project is necessary or appropriate. However, I will briefly discuss various benefits to FPL's customers that are currently being delivered, and which will continue to be delivered for decades to come, from the recently completed EPU project.

Q. What types of benefits to FPL's customers are being delivered by the EPU project?

A. There are numerous types of benefits that the EPU project is delivering to FPL's customers. These benefits include:

1) More than 500 MW of increased nuclear capacity. (Although the exact magnitude of increased nuclear capacity delivered by the recently completed EPU project will not be known until the testing at all of the nuclear units is completed, a nominal value of 512 MW of increased capacity from the EPU project is assumed for discussion purposes in the remainder of my testimony.) This value of 512 MW is 113 MW, or approximately 28%, more incremental capacity than the 399 MW of increased capacity that was assumed in early projections for the EPU project.
2) These 512 MW are increases in firm capacity which helps meet FPL's needs for future resources, thus avoiding and/or deferring future capacity additions.
3) The 512 MW of increased capacity is baseload capacity that operates at very high (approximately 90% or higher) annual capacity factors, thus delivering very large amounts of energy each year.
4) This baseload energy is very low cost energy due to the very low fuel costs of nuclear fuel. This not only results in significantly lowering total system fuel costs for FPL's customers, it also

serves as a valuable hedge against future increases in fossil fuel costs that would increase FPL's electric rates.

5) This baseload energy is also produced with zero emissions. This not only results in significantly lowering FPL's total system emissions, it also serves as a valuable hedge against future increases in environmental compliance costs that would increase FPL's electric rates.

6) The additional energy produced from the incremental 512 MW of nuclear capacity significantly increases fuel diversity for the FPL system by increasing the use of nuclear fuel and decreasing the use of fossil fuels, particularly natural gas.

7) The portion of the increased 512 MW of additional generating capacity that is located at the Turkey Point site (i.e., from the increased capacity added at existing nuclear units Turkey Point 3 & 4) helps maintain a balance between growing electrical load in the Southeastern Florida region (Miami-Dade and Broward Counties) and generation located in that region.

8) As previously discussed in regard to the Turkey Point 6 & 7 project, the increased nuclear capacity that has been delivered by the completed EPU project also serves as a valuable hedge against higher costs for FPL's customers that would occur with a potential RPS or CES mandate.

Q. Would you please provide a current estimate of approximate annual fuel cost savings in the first full year of operation of the uprated units?

A. Yes. In the 2012 feasibility analyses for the EPU project, the projected fuel cost savings for the first full year of operation (i.e., the year 2014) was $114 million (nominal) based on a Medium Fuel Cost forecast. A current estimate of this first full year fuel cost savings can be derived by making two adjustments to the $114 million savings value: one for changes in forecasted fuel prices for the year 2014 and one for changes in incremental capacity (from 490 MW to 512 MW) delivered by the EPU project.

After making these two adjustments (reflecting lower forecasted fuel prices and greater EPU output), the updated estimate is approximately $102 million (nominal) in fuel savings for the year 2014. The end result is a slightly lower, but still significant, projected fuel savings for FPL's customers in 2014. This annual fuel savings value for 2014 is projected to increase every year thereafter as forecasted fossil fuel prices increase.

The current estimate of $102 million (nominal) in fuel savings in the year 2014 is presented in Exhibit SRS-9.

Q. Please provide current estimates for other benefits the EPU project is already providing, and will continue to provide, to FPL's customers.

A. Current estimates for some of the other benefits to FPL's customers delivered by the EPU project are also presented in Exhibit SRS-9. These current

estimates are derived by using similar adjustments for incremental capacity, etc., to the results from the 2012 feasibility analyses. The current estimates are summarized below:

- $3.4 billion (nominal) in total fuel savings over the life of the uprated nuclear units. (FPL's 2012 total fuel cost was approximately $3.3 billion. Therefore, the projected fuel savings from the EPU project over the lives of the uprated nuclear units equates to more than one full year of zero fuel costs for FPL's customers compared to FPL's 2012 total system fuel costs.);
- The increased nuclear capacity delivered by the EPU project is projected to reduce FPL's reliance on natural gas by approximately 3% in 2014;
- The amount of energy that will be produced by the incremental nuclear capacity in the first full year of operation of the uprated nuclear units (2014) is equivalent to the annual electricity usage of approximately 326,000 residential customers in 2014. This represents a projected increase in projected benefits from the EPU project compared to the 2012 feasibility analyses results due to the increase in incremental capacity from 490 MW to 512 MW; and,
- Over the lives of the uprated nuclear units, the incremental nuclear capacity is projected to save the equivalent of 42,844,000 mmBTU of natural gas or 6,687,000 barrels of oil; and to reduce more than 33

million tons of CO_2 emissions. (In regard to the projected cumulative CO_2 emission reduction value, this is the equivalent of operating FPL's very large system of more than 24,000 MW of generation for approximately 10 months with zero CO_2 emissions).

These savings values for fossil fuel and CO_2 emissions represent projected increases in projected benefits from the EPU project compared to the 2012 feasibility analyses results due to the increase in incremental capacity from 490 MW to 512 MW. In addition, these projected increased benefits regarding reductions in fossil fuel use, and in CO_2 emissions, also represent increased hedge benefits for FPL's customers against future increases in fossil fuel costs and increasing environmental compliance costs.

In summary, the current estimates of benefits from the completed EPU project presented in Exhibit SRS-9 show that the incremental nuclear capacity delivered by the EPU project is already providing, and will continue to provide for decades, significant benefits for FPL's customers which, in some cases, are even greater than the benefits projected in FPL's 2012 feasibility analyses.

Q. Does this conclude your testimony?

A. Yes.

Docket No. 130009-EI
Summary of Results from FPL's 2013
Feasibility Analyses of the
Turkey Point 6 & 7 Project
(Plus Results from Additional Analyses)
Exhibit SRS-1 , Page 1 of 1

Summary of Results from FPL's 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project
(Plus Results from Additional Analyses)

1) Number of fuel cost/environmental compliance cost scenarios in which the Turkey Point 6 & 7 project is projected to be cost-effective:	5 of 7
2) Projected Fuel Savings for FPL's Customers in First Full Year of Operation (Approx. Nominal $):*	$804 million
3) Projected Fuel Savings for FPL's Customers Over the Life of the Project (Approx. Nominal $):	$78 billion
4) Number of Years of Equivalent Zero System Fuel Cost for FPL's Customers Based on Projected Fuel Savings Over the Life of the Project Compared to FPL's 2012 Annual System Fuel Cost (Approx. Years):	24 years
5) Projected Percentage of Total FPL Energy Produced from Natural Gas and Nuclear in First Full Year of Operation of Nuclear Project (Approx. %):*	
- without Turkey Point 6 & 7	71% Gas & 21% Nuclear
- with Turkey Point 6 & 7	58% Gas & 35% Nuclear
6) Equivalent Approximate Number of Residential Customers' Annual Energy Use Supplied by Turkey Point 6 & 7 in the First Full Year of Operation*	1,176,000
7) Equivalent Annual Amount of Fossil Fuel Saved by Turkey Point 6 & 7 Beginning in the First Full Year of Operation (Approx.):*	
- Equivalent mmBTU of Natural Gas	177 million
- Equivalent Barrels of Oil	28 million
8) Projected Amount of CO_2 Emissions Reduced by Turkey Point 6 & 7 Over the Life of the Project:	265 million tons
9) Number of Months in Which FPL's Generating System Would Operate with the Equivalent of Zero CO_2 Emissions Based on Projected CO_2 Emission Reduction Compared to FPL's 2012 System CO_2 Emissions (Approx.):	75 (or 6.3 years)

* The first full year of operation for both Turkey Point 6 & 7 units is assumed to be 2024.

Docket No. 130009-EI
Comparison of Key Assumptions Utilized in the 2012 and 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project: Projected Fuel Costs (Medium Fuel Cost Forecast)
Exhibit SRS-2 , Page 1 of 1

Comparison of Key Assumptions Utilized in the 2012 and 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project: Projected Fuel Costs (Medium Fuel Cost Forecast)

(all $ values shown are in Nominal $)

	(1)	(2)	(3) = (2) - (1)
Selected Years	Forecasted Natural Gas Cost ($/mmBTU) 2012 Feasibility Analysis	Forecasted Natural Gas Cost ($/mmBTU) 2013 Feasibility Analysis	Change in 2013 Forecast
2022	$9.16	$7.66	($1.50)
2025	$11.18	$9.02	($2.16)
2030	$12.26	$10.60	($1.65)
2035	$13.40	$12.86	($0.53)
2040	$14.64	$15.54	$0.91

	(1)	(2)	(3) = (2) - (1)
Selected Years	Forecasted 1% S Oil Cost ($/mmBTU) 2012 Feasibility Analysis	Forecasted 1% S Oil Cost ($/mmBTU) 2013 Feasibility Analysis	Change in 2013 Forecast
2022	$24.49	$19.19	($5.31)
2025	$25.85	$22.08	($3.77)
2030	$26.30	$24.87	($1.44)
2035	$26.67	$27.08	$0.41
2040	$27.04	$29.39	$2.36

	(1)	(2)	(3) = (2) - (1)
Selected Years	Forecasted Nuclear Fuel Cost ($/mmBTU) 2012 Feasibility Analysis	Forecasted Nuclear Fuel Cost ($/mmBTU) 2013 Feasibility Analysis	Change in 2013 Forecast
2022	$0.87	$0.87	$0.00
2025	$1.07	$1.07	$0.00
2030	$1.08	$1.08	$0.00
2035	$1.22	$1.22	$0.00
2040	$1.39	$1.39	$0.00

Docket No. 130009-EI
Comparison of Key Assumptions Utilized in the 2012 and 2013
Feasibility Analyses of the Turkey Point 6 & 7 Project:
Projected Environmental Compliance Costs (Env II Forecast)
Exhibit SRS-3, Page 1 of 1

Comparison of Key Assumptions Utilized in the 2012 and 2013
Feasibility Analyses of the Turkey Point 6 & 7 Project:
Projected Environmental Compliance Costs: (Env II Forecast)
(all $ values shown are in Nominal $)

	(1)	(2)	(3) = (2) - (1)
Selected Years	Forecasted SO_2 Compliance Cost ($/ton) 2012 Feasibility Analysis	2013 Feasibility Analysis	Change in 2013 Forecast
2022	$67	$67	$0
2025	$72	$72	$0
2030	$82	$82	$0
2035	$93	$93	$0
2040	$105	$105	$0

	(1)	(2)	(3) = (2) - (1)
Selected Years	Forecasted NO_x Compliance Cost ($/ton) 2012 Feasibility Analysis	2013 Feasibility Analysis	Change in 2013 Forecast
2022	$605	$605	$0
2025	$652	$652	$0
2030	$737	$737	$0
2035	$834	$834	$0
2040	$944	$944	$0

	(1)	(2)	(3) = (2) - (1)
Selected Years	Forecasted CO_2 Compliance Cost ($/ton) 2012 Feasibility Analysis	2013 Feasibility Analysis	Change in 2013 Forecast
2022	$0	$0	$0
2025	$11	$11	$0
2030	$21	$21	$0
2035	$38	$38	$0
2040	$64	$64	$0

Docket No. 130009-EI
Comparison of Key Assumptions Utilized in the 2012 and 2013
Feasibility Analyses of the Turkey Point 6 & 7 Project:
Summer Peak Demand Load Forecast
Exhibit SRS-4 , Page 1 of 1

Comparison of Key Assumptions Utilized in the 2012 and 2013
Feasibility Analyses of the Turkey Point 6 & 7 Project:
Summer Peak Demand Load Forecast
(Summer MW)

	(1)	(2)	(3) = (2) - (1)	(4)	(5)
Selected Years	2012 Feasibility Analysis	2013 Feasibility Analysis	Change in 2013 Forecast	Annual Growth with 2013 Peak Demand Forecast	Cumulative Growth with 2013 Peak Demand Forecast
2013	21,931	21,790	(141)	---	---
2014	23,243	22,928	(315)	1,137	1,137
2015	23,786	23,359	(427)	431	1,569
2016	24,315	23,733	(582)	374	1,943
2017	24,529	24,122	(407)	389	2,332
2018	24,674	24,493	(181)	371	2,703
2019	25,041	24,901	(140)	408	3,111
2020	25,499	25,302	(197)	401	3,512
2021	25,960	25,560	(400)	258	3,770
2022	26,492	26,105	(387)	545	4,314
2023	27,125	26,782	(342)	678	4,992
2024	27,680	27,475	(205)	693	5,685
2025	28,268	28,154	(114)	679	6,364
2030	31,164	31,228	63	*	*
2035	34,211	33,714	(497)	*	*
2040	37,555	35,996	(1,559)	*	*

* Annual and cumulative growth values not shown due to load forecast projections in this exhibit changing from year-to-year values to 5-year intervals.

Projection of FPL's Resource Needs Through 2025
(Assuming No Turkey Point 6 & 7 and No Other Additions from 2022 - On)

	(1)	(2)	(3)	(4) = (1) + (2) - (3)	(5)	(6)	(7) = (5) - (6)	(8) = (4) - (7)	(9) = (8) / (7)	(10) = ((7)*1.20)-(4)
August of the Year	Projected FPL Unit Capability (MW)	Projected Firm Capacity Purchases (MW)	Projected Scheduled Maintenance* (MW)	Projected Total Capacity (MW)	Projected Peak Load (MW)	Projected Summer DSM Capability (MW)	Projected Firm Peak Load (MW)	Projected Summer Reserves (MW)	Projected Summer Reserve Margin w/o Additions (%)	**Projected MW Needed to Meet 20% Reserve Margin** (MW)**
2013	24,215	1,944	826	25,333	21,790	2,006	19,785	5,548	28.0%	(1,591)
2014	25,533	1,980	826	26,687	22,928	2,153	20,775	5,912	28.5%	(1,757)
2015	25,604	2,050	0	27,654	23,359	2,279	21,080	6,574	31.2%	(2,358)
2016	26,881	1,122	0	28,003	23,733	2,404	21,329	6,674	31.3%	(2,408)
2017	26,441	1,086	0	27,527	24,122	2,529	21,593	5,933	27.5%	(1,615)
2018	26,441	705	0	27,146	24,493	2,655	21,839	5,307	24.3%	(939)
2019	26,441	705	0	27,146	24,901	2,780	22,121	5,024	22.7%	(600)
2020	26,441	705	0	27,146	25,302	2,880	22,422	4,723	21.1%	(239)
2021	26,441	885	0	27,326	25,560	2,980	22,580	4,746	21.0%	(230)
2022	26,441	885	0	27,326	26,105	3,080	23,025	4,301	18.7%	304
2023	26,441	885	0	27,326	26,782	3,180	23,602	3,724	15.8%	997
2024	26,441	885	0	27,326	27,475	3,281	24,194	3,131	12.9%	1,708
2025	26,441	635	0	27,076	28,154	3,381	24,773	2,302	9.3%	2,652

* MW values shown in Column (3) represent 826 MW out-of-service during the Summer of 2013 and 2014 due to the installation of electrostatic precipitators at FPL's 800 MW generating units.

** MW values shown in Column (10) represent new generating capacity needed to meet the 20% reserve margin criterion.

**Docket No. 130009-EI
Projection of FPL's Resource Needs Through 2025
Exhibit SRS-5, Page 1 of 1**

Comparison of Key Assumptions Utilized in the 2012 and 2013 Feasibility Analyses of the Turkey Point 6 & 7 Project: Other Assumptions

Assumption	(1) Value for 2012 Feasibility Analysis	(2) Value for 2013 Feasibility Analysis	(3) = (2) - (1) Change in 2013 Forecast
1) Number of Environmental Compliance Cost Scenarios	3	3	----
2) Financial/Economic Assumptions (Base Case):			
- Capital Structure (debt/equity)	40.88%/59.12%	40.38%/59.62%	----
- Cost of Debt	5.50%	4.79%	----
- Return on Equity	10.00%	10.50%	----
- Discount Rate (after tax)	7.29%	7.45%	----
3) CC Generator Capital ($/kw in 2018, w/o AFUDC)	$913	$798	($115)
4) CC Heat Rate (Base 100%, BTU/kwh)	6,369	6,334	(35)
5) Firm Gas Transportation Cost ($/mmBTU in 2018)	$1.98	$1.98	----
6) Assumed In-Service Dates for Turkey Point Units 6 & 7	2022 & 2023	2022 & 2023	----
7) Assumed Operating Lives of Turkey Point Units 6 & 7	40 years	40 years	----
8) Non-Binding Overnight Cost Estimate for New Nuclear Units ($/kw)	$3,570 to $5,190 in 2012$	$3,659 to $5,320 in 2013$	----
9) Previously Spent Capital Costs Now Excluded ($ millions, approx.)	$157	$192	$35
10) Cumulative Annual Capital Expenditure Percentage for TP 6 & 7:			
2013	1.5%	1.5%	(0.0) %
2014	3.3%	1.7%	(1.6) %
2015	11.4%	7.9%	(3.6) %
2016	20.0%	17.2%	(2.7) %
2017	30.4%	27.4%	(3.0) %
2018	44.9%	41.7%	(3.2) %
2019	59.6%	57.5%	(2.1) %
2020	73.6%	72.1%	(1.5) %
2021	86.2%	85.4%	(0.8) %
2022	96.9%	97.2%	0.3 %
2023	100.0%	100.0%	0.0 %

The Two Resource Plans Utilized in FPL's 2013 Feasibility Analyses of Turkey Point 6 & 7

Resource Plan with TP 6&7	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 - on
- unit(s)/capacity added	Cape Canaveral Modernization; EPU Completion	Riviera Modernization	---	Port Everglades Modernization	---	---	---	---	180 MW PPA	Turkey Point 6	Turkey Point 7	---	Greenfield 3x1 CC	*
- Projected Summer Full Reserve Margin	28.0%	28.5%	31.2%	31.3%	27.5%	24.3%	22.7%	21.1%	21.0%	23.5%	25.1%	22.0%	23.3%	(meets criterion in all yrs)
- Projected Summer Generation Only Reserve Margin	16.3%	16.4%	18.4%	18.0%	14.1%	10.8%	9.0%	7.3%	6.9%	8.9%	10.2%	7.5%	8.5%	

Resource Plan without TP 6&7	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 - on
- unit(s)/capacity added	Cape Canaveral Modernization; EPU Completion	Riviera Modernization	---	Port Everglades Modernization	---	---	---	---	180 MW PPA	Greenfield 3x1 CC	---	Greenfield 3x1 CC	Greenfield 3x1 CC	*
- Projected Summer Full Reserve Margin	28.0%	28.5%	31.2%	31.3%	27.5%	24.3%	22.7%	21.1%	21.0%	24.2%	21.2%	23.4%	24.7%	(meets criterion in all yrs)
- Projected Summer Generation Only Reserve Margin	16.3%	16.4%	18.4%	18.0%	14.1%	10.8%	9.0%	7.3%	6.9%	9.5%	11.5%	8.7%	9.7%	

Notes: - Assumes DSM implementation to match FPSC's DSM Plan order through 2019, then 100 MW/Year of additional DSM through 2025.
- FPL's reserve margin criterion is 20.0%.
- The generation only reserve margin examines FPL's projected reserves based on generation resources only and is a measure of FPL's dependence upon DSM resources to maintain system reliability.

* The filler capacity MW totals for the two resource plans are both 26,670 MW.

Docket No. 130009-EI
The Two Resource Plans Utilized in FPL's 2013 Feasibility Analyses of Turkey Point 6 & 7
Exhibit SRS-7, Page 1 of 1

2013 Feasibility Analyses Results for the Turkey Point 6 & 7 Project: Total Costs, Total Cost Differentials, and Breakeven Costs for All Fuel and Environmental Compliance Cost Scenarios in 2013$

(millions, CPVRR, 2013 - 2063)

(1)	(2)	(3)	(4)	(5) = (3) - (4)	(6)
Fuel Cost Forecast	Environmental Compliance Cost Forecast	Total Costs for Plans: Plan with TP 6 & 7	Total Costs for Plans: Plan without TP 6 & 7	Total Cost Difference Plan with TP 6 & 7 minus Plan without TP 6 & 7 *	Breakeven Nuclear Capital Costs ($/kw in 2013$)
High Fuel Cost	Env I	166,689	181,279	(14,590)	5,948
High Fuel Cost	Env II	173,386	188,772	(15,387)	6,273
High Fuel Cost	Env III	182,185	198,472	(16,287)	6,640
Medium Fuel Cost	Env I	146,191	158,661	(12,470)	5,084
Medium Fuel Cost	Env II	152,803	166,068	(13,265)	5,408
Medium Fuel Cost	Env III	161,499	175,667	(14,168)	5,776
Low Fuel Cost	Env I	125,585	135,927	(10,342)	4,217

*The TP 6 & 7 savings values in Column (5) also represent CPVRR breakeven capital costs for each scenario.

Note: A negative value in Column (5) indicates that the Plan with TP 6 & 7 is less expensive than the Plan without TP 6 & 7. Conversely, a positive value in Column (5) indicates that the Plan with TP 6 & 7 is more expensive that the Plan without TP 6 & 7.

Docket No. 130009-EI
EPU Project Benefits
to FPL's Customers
Exhibit SRS-9 , Page 1 of 1

EPU Project Benefits to FPL's Customers*

1) Projected Fuel Savings for FPL's Customers in First Full Year of Operation (Approx. Nominal $):**	$102 million
2) Projected Fuel Savings for FPL's Customers Over the Life of the Uprated Nuclear Units (Approx. Nominal $):	$3.4 billion
3) Number of Years of Equivalent Zero System Fuel Cost for FPL's Customers Based on Projected Fuel Savings Over the Life of the Uprated Nuclear Units Compared to FPL's 2012 Annual System Fuel Cost (Approx. Years):	1 year
4) Projected Percentage of Total FPL Energy Produced from Natural Gas and Nuclear in First Full Year of Operation of Nuclear Project (Approx. %):**	
- without the EPU project	68% Gas & 21% Nuclear
- with the EPU project	65% Gas & 25% Nuclear
5) Equivalent Approximate Number of Residential Customers' Annual Energy Use Supplied by the EPU Project in the First Full Year of Operation of the Uprated Nuclear Units**	326,000
6) Equivalent Annual Amount of Fossil Fuel Saved by the EPU Project Beginning in the First Full Year of Operation of the Uprated Nuclear Units (Approx.):**	
- Equivalent mmBTU of Natural Gas	43 million
- Equivalent Barrels of Oil	6.7 million
7) Projected Amount of CO_2 Emissions Reduced by the EPU Project Over the Life of the Uprated Units (tons):	33 million
8) Number of Months in Which FPL's Generating System Would Operate with the Equivalent of Zero CO_2 Emissions Based on Projected CO_2 Emission Reduction Compared to FPL's 2012 System CO_2 Emissions (Approx.):	9.8

* The projected benefits are based on adjustments made to FPL's last (2012) feasibility analyses conducted for the EPU project.

** The first full year of operation for all four uprated nuclear units is 2014.