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Subject: Electronic Filing for Docket No. 070650-EI / FPL's Post Hearing Brief
Attachments: FPL's Post-hearing Brief 2008 02-15.doc

Electronic Filing

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b. Docket No. 070650-EI

In re: Florida Power & Light Company's Petition to Determine Need for Turkey Point Nuclear Units 6 and 7 Electrical Power Plant

c. The document is being filed on behalf of Florida Power & Light Company.

d. There are a total of 36 pages, including an attached certificate of service.

e. The document attached for electronic filing is Florida Power & Light Company's Post Hearing Brief

(See attached file: FPL's Post-hearing Brief 2008 02-15.doc)

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2/15/2008

DOCUMENT NUMBER-DATE
01225 FEB 15 08
FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Florida Power & Light Company's)
Petition to Determine Need for)
Turkey Point Nuclear Units 6 & 7)
Electrical Power Plant)

Docket No. 070650-EI

Filed: February 15, 2008

FLORIDA POWER & LIGHT COMPANY'S POST-HEARING BRIEF

Florida Power & Light Company ("FPL" or the "Company") hereby files with the Florida Public Service Commission (the "PSC" or the "Commission") its Post-Hearing Brief in the above-referenced docket, and states:

Introduction and Overview

In this proceeding, FPL seeks an affirmative need determination by the Commission pursuant to Section 403.519(4), Fla. Admin. Code, subject to the annual review process established by Rule 25-6.0423, Fla. Admin. Code, with respect to the Company's proposal to construct 2,200 to 3,040 megawatts ("MW") of new nuclear generating capacity, to be located on the same existing company-owned property southwest of Miami where FPL's existing Turkey Point nuclear and fossil units are located.

FPL's proposed Turkey Point 6 & 7 project (sometimes hereinafter the "Project") is unlike any other power generation project that FPL has brought before the Commission. As envisioned by the Florida Legislature and facilitated by the relevant legislation, the Project has been presented for a determination of need early in the development process, before designs are complete and before commercial terms have been negotiated. While this process leaves some questions unanswered, more than enough is known to warrant the Commission granting a determination of need in order to preserve this unique and important generating resource option for the benefit of FPL's customers.

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FPSC-COMMISSION CLERK

The evidence in this proceeding presented by FPL consists of the uncontradicted testimony submitted by its president, Armando Olivera, as well as by thirteen additional highly qualified technical and policy witnesses. Significantly, no opposing testimony was submitted by any party, and thus, the evidentiary record in support of granting a need determination is both overwhelming and virtually uncontested.

The record clearly shows that the Project would provide 2,200 or more megawatts of needed, reliable baseload electric generating capacity and reduce FPL's carbon dioxide ("CO₂") emissions by hundreds of millions of tons over the Project's life while, in nearly every analyzed scenario, producing fuel savings for customers that start in 2021 at about \$1 billion per year and increase over the Project's life. These reasons alone provide compelling support for an affirmative need determination for the Project and continued development of the Project subject to the annual review process established by the Commission's Rule 25-6.0423, Florida Administrative Code. But this project will provide many additional, important benefits. As discussed in detail in this brief, the record shows that constructing and operating the Project will provide:

- At least 2,200 MW of the more than 6,000 MW of baseload electric generating capacity needed to serve FPL's customers by 2020, which 6,000 MW takes into account the extraordinary efforts in the areas of conservation, efficiency and renewable energy being undertaken by FPL (Tr. 885-90 (Sim));
- Baseload generation available to serve customers around the clock (Tr. 332 (Scroggs));
- Significantly improved FPL system fuel diversity that will reduce FPL's reliance on natural gas in 2021 by more than 10% as compared to natural gas-fired generation (Tr. 934 (Sim));
- Lower and more stable fuel costs, expected to provide customers with tens of billions of dollars in fuel cost savings over the life of the plant – all of which would be directly flowed through to customers (Tr. 953 (Sim));

- Improved electric system reliability and integrity, by reason of the location of the proposed new generation near FPL's load center and the fact that the Project's reactors will contain a large ready supply of nuclear fuel that will help mitigate system fuel delivery interruption risks such as those that can occur with natural gas pipelines during major storm events (Tr. 927-28 (Sim); Tr. 733 (Villard)); and
- Greatly reduced system CO₂ emissions (due to zero Project emissions during plant operations) and expected reductions in environmental compliance costs totaling many billions of dollars (Tr. 774, 776 (Kosky)).

In contrast, failing to grant a need determination would deprive FPL, its customers and the state of Florida of any meaningful chance at securing the billions of dollars in fuel cost savings, major improvement to fuel diversity, and hundreds of millions of tons in CO₂ emission reductions that the operation of Turkey Point 6 & 7 could deliver.

While encouraged by the potential benefits of the Project for customers, FPL is cognizant of the large size and great complexity of this Project. Depending on the design that is ultimately selected, the cost of the Project is expected to range from approximately \$12 billion to \$24 billion. Tr. 415 (Scroggs). This is greater than the total value of FPL's current rate base, and could even exceed the current market capitalization of FPL's parent company. Consequently, the Project will present substantial challenges for FPL as it moves forward, and will need the Commission's active and ongoing attention and support for FPL to complete the Project.

Simply put, the Project will require much more active participation, support and risk mitigation by the Commission, the Office of Public Counsel, and other key constituents, than has been necessary for prior projects approved under the Florida Power Plant Siting Act. These considerations are of paramount importance, and they support an affirmative determination of need by the Commission that acknowledges the inherent uncertainties that will characterize this Project throughout its development and construction, and that expresses the Commission's strong support as a matter of public and regulatory policy for FPL to move forward with the

development of Turkey Point 6 & 7. Further, FPL asks that the Commission, in its order in this proceeding, indicate its clear intention to be fully engaged as a key participant in this process, to promote and encourage the development of new nuclear generation in the interest of FPL's customers and other residents of Florida, and to minimize regulatory risk for the Project in an effort to keep costs low and ensure delivery of the Project benefits on the earliest practical deployment schedule.

The need for additional baseload capacity on FPL's system is undeniable. As FPL's load grows, so too does the need for additional baseload generating resources – units that can run cost effectively around the clock. Nuclear power has been that backbone for FPL's system, providing safe and continuous low cost energy 24 hours a day, seven days a week. *See* Tr. 232-33 (Stall). If FPL does not initiate steps today to preserve new nuclear as an option, the relative contribution of nuclear will drop from 21% to 16% by 2021, and the contribution of gas could increase to as much as 75%. Tr. 933 (Sim); Ex. 85. FPL determined in its 2006/2007 Integrated Resource Plan that it will need significant additional resources starting in 2012 to meet its reserve margin criterion. In fact, FPL will need a minimum of either 6,156 MW of new supply or approximately 5,130 MW of new demand side management (“DSM”) to meet its reserve margin requirements by 2020. Tr. 890-91 (Sim). This anticipated need already accounts for a significant amount – approximately 1,900 MW – of additional DSM, all currently committed supply projects, approximately 400 MW of capacity from the recently approved uprates at FPL's four existing nuclear units, and approximately 300 MW of renewable generation. Tr. 886-90 (Sim). Due to this large capacity need, additional capacity will have to be added to FPL's system in order to maintain system reliability and integrity. Tr. 156 (Silva).

Even with Turkey Point 6 & 7, FPL will still have a need for thousands of additional megawatts of resources. Tr. 156-57, 197-98 (Silva); Ex. 19; Ex. 78. It is possible that a portion of this need will be satisfied with renewable resources and additional DSM, but it is implausible that those resources could meet such a high percentage of the need that the output of Turkey Point 6 & 7 would not also be required.

FPL is currently considering two technology designs for Turkey Point 6 & 7: the General Electric Economic Simplified Boiling Water Reactor (“GE ESBWR”) and the Westinghouse AP1000 pressurized water reactor. The GE ESBWR is designed to have a nominal output of approximately 1,520 MW per unit, while the Westinghouse AP1000 is designed to have a nominal output of approximately 1,100 MW per unit. Tr. 277 (Scroggs). The two units comprising Turkey Point 6 & 7 therefore will contribute between 2,200 MW and 3,040 MW of fuel diverse, emission-free baseload capacity to FPL’s system. FPL has taken additional steps toward pursuing the Westinghouse design, but has not yet made a final technology selection. Each design is capable of providing a significant amount of baseload capacity, enhancing fuel diversity, and reducing CO₂ emissions. Tr. 413 (Scroggs). Either design also will be able to make use of the existing Turkey Point site and existing infrastructure that has successfully provided nuclear generation to FPL’s customers for over 30 years. Tr. 331 (Scroggs). Finally, the costs associated with either technology fall within a range that shows Turkey Point 6 & 7 to be the most cost-effective option compared to other alternatives.

FPL requests that the Commission’s order expressly acknowledge the very lengthy and dynamic nature of the development process of the Project, and indicate that decisions as to the overall elements of design, including technology selection, will properly and necessarily be made in the subsequent course of the Project’s development. The Commission will have an

opportunity to review technology selection and other design elements, as well as other information that becomes available or develops over time, in connection with its review of the continued feasibility of the Project as part of the annual review proceedings under the Commission's Nuclear Power Plant Cost Recovery ("NPPCR") Rule.

For the reasons discussed more fully below under each of the issues identified for Commission disposition in this matter, the Commission should grant FPL's petition for a determination of need for Turkey Point 6 & 7. Moreover, given the likely challenges that will be faced during the licensing and development process, considering the regulatory risk associated with the last generation of nuclear construction, and to help overcome past perceptions that the risks associated with nuclear investment are too great to warrant moving forward, FPL urges that the Commission indicate in its order strong support for this Project and the manner in which it is being pursued. Consistent governmental and regulatory support will be essential to the successful deployment of new nuclear generation and to help bridge challenges that undoubtedly will arise.

Issues and Positions

ISSUE 1: Is there a need for the proposed generating units, taking into account the need for electric system reliability and integrity, as this criterion is used in Section 403.519(4), Florida Statutes?

FPL: *Yes. Based upon a reasonable, long-term load growth forecast, FPL will need a minimum of 6,156 MW of new supply or approximately 5,130 MW of new DSM by 2020 to meet its reserve margin requirements. This need already assumes a significant amount of additional DSM, all currently committed supply projects, additional capacity from the nuclear uprates, and approximately 300 MW of anticipated renewable generation. With the Project, FPL will still need thousands of additional megawatts of generation or additional DSM to maintain a 20% reserve margin, providing the opportunity to take advantage of future developments in renewable resources and DSM.*

By the year 2020, overall system demand for electricity is expected to grow by about 40%, which equates to over 8,000 MW of additional demand. Tr. 110 (Olivera); Tr. 875 (Sim). In order to maintain system reliability and integrity that demand will need to be met utilizing a combination of new baseload capacity, renewable energy, and DSM. *Id.*; Tr. 156 (Silva). Turkey Point 6 & 7 will help satisfy the demand for new baseload capacity and enhance system reliability and integrity by contributing 2,200 to 3,040 MW of emission-free generation that will also greatly enhance fuel diversity on FPL's system, reduce reliance on natural gas within the state, help Florida meet its goals of reduced carbon dioxide ("CO₂") emissions, and provide electricity at a reasonable cost.

Customer and Load Growth Forecast

It is undisputed that Florida's population and economy are expanding at levels well above the national average. Tr. 564 (Green). In terms of customer growth in absolute numbers, Florida is the fourth fastest growing state. Tr. 583 (Green). The evidence presented in this proceeding demonstrates that FPL will continue to experience steady, long-term customer growth, notwithstanding the typical peaks and valleys of the economic cycle. Tr. 581 (Green).

FPL is projecting an annual average increase of approximately 85,000 new customers during the next 14 years. Tr. 564 (Green); Ex. 40. As a result, FPL's peak demand is also projected to increase. FPL's summer peak demand is projected to grow to 28,737 MW by the year 2018, a growth of 6,918 MW relative to 2006. By 2021, the summer peak is expected to increase an additional 2,043 MW over the 2018 level. Tr. 567-68 (Green); Ex. 96 App. D. This anticipated growth in peak demand already takes into account the industry-leading DSM that FPL has implemented and is projecting to implement during this time period. FPL's peak demand forecast is based on reasonable assumptions, is consistent with historical experience, and

is consistent with methodologies previously approved by the Commission. Tr. 569 (Green). FPL's long-term forecast was undisputed by OPC and unquestioned by Staff at the hearing. See Tr. 580-587.

Future Resource Needs

FPL uses two approaches in its reliability assessment to determine the timing and magnitude of its future resource needs: projected summer peak demand with a 20% reserve margin criterion, and a Loss-of-Load Probability evaluation. FPL's projected need for additional resources is currently driven by the summer reserve margin criterion, and has been for a number of years. Tr. 884 (Sim). Significant additional resources are needed for each year beginning in 2013 to meet the summer reserve margin criterion of 20%. Tr. 885 (Sim). Assuming sufficient other resources are added to meet the 20% reserve margin reliability criterion through 2017, without the addition of Turkey Point 6 & 7, FPL's reserve margin would fall to 17.5% in 2018, 15.1% in 2019, and 12.6% in 2020, far below the reserve margin requirement that FPL and the Commission have agreed is necessary to ensure system reliability. Tr. 160-61 (Silva). Furthermore, without Turkey Point 6 & 7, a significant portion of the reserve margin in those years would be provided by DSM rather than generation, rendering FPL's system less reliable. *Id.* No party questioned FPL's methodology or its determination that a significant amount of additional resources are needed for system reliability.

The cumulative need for the years 2012-2020 is approximately 6,156 MW if that need is to be met with supply options, or approximately 5,130 MW if it is to be met by additional DSM. Tr. 885-86 (Sim); Ex. 76. This massive need already accounts for 1,899 MW of additional DSM, all currently committed supply projects, 414 MW of capacity from the recently approved nuclear uprates, and 287 MW of renewable generation. Tr. 886-90 (Sim). As discussed further

below, FPL cannot expect to satisfy all of this need with additional renewable generation or DSM. Tr. 891 (Sim); 108-19 (Reed). FPL will need almost 4,000 MW above and beyond what Turkey Point 6 & 7 will provide. Tr. 156-57, 197-98 (Silva); Ex. 19; Ex. 78. This sizable need will more than accommodate any additional, cost-effective DSM and renewable energy that becomes available in the future. Tr. 160 (Silva); Tr. 875-76 (Sim).

Even if FPL's forecasted customer growth was lower than anticipated, that would only slightly reduce the amount of generation that will be needed *in addition* to Turkey Point 6 & 7. Staff performed an analysis of the effect of slowing customer growth on FPL's energy and demand forecasts. Under several scenarios hypothesizing no-growth and slow-growth over the next five years, FPL will still need additional generation as early as 2014 and in any event, by 2016, in order to meet its 20% reserve margin criterion. Ex. 15, Tab 10, Bates p. 000395-000400. If FPL experienced no growth for five years and slow growth thereafter – a highly unlikely scenario – FPL would still need approximately 1,395 MW in 2018 and a cumulative 2,669 MW by 2020 in order to achieve a 20% reserve margin. *Id.* at 000382-000384. Accordingly, there is no realistic scenario in which Turkey Point 6 & 7 will not be needed for system reliability and integrity. Furthermore, no adjustment to the growth and peak demand forecast could eliminate the need for the fuel diversity and CO₂ reduction benefits that Turkey Point 6 & 7 will provide.

Additional System Reliability Benefits

In addition to providing the capacity needed to meet demand, the reliability of the system will be enhanced due to the fuel diversity benefits that will be realized by adding nuclear generation to the system. The benefits of fuel diversity are discussed below in Issue 2. Another reliability benefit of Turkey Point 6 & 7 will be its location. The proposed location of new

generating capacity at the Turkey Point site will provide overall system benefits by placing the new generation in close proximity to an area of concentrated load in Southeastern Florida. Tr. 927-28 (Sim).

ISSUE 2: Is there a need for the proposed generating units, taking into account the need for fuel diversity, as this criterion is used in Section 403.519(4), Florida Statutes?

FPL: *Yes. The addition of Turkey Point 6 & 7 will significantly enhance fuel diversity and reduce reliance on natural gas in the state of Florida. With Turkey Point 6 & 7, it is projected that FPL's system will supply approximately 27% of its energy with nuclear, 65% with natural gas, and 7% with coal/petroleum coke. The addition of natural gas-fired combined cycle units would result in a supply of energy of only approximately 16% from nuclear, 75% with natural gas, and 7% with coal/petroleum coke. The addition of baseload generation not fueled by natural gas is needed on FPL's system.*

FPL's fuel mix consisted of 50% natural gas in 2006, and that percentage is growing. Tr. 110 (Olivera); Tr. 155 (Silva); Ex.17. Enhanced fuel diversity is needed for a variety of reasons. The Project will contribute to the reliability of electric service, will reduce fuel price volatility experienced by customers, and will reduce or defer the need to make significant investments in the natural gas delivery infrastructure. The addition of Turkey Point 6 & 7 will significantly enhance fuel diversity within FPL's system, and will reduce reliance on natural gas in the state of Florida – two express objectives of the Legislature as codified in section 403.519(4), Florida Statutes.

Fuel Diversity Analysis

FPL's fuel diversity analysis covers the years 2018-2021, to address the year when the first new nuclear unit is projected to go in service (2018) through the first year in which both new nuclear units are in service for a full year (2021). Tr. 932 (Sim). Three resource plans were analyzed: the Plan with Nuclear, the Plan without Nuclear – CC, and the Plan without Nuclear – IGCC. Tr. 876 (Sim). The Plan with Nuclear, representing the addition of Turkey Point 6 & 7,

has similar fuel diversity impacts as the Plan without Nuclear – IGCC, in terms of reducing reliance on natural gas. Tr. 878, 934 (Sim). As discussed below, however, the Plan without Nuclear – IGCC is very costly and does not represent an economically competitive alternative.

The Plan with Nuclear holds a significant fuel diversity advantage as compared to the Plan without Nuclear – CC. Tr. 933 (Sim). In 2021, it is projected that the Plan with Nuclear will result in FPL’s system supplying approximately, 27% of its energy with nuclear, 65% with natural gas, and 7% with coal/petroleum coke. By comparison, the Plan without Nuclear – CC is projected to result in FPL’s system supplying only 16% of its energy with nuclear, 75% with natural gas, and 7% with coal/petroleum coke. Tr. 933 (Sim); Ex.18; Ex. 85.

A 10% reduction in the reliance on natural gas and increase in the contribution of nuclear is significant, particularly for a utility system the size of FPL’s. The Plan with Nuclear will provide an increase of approximately 17.64 million megawatt hours (“MWh”) from nuclear, or enough energy to serve the needs of over one million customers. In terms of other fuel sources, this equates to approximately 27.6 million barrels of oil, 7.1 million tons of coal, or 123.5 billion cubic feet (“BCF”) of natural gas, that would need to be consumed annually to produce an equivalent amount of energy. Over the 40-year life of the units, the cumulative amount of fossil fuel displaced would equate to 1.1 billion barrels of oil, 284 million tons of coal, or 4,900 BCF of natural gas. Tr. 934-35 (Sim). No other party challenged the fuel diversity benefits of Turkey Point 6 & 7 or indicated that a different resource option could contribute to fuel diversity and reduce reliance on natural gas to a similar extent.

Benefits of Fuel Diversity

The primary benefits of the more balanced fuel mix that will be provided by the addition of Turkey Point 6 & 7 are better system reliability and reduced price volatility. Tr. 163 (Silva).

An electric system that maintains a balanced, fuel-diverse generation portfolio is more reliable because it is less susceptible to fuel supply disruptions. A fuel-diverse system will also help reduce fuel price volatility because the impact of sudden swings in the price of one fuel, such as natural gas, on total system fuel costs is mitigated. Tr. 163 (Silva); Tr. 700 (Yupp). Turkey Point 6 & 7 will help reduce FPL's reliance on natural gas and its exposure to fuel price volatility, in addition to providing customers with the significant fuel cost savings discussed below in Issue 4.

With the addition of Turkey Point 6 & 7, FPL will be able to avoid continued and increased reliance on the natural gas infrastructure within the state. Tr. 164-66 (Silva). Although that infrastructure has been reliable in the past, the demands on the two major pipelines transporting natural gas into the state have continued to grow. Florida currently is served by three pipelines – the Florida Gas Transmission (“FGT”) pipeline, the Gulfstream Natural Gas System (“Gulfstream”), and the Cypress pipeline, which transports regasified, liquefied natural gas. FGT is currently fully subscribed and by mid-2009 Gulfstream will be fully subscribed. Phase One of the Cypress pipeline also operates at or near capacity today. Despite the planned expansion of the Cypress pipeline, continued reliance on natural gas into the future will require additional investment to expand the natural gas transportation infrastructure. Tr. 703, 714-15, 718 (Yupp).

Even assuming the concerns associated with the infrastructure are addressed, the vulnerability of natural gas supply disruptions, such as from hurricanes, will persist. Fuel diversity in general can help mitigate this risk, but nuclear generation in particular offers a significant advantage in this regard. A nuclear unit has the ability to produce power for up to 18 months without the need for additional fuel supply and therefore is not exposed to any risk of

fuel supply interruptions during that period. Tr. 163 (Silva); Tr. 733 (Villard). Furthermore, nuclear units have the capability to continue to produce power beyond the scheduled refueling outage by slightly reducing output in the event of some disruption during the fabrication process. Tr. 733-34 (Villard). A reduction in core temperature to continue power production would only reduce the average daily output by .3% to 1.2%. *Id.* This on-site fuel supply advantage cannot be matched by other generation alternatives absent significant investment in on-site fuel storage, a cost that is not quantified or reflected in FPL's economic analysis. Tr. 926-27 (Sim).

Another fuel diversity benefit that Turkey Point 6 & 7 will provide is a reduction in the fuel price volatility experienced by FPL's customers. Nuclear fuel costs historically have been low and stable compared to fossil fuel costs, and this stability is expected to continue in the future. Tr. 702 (Yupp); 731 (Villard); Ex. 58. Even if nuclear fuel costs were to suddenly increase for some reason, the fact that only one third of the fuel is loaded into the reactor at a time greatly mitigates against the impact of any price fluctuations. Tr. 732, 738 (Villard). Additionally, the cost per MWh for nuclear fuel is much lower than for fossil fuels, and as a result, the impact on customers' bills if nuclear fuel prices change by a certain percentage is much smaller than if fossil fuel prices were to change by that same percentage. Tr. 731 (Villard). Increasing the nuclear component of FPL's generation mix will help to reduce the exposure of FPL and its customers to cost impacts from fluctuations in the fuel markets. Tr. 167 (Silva); Tr. 731 (Villard); *see also* Tr. 530 (Diaz). The results of FPL's fuel diversity analysis and the fuel diversity benefits associated with Turkey Point 6 & 7 were not challenged in this proceeding.

ISSUE 3: Is there a need for the proposed generating units, taking into account the need for base-load generating capacity, as this criterion is used in Section 403.519(4), Florida Statutes?

FPL: *Yes. The proposed Project is intended to help meet FPL's growing need for additional baseload capacity, which is the essential foundation of any utility's supply portfolio. Most renewable generation resources cannot provide baseload capacity or be depended upon to be available at the time of system peak. Nuclear generation such as Turkey Point 6 & 7 is a baseload capacity option, available at all hours, which is needed to keep pace with the increasing demand for reliable power and the steady growth that the state of Florida continues to experience.*

FPL's projected system resource needs have not been called into question in this proceeding. As peak demand grows, so does the need for baseload capacity units that can run cost-effectively around the clock. Nuclear power has been that backbone for FPL's system, providing safe and continuous low cost energy 24 hours a day, seven days a week. *See* Tr. 232-33 (Stall). If FPL does not initiate steps today to preserve new nuclear as an option, the relative contribution of nuclear will drop from 21% to 16% by 2021. Tr. 933 (Sim); Ex. 85.

Pursuant to section 403.519(4), the need for baseload capacity must specifically be considered when reaching a determination of need. Turkey Point 6 & 7 will provide 2,200 to 3,040 MW of needed baseload capacity to FPL's system in a safe and reliable manner. *See* Tr. 277 (Scroggs); 502, 530 (Diaz). In contrast to nuclear generation, most renewable energy sources and DSM do not provide baseload capacity but new nuclear generation will. For this reason, they should not be viewed as competing alternatives. Renewable energy and DSM are valuable components to FPL's system, and FPL will continue to pursue the addition of renewable energy resources and cost-effective DSM. Tr. 111 (Olivera); Tr. 656-58 (McBee). But baseload capacity also is needed because it can be counted on all hours of the day, and all days of the week. Turkey Point 6 & 7 will provide baseload capacity at very high capacity factor levels. This type of resource is needed not only for system reliability and integrity, but also to

enable FPL to take advantage of more renewable energy sources that are not always available. Tr. 332 (Scroggs).

Unlike FPL's other baseload options – CC and IGCC – nuclear generation does not produce any CO₂ emissions. Tr. 184 (Silva); Tr. 767 (Kosky). Because the units will operate as baseload units at very high capacity factors, and FPL's least efficient generating units that emit CO₂ will be able to operate less, Turkey Point 6 & 7 will significantly *reduce* the CO₂ emissions on FPL's system. Tr. 162, 197 (Silva); Ex. 74. By 2021, the addition of nuclear generation to FPL's portfolio could reduce FPL's CO₂ emissions 76% of the way toward the year-2000 level, one of the target levels cited in various CO₂ reduction proposals. Tr. 774 (Kosky); Ex. 74. It is evident that baseload nuclear generation is necessary to achieve such environmental goals. Tr. 530 (Diaz). Even if one were to add the same amount of intermittent megawatts from other non-emitting resources such as solar or wind, nuclear units would be far more effective in reducing CO₂ emissions because of their very high baseload capacity factors. Tr. 186-87 (Silva); Tr. 773 (Kosky); Ex. 73. And, as discussed below, the lack of emissions and avoided emission compliance costs is one factor that enables Turkey Point 6 & 7 to provide electricity at a reasonable cost and contributes to Turkey Point 6 & 7 being the most cost-effective alternative.

The Krasowskis asked FPL's witnesses whether a small level of emissions would result from the total life cycle of nuclear fuel. Concerning this point, FPL presented testimony explaining that there are CO₂ emissions associated with the resource development, handling and processing, facility construction, transportation, maintenance and decommissioning of all electric generation technologies. These are referred to as "life-cycle emissions." Tr. 767 (Kosky). Nuclear generation and wind have the lowest life-cycle emissions of the generation options available in Florida, at about 30 pounds of CO₂ (equivalent) for each MWh generated. The life-

cycle emissions for photovoltaic solar generation are higher, at about 100 pounds of CO₂ (equivalent) per MWh. A natural gas CC unit has direct operational CO₂ emissions of about 750 pounds per MWh with additional indirect emissions of approximately 110 pounds per MWh. Tr. 767-68 (Kosky). Therefore, when considering life-cycle emissions from an environmental compliance cost perspective, nuclear generation remains a preferred alternative, and will result in enormous emission-reduction benefits and much lower environmental compliance costs.¹ Ex. 74.

ISSUE 4: Is there a need for the proposed generating units, taking into account the need for adequate electricity at a reasonable cost, as this criterion is used in Section 403.519(4), Florida Statutes?

FPL: *Yes. Based upon extensive quantitative and qualitative evaluations of alternative technologies, given current information, Turkey Point 6 & 7 is the best choice to provide reliable power at a reasonable cost and meet a growing demand for electricity. Customers can expect to realize significant fuel cost savings and environmental compliance cost savings beginning as soon as the units enter service and increasing during the units' operating lives.*

Turkey Point 6 & 7 will provide adequate electricity at a reasonable cost due to the significant fuel savings and environmental compliance cost savings that will be realized by customers. These savings will begin as soon as the first unit enters commercial operation and will increase over the 40 years that Turkey Point 6 & 7 is expected to operate.

Fuel Cost Savings

Nuclear fuel costs have historically been, and are projected to be, significantly lower than fossil fuel costs. Tr. 726 (Villard); Ex. 58. Starting in 2021 when both nuclear units are projected to come online, the annual fuel savings in nominal dollars will be over a billion dollars,

¹ Additionally, the construction of any generating unit – even renewable generation – will cause a small amount of CO₂ emissions by virtue of requiring some level of human activity. Breathing, for example, releases CO₂. Tr. 1059 (Reed). But this should not obscure the very real and very large difference in the emission profile between nuclear and other viable baseload alternatives, as discussed below in Issue 3. See, Tr. 768-71 (Kosky); Ex. 71.

and that number will grow over time. FPL projects \$94 billion in fuel savings, in nominal dollars, over the life of the Project. Tr. 953, 956 (Sim). The use of nuclear fuel will also mitigate against system fuel price volatility, as described above in Issue 2.

The fabrication process for nuclear fuel is a four step process, requiring the mining of uranium, chemical conversion, enrichment, and fuel fabrication. Tr. 727-28 (Villard). As demand increases, there is expected to be a sufficient supply of uranium and each of these services, particularly considering the market's ability to adjust during the long lead time for constructing new nuclear units. Tr. 729-31 (Villard). In summary, as the market returns to fundamentals, there will be a sufficient supply of nuclear fuel to address the needs of new nuclear units. Tr. 731 (Villard). Moreover, the cost per MWh for nuclear fuel is much lower than for fossil fuels, as described above in Issue 2. Accordingly, variations in nuclear fuel price would have a very minor impact on customers' bills. Tr. 731 (Villard).

Environmental Compliance Cost Savings

The use of nuclear technology will minimize the uncertainty and the amount of potential future environmental compliance costs associated with CO₂ emissions. Tr. 759 (Kosky). These reduced compliance costs are reflected in FPL's economic analysis, discussed in Issue 6 below. Compared with CC or IGCC generation that might otherwise be installed, over a 40-year period of operation, Turkey Point 6 & 7 will avoid the emission of 21,300 to 49,200 tons of NO_x, approximately 14,200 to 75,400 tons of SO₂, and about 266 million to 700 million tons of CO₂. Tr. 771 (Kosky); Ex. 71, 72. The negligible "emissions" from the fuel cycle, a primary concern of the Krasowskis, are insignificant in comparison to the magnitude of the avoided emissions from the operation of nuclear units. For possible CO₂ compliance costs alone, the cumulative 40-year cost for alternative generation could range from \$6 billion to \$28 billion or more for

combined cycle generation, and \$17 billion to \$73 billion or more for IGCC generation. Tr. 776 (Kosky). And even in the unlikely case that there is no future compliance cost associated with CO₂ emissions, as suggested by the Krasowskis, massive fuel savings would still be realized by FPL's customers (Tr. 956 (Sim)) and the state, nation and world would continue to benefit from the reduced CO₂ burden on our atmosphere.

Customer Bill Impacts

The manner in which customer bills are affected is unique to nuclear, in that there is an initial period in which capital costs will be incurred and recovered before the Project's substantial fuel and environmental compliance cost savings begin to be realized. It is not possible to project bill impacts precisely at this time, due to the uncertainty in a number of key factors including the ultimate capital costs for Turkey Point 6 & 7 (which will be reviewed annually pursuant to the NPPCR Rule), future fuel costs, and environmental compliance costs. Over time, the annual capital cost recovery amounts will decline due to depreciation, while the annual fuel and environmental compliance cost savings are expected to increase. The net result of these trends is that customers should start to see their bills lowered, starting when both of the Project units go into service, and for the net savings to continue to increase during the several decades of plant operation. As described above, fuel savings alone are projected to start at approximately \$1 billion per year and grow over time, totaling a projected \$94 billion for the life of the Project. Tr. 928-29, 953, 956 (Sim); *see* Ex. 84.

ISSUE 5: Are there any renewable energy sources and technologies or conservation measures taken by or reasonably available to Florida Power & Light Company which might mitigate the need for the proposed generating units?

FPL: *No. Neither renewable resources nor conservation and DSM can mitigate the need for Turkey Point 6 & 7, alone or in combination. Even if renewable resources and conservation are achieved at levels far greater than expected, FPL's need for Turkey Point 6 & 7 will not be

eliminated. Moreover, the addition of Turkey Point 6 & 7 will not displace the potential for increasing the use of these resources, given the scope of FPL's system needs.*

FPL's projected resource need already takes into account all reasonably achievable, cost-effective DSM and renewable energy resources known to FPL. Nonetheless, a very large additional capacity need has been identified, as discussed above in Issue 1. Because DSM and renewable energy resources represent resource options so inherently different from Turkey Point 6 & 7 – in terms of baseload capacity, contribution to fuel diversity, and ability to reduce system-wide CO₂ emissions – they cannot be seen as true alternatives. Additional DSM, renewable energy resources, and new nuclear generation should all be pursued because each resource is needed. Tr. 197 (Silva). Moreover, it would be imprudent for FPL to rely on the hope that there will eventually be more cost-effective DSM and renewable generation in the future, while continuing to increase reliance on natural gas in the meantime. Tr. 198-99 (Silva); *see also* Tr. 321 (Scroggs). In any event, it is evident that additional DSM and renewable energy cannot mitigate the need for Turkey Point 6 & 7.

DSM

FPL has been very successful in using cost-effective DSM to avoid new power plant construction. The Department of Energy ranks FPL first nationally for cumulative conservation achievement and third in load management. This is not just a factor of FPL's size relative to other utilities: FPL serves about three percent of U.S. consumers, but has achieved thirteen percent of total U.S. conservation and six percent of total load management. Tr. 598, 622 (Brandt). FPL also recently completed a comprehensive review of its DSM programs to ensure that all cost-effective DSM potential has been identified through the year 2014. This review resulted in Commission approval of modifications to eight DSM programs and the addition of

two new programs. Tr. 605-06, 619 (Brandt). FPL's commitment to conservation and DSM is evident, and has not been meaningfully challenged in this proceeding.

FPL's realized DSM savings and projected future DSM is significant. Through year-end 2006, FPL implemented 3,659 MW of DSM – the equivalent of 11 medium-sized power plants after accounting for the impact of FPL's 20% reserve margin requirements. Tr. 594-95, 597-98 (Brandt). Importantly, this has been accomplished without penalizing customers who do not participate in the DSM programs. Tr. 598 (Brandt). For the August 2006 through August 2020 time frame, FPL plans to achieve the implementation of 1,899 MW of summer DSM demand reduction. Ex. 77. This will equate to the avoidance of 6,584 MW of generation capacity, when accounting for the impact of FPL's 20% reserve margin requirement. Tr. 595 (Brandt). Despite this substantial amount of DSM, the addition of Turkey Point 6 & 7 cannot be avoided. FPL's projected resource needs already accounts for all projected DSM. Tr. 159 (Silva).

The evidence presented demonstrates that even an overly optimistic amount of cost-effective DSM, if identified, could not mitigate the need for Turkey Point 6 & 7 for two primary reasons. First, FPL's system needs are so immense that the amount of additional DSM needed to avoid Turkey Point 6 & 7 is not feasible: FPL would need to achieve almost three times the DSM already projected for this time frame – or an additional 5,130 MW – in order to defer the need for Turkey Point 6 & 7. Tr. 620, 623 (Brandt); Tr. 875 (Sim). Even with dramatic improvements to technology, building codes, and customer receptivity, it is not realistic that FPL could achieve this level of peak demand reduction. Tr. 623 (Brandt). Increased use of solar water heating also could not eliminate the need for new nuclear generation. It would require over 4.5 million solar water heaters – more than the total number of FPL customers – to avoid the need for Turkey Point 6 & 7. Tr. 623 (Brandt). It would be imprudent to assume that FPL's

future resource needs will be satisfied by such dramatic future developments. Second, as discussed above in Issue 3, FPL needs additional baseload capacity that DSM, by its very nature, cannot provide.

Renewable Energy Resources

In addition to its aggressive pursuit of DSM, FPL also is working to purchase and develop substantial amounts of energy from renewable resources, and continues to explore the use of emerging technologies. In July 2007, FPL conducted a renewable energy Request for Proposals (“RFP”) that offered maximum flexibility for potential suppliers and no restrictions on price in an effort to encourage as much participation as possible. As a result, FPL received proposals from five bidders totaling 144 MW of firm capacity. FPL also received a proposal for the supply of 100 MW of non-firm capacity and energy from technology under development based on harnessing ocean current energy. Tr. 657 (McBee).

FPL also is actively involved in developing wind, solar, and ocean current energy. FPL has been attempting to site a wind project along Florida’s coast since 2004. On September 28, 2007, FPL requested zoning, conditional and height amendments for up to nine wind turbine generators which could provide up to approximately 20 MW. TR. 662 (McBee). FPL also recently announced a major solar energy initiative in Florida which is expected to begin with the installation of approximately 10 MW of capacity at an existing FPL generating site, and could eventually provide up to 300 MW of solar capacity. Tr. 663 (McBee). Although there are not enough renewable resources in Florida to make a meaningful contribution towards achieving a 20% reserve margin criterion or enhancing fuel diversity, FPL will continue to pursue renewable energy through RFPs and project development to the maximum extent possible. As explained by

several witnesses, FPL's system resource needs are large enough that it can continue to pursue a wide variety of renewable resource options. Tr. 875-76 (Sim).

ISSUE 6: Will the proposed generating units provide the most cost-effective source of power, as this criterion is used in Section 403.519(4), Florida Statutes?

FPL: *Yes. The proposed generating units are projected to provide the most cost-effective source of power, taking into account all the factors listed in Section 403.519(4). FPL's cost estimate for Turkey Point 6 & 7 includes a reasonable range for all costs, including costs associated with water supply and treatment, as well as spent fuel storage and handling. Based on reasonable projections of future fuel costs and environmental compliance costs, Turkey Point 6 & 7 is the most cost effective option, and the only option that can satisfy the factors listed in Section 403.519(4).*

New nuclear generation, in combination with conservation, renewables, and other forms of clean energy, can be a key contributor to enhancing fuel diversity, reducing emissions, and increasing system reliability, but action is required now to secure new nuclear generation as a resource option. Based upon a reasonable construction cost estimate range for building Turkey Point 6 & 7, and a reasonable range of projected fossil fuel and emission compliance costs, the evidence supports a finding that Turkey Point 6 & 7 is the most cost effective alternative available, and that steps should be taken now to secure the option of adding new nuclear generation and taking advantage of its many benefits.

Turkey Point 6 & 7 Cost Estimate

The process for creating a new nuclear project cost estimate differs from fossil or renewable generation projects. The detailed site-specific design, firm schedule, and negotiated supply contracts usually developed prior to the need filing for fossil units will not be available until several years after the need determination process for new nuclear. Therefore, the cost estimate range was developed by combining information provided by an interagency study, conducted by an industry consortium in coordination with the U.S. Department of Energy, with

FPL's own extensive construction experience in Florida. Tr. 302-04 (Scroggs). The interagency study provides a detailed and well-researched basis for new nuclear construction costs for either design that FPL is considering, because the construction methods, materials and schedules are similar. FPL also discussed design specific construction schedules with General Electric and Westinghouse, adjusted costs to account for the impact of escalation that has occurred since the study was published, and included FPL-specific costs projected for the exploratory and licensing phases of the Project. Tr. 303-04 (Scroggs). Other FPL-specific and site-specific costs such as staffing, project management, site security, supporting infrastructure, and transmission costs were also included. Tr. 305 (Scroggs). Finally, a range for the Project cost was developed to account for potential variations in key assumptions. Tr. 305-06 (Scroggs). The non-binding cost estimate range for Turkey Point 6 & 7 in 2007 dollars is \$3,108 to \$4,540 per kilowatt ("kW"). Tr. 307-08 (Scroggs); Ex. 28.

FPL's cost estimate and the economic analysis described below take into account all reasonably foreseeable costs, including costs associated with spent fuel handling, storage, and disposition. On-site dry cask storage is accounted for as an annual capital replacement charge, while the ultimate disposition by the DOE is covered by a fuel surcharge that is accrued over time. Tr. 404-07 (Scroggs).

Reasonable estimates of the costs associated with procuring and treating water that will be required for cooling are also included. FPL is currently considering several alternative sources of water, including reclaimed water from the Miami-Dade Water and Sewer Department, groundwater from the Lower Floridan aquifer or the Boulder Zone, and marine water or sea water. Tr. 335 (Scroggs). These alternatives will be fully investigated for technical,

environmental, and economic compatibility with the objectives of the Project and affected regulatory agencies. Ex. 15, Tab 15, Bates p. 000714, 000718.

Different water sources will require different mixes of capital expenditures and operation and maintenance expenses. For example, if reclaimed water is used it would be delivered in a relatively clean state and would require less capital in terms of developing a pretreatment facility on-site, but may require payments to the water authority under a water supply agreement, which could be a substantial operational cost. Tr. 342-43 (Scroggs). A capital cost estimate range of \$250 - \$300 million for water acquisition is included in FPL's total cost estimate for the Project. In addition, the cost estimate includes a component in Fixed Operation and Maintenance costs for water acquisition. Tr. 341 (Scroggs); Ex. 15, Tab 15, Bates p. 000718-719. FPL's significant experience in this area indicates that the combination of those capital expenditure and Fixed Operation and Maintenance cost estimates are sufficient to cover the costs associated with any of the water source alternatives under consideration. Tr. 336-38, 341-42 (Scroggs); Ex. 15, Tab 15, Bates p. 000719. These alternatives will be examined further and the best option will be identified and reviewed by the Florida Department of Environmental Protection and other agencies as part of the Site Certification process. Tr. 334 (Scroggs).

FPL also has properly accounted for transmission interconnection and integration costs. New system facilities and upgrades will be required for either technology design that is ultimately selected. The interconnection and integration will be accomplished as follows:

- Turkey Point 6 & 7 will be connected to a new switchyard at the site. This new switchyard will be connected by two 500 kV transmission lines to the 500 kV section of the existing Levee substation in central Miami-Dade County, which is located approximately 42 miles north of the Turkey Point switchyard.

- A new 230 kV line, approximately 13 miles long, will also be required from the Levee substation to the Gratigny substation located north and east of the Levee substation in central Miami-Dade County. The new switchyard at Turkey Point will also have a 230 kV section. The new 500 and 230 kV sections will be connected via a 500/230 kV auto-transformer.
- The new 230 kV section will be connected to the Davis substation in southern Miami-Dade County utilizing an approximately 18 mile line which will be rerouted from the existing Turkey Point plant switchyard and rebuilt to larger capacity.
- The 230 kV line rerouted from the existing Turkey Point plant switchyard will be replaced with a new 230 kV circuit from the switchyard to the Levee 230 kV substation.

Tr. 860 (Sanchez); Ex. 75. Depending upon the amount of electrical output of Turkey Point 6 & 7, other existing FPL facilities may also need to be upgraded. *Id.* The record shows that FPL has appropriately considered the range of transmission interconnection and integration costs associated with both nuclear unit designs being considered, and that such costs are reasonably accommodated within the Company's economic analyses. Tr. 307 (Scroggs); Tr. 979-81 (Sim).

While FPL's cost estimate for the Project address all costs that are reasonably foreseeable at this time, it is important to keep in mind that this need determination is not a final decision as to the costs of the Project. Rather, different costs will be incurred in phases during the development of the Project, and the amounts incurred during those phases may be higher or lower based on the results of the stepwise decision process with the Commission as the Project proceeds. Tr. 313 (Scroggs). This process will require FPL to provide a description and estimate of expenditures to be incurred in the current and subsequent year of the Project.

Interested parties will have the opportunity to review these projections. Tr. 317 (Scroggs). Each year, FPL also will include a feasibility report, in which the ongoing economic viability of the Project will be reviewed. *Id.* Based on all the information available today, Turkey Point 6 & 7 represents the most cost-effective alternative available. Additionally, as explained in Issue 3, FPL's customers are expected to realize significant fuel cost savings and savings that result from reduced emission compliance costs.

FPL's Economic Analysis

As with FPL's fuel diversity analysis described above in Issue 2, FPL performed its economic analysis utilizing the Plan with Nuclear, the Plan without Nuclear – CC, and the Plan without Nuclear – IGCC. Tr. 876 (Sim). FPL first determined the cumulative present value of revenue requirements ("CPVRR") for the three resource plans in nine different scenarios combining a range of fuel and environmental compliance cost forecasts. Tr. 876-77 (Sim). This step assumed zero capital costs for Turkey Point 6 & 7, in order to facilitate the determination of a "breakeven cost" for the project. *Id.*

The breakeven cost represents the amount that FPL could spend on new nuclear while still "breaking even" with the costs for CC or IGCC under the nine different scenarios. Tr. 877, 912 (Sim). This economic analysis resulted in a wide range of breakeven capital costs for new nuclear units. The range for new nuclear breakeven costs versus the Plan without Nuclear – CC was \$3,206 to \$7,281 per kW in 2007 dollars. The range for new nuclear breakeven costs versus the Plan without Nuclear – IGCC was \$5,921 to 9,450 per kW. These ranges generally are higher than FPL's current cost estimate range for new nuclear, which is \$3,108 to \$4,540 per kW. Tr. 877, 922 (Sim). The nuclear breakeven costs versus the Plan without Nuclear – CC were higher than the cost estimate range for Turkey Point 6 & 7 in eight of nine scenarios, and

comparable in the ninth scenario. The nuclear breakeven costs versus the Plan without Nuclear – IGCC were higher than the cost estimate range for Turkey Point 6 & 7 in all scenarios. Tr. 943 (Sim). Therefore, the economic analysis demonstrates that Turkey Point 6 & 7 likely can be constructed at a cost that would be less than the system cost of non-nuclear units that might otherwise be constructed and, at worst, would break even with such non-nuclear units. Tr. 877, 923 (Sim). In summary, there is a very good chance that the new nuclear units would result in lower total system costs than the alternatives.² Tr. 876-77 (Sim); Ex. 29.

FPL considered a reasonable range of fossil fuel price scenarios and environmental compliance cost scenarios, including a range of CO₂ emission compliance costs. No legislation controlling CO₂ emissions has been adopted yet, thus requiring a range of costs to be considered. Tr. 833-34 (Kosky). Although FPL has not assigned any probability to the various compliance cost projections, use of any one projection to the exclusion of the others does not affect the determination that Turkey Point 6 & 7 is the most cost-effective option that will also achieve the factors listed in section 403.519(4).

After FPL filed its petition and direct testimony for this proceeding, and shortly before the hearing began, updated CO₂ compliance costs were released by ICF International, the source that provides the primary inputs into FPL's projected environmental compliance costs. Tr. 791 (Kosky); Ex. 102. The updated projections slightly increase the compliance costs anticipated for CO₂, while the compliance costs for other emissions remain substantially the same. Use of the updated emission compliance costs corroborates that the Plan with Nuclear is the most cost-effective choice. In fact, if the updated compliance costs are utilized, the economics of Turkey Point 6 & 7 are even better, because the costs of alternatives – which incur these environmental

² Additionally, the benefits associated with fuel diversity, reduced CO₂ emissions, reduced reliance on natural gas and energy independence would add to the economic benefits.

compliance costs – would be higher. Tr. 822 (Kosky). The “breakeven” costs associated with adding nuclear generation would increase, causing them to be higher than the current construction cost estimate for nuclear generation in at least as many scenarios as they are currently reflected in FPL’s exhibits. Tr. 961-62, 969-70 (Sim); Ex. 103.

Finally, the results of the scenario analysis do not factor in two very important statutory criteria: improving fuel diversity and reducing Florida’s dependence on natural gas and fuel oil. Accordingly, even in the one scenario where the results of the economic analysis show approximate equality between the Plan with Nuclear and the Plan without Nuclear – CC, the application of these statutory considerations compels the selection of Turkey Point 6 & 7 as the preferred alternative. Tr. 180 (Silva). FPL’s fuel diversity analysis and the fuel diversity benefits that Turkey Point 6 & 7 will provide are discussed above in Issue 2.

ISSUE 7: Does Florida Power & Light Company’s nuclear power plant petition contain a summary of any discussions with other electric utilities regarding ownership of a portion of the plant by such electric utilities, consistent with the requirements of 403.519(4)(a)5, F.S., and Rule 25-22.081, F.A.C.?

FPL: *Yes. FPL’s petition contains a summary of discussions with other electric utilities regarding ownership of a portion of the plant, consistent with the requirements of 403.519(4)(a)5, Fla. Stat., and Rule 25-22.081, F.A.C.*

Florida Municipal Energy Association (“FMEA”), Florida Municipal Power Agency (“FMPA”), Orlando Utilities Commission (“OUC”), Seminole Electric Cooperative, Inc. (“Seminole”), and JEA each asserted an interest in pursuing discussions with FPL related to the potential co-ownership of Turkey Point 6 & 7. An agreement was reached with those parties at the beginning of the hearing and the language to which each of these parties stipulated was entered into the record as Exhibit 94. The stipulation states as follows:

FPL has had initial discussions with FMEA, FMPA, and OUC regarding any mutual benefits that may accrue from joint participation in Turkey Point Units 6 & 7. No later than July 1, 2009, FPL will continue its good faith discussions with FMEA, FMPA and OUC, and will also commence good faith discussions of joint participation in Turkey Point Units 6 & 7 with JEA and Seminole. FPL will report on the status of such ongoing status discussions to the FPSC every quarter thereafter. The results of these ongoing status discussions shall be reported to the FPSC as part of a docket which will be opened by the FPSC pursuant to its authority under the Grid Bill as codified in the Florida Statutes, in order to provide the parties with such rights and remedies as may exist to the extent of the FPSC's jurisdiction thereunder. FPL, FMPA, FMEA, JEA, OUC and Seminole each agree that such docket to be opened by the Commission pursuant to its Grid Bill authority is the sole forum for raising issues concerning joint participation in Turkey Point 6 & 7. FMPA, FMEA, JEA, OUC and Seminole each agree not to intervene or otherwise participate directly or indirectly in section 366.93, Florida Statutes, cost recovery proceedings for the purpose of addressing joint participation in Turkey Point 6 & 7. Nothing in this stipulation is intended to imply that ongoing status discussions necessarily will lead to an agreement among any of the parties for joint participation in Turkey Point 6 & 7 or that any party is obligated to enter into any such agreements.

The nature of the stipulation did not require participation by the remaining parties, OPC and the Krasowskis. OPC did not dispute FPL's position on this issue. The Krasowskis assert as their position that FPL has not satisfied the requirements of section 403.519(4)(a)5, Florida Statutes, and Rule 25-22.081, Florida Administrative Code. But both FPL's petition and the testimony of Mr. Scroggs address the co-ownership discussions that have taken place, and on the face of those documents, the requirements of section 403.519(4)(a)5 and Rule 25-22.081 have been met. By virtue of what was described in FPL's filing, parties were able to conduct discovery on the underlying details of those discussions. The Krasowskis presented no evidence through the cross examination of FPL witnesses or otherwise in support of their position and accordingly it must be rejected.

ISSUE 8: Based on the resolution of the foregoing issues, should the Commission grant Florida Power & Light Company's petition to determine the need for the proposed generating units?

FPL: *Yes. For the foregoing reasons, as supported by the evidence presented, the Commission should grant FPL's petition to determine the need for Turkey Point 6 & 7. Turkey Point 6 & 7 is the only resource option that can provide needed baseload capacity and enhance fuel diversity with zero CO₂ emissions. Furthermore, considering all the costs associated with new nuclear generation and a wide range of projected fuel costs and environmental compliance costs, Turkey Point 6 & 7 is expected to be the most cost-effective choice.*

The record shows that Turkey Point 6 & 7 is the best available baseload option to enhance fuel diversity and is the only such option that can help FPL achieve meaningful reductions in CO₂ emissions. The evidence further demonstrates that it is the economically preferred alternative in nearly all future fuel cost and environmental compliance cost scenarios. Tr. 108-09 (Olivera). The Project meets all the criteria in section 403.519(4), and accordingly, an affirmative determination of need should be granted.

If an affirmative determination of need were not granted, FPL effectively would be prevented from pursuing the development of new nuclear baseload generation for the next decade. Tr. 189 (Silva). Such a result likely would lead to adverse economic consequences, as evidenced by the favorable cost-estimate for Turkey Point 6 & 7 as compared to the breakeven capacity costs for new nuclear. Tr. 938 (Sim). When coupled with FPL's inability to pursue new advanced technology coal-fired baseload generation, FPL's customers also would face adverse consequences related to the reduced system reliability due to significantly lower fuel diversity for the foreseeable future. *Id.* Additionally, other utilities would be less likely to pursue new nuclear generation, causing the entire state to increase its reliance on natural gas. Tr. 190 (Silva). Finally, denial of FPL's petition would eliminate the most effective and cost-effective means of reducing CO₂ emissions while continuing to meet the electricity needs of

customers. Accordingly, it is strongly in the best interests of FPL's customers to grant this petition for a determination of need. Tr. 189-90 (Silva).

An affirmative determination of need will represent the first, crucial step in a process that will maintain the possibility of adding new nuclear capacity to FPL's generating fleet beginning in 2018. The actual development and construction path will be adjusted in light of additional information that will be manifest in later years, and the Commission will retain the ability to review and evaluate future decisions contemporaneously, ensuring that the final result is in customers' long-term best interests. The affirmative determination of need should reflect explicit support for the proposed project, in recognition of the many economic and non-economic benefits that new nuclear generation can provide to FPL's customers. Merely affirming that Turkey Point 6 & 7 meets the statutory criteria in section 403.519(4) may not be adequate to alleviate industry and investor concerns surrounding the investment in and development of new nuclear generation. It is important that the Commission acknowledge the risks associated with the Project and recognize that a collaborative, step-wise decision making approach with continued regulatory support is necessary to the successful deployment of new nuclear generation in Florida and in the best interests of FPL's customers. Tr. 109, 112-113 (Olivera); Tr. 1008-10 (Reed).

ISSUE 9: If the Commission grants Florida Power & Light Company's petition to determine the need for the proposed generating units, should FPL commit, prior to the completion of the Rule 25-6.0423 cost recovery proceeding in 2008 (the "2008 NPPCR Proceeding"), to make advance forging reservation payments of approximately \$16 million to Japan Steel Works in order to preserve the potential for 2018-2020 in-service dates for the proposed generating units?

FPL: *Yes. If the Commission grants the determination of need for Turkey Point 6 & 7, the Commission should state that its support for the Project includes an acknowledgement of the necessity to make this financial commitment to mitigate the risks associated with the overall project schedule. The prudence of the commercial arrangement itself, i.e., contractual terms,

including price terms, portability, or other compensatory aspects will be determined in the ordinary course of the annual cost recovery proceeding.*

If it grants a determination of need for Turkey Point 6 & 7, the Commission should acknowledge in its order that the construction of the Project will be a highly complex process, involving an enormous and unprecedented investment of funds, time and resources on the part of FPL. The Commission also should find that the development of this important resource option will necessitate much more participation and oversight by this Commission than would be customary or usual with respect to the other types of resource options that have previously been approved through the Need Determination process. The Commission's NPPCR Rule and the annual review proceedings contemplated under the rule will provide an important vehicle for that participation and oversight.

The Commission has broad jurisdiction to review and consider utility initiatives. Thus, a jurisdictional utility may elect, from time to time, to request approval or direction from the Commission on an item or action of particular interest, challenge, or risk to FPL and its customers. The 2006 amendments to chapters 366 and 403 of the Florida Statutes, intended by the Legislature to promote the development of nuclear energy in the state of Florida, should not be read as limiting or narrowly circumscribing the opportunity of a utility to seek such approval or direction that otherwise is available more broadly under chapter 366. For example, while the NPPCR Rule was developed to provide "alternate cost recovery mechanisms," neither section 366.92(2) nor the NPPCR Rule can be construed as establishing the exclusive means of cost recovery or, for that matter, the exclusive means available to the Commission of promoting nuclear generation.

The construction process for a nuclear generating unit will involve numerous and substantial financial commitments, some of which will involve long-lead procurement. Advance payment for long lead procurement items involves reserving manufacturing space and initiates the process to complete the design, purchase and delivery of special heavy forgings and equipment so that they will be prepared and ready to be placed at the appropriate time during the complex construction process. The unique nature (e.g., size, shape, quality requirements) of these forgings requires several years to design, fabricate and deliver them to the site. Often the selection of vendors is very limited. Tr. 291-92 (Scroggs).

Issues such as these typically will be addressed in the annual NPPCR proceedings. In the course or context of asking for a Commission determination as to the reasonableness of projected costs under the NPPCR Rule, the Company will ask the Commission to find that certain initiatives or decisions are necessary, appropriate or reasonable. The choice of language to express this concept was the source of some degree of debate and concern during the hearing. To clarify the Company's position on this matter, the term used is less important than the effect of the decision. Indeed, in the interest of providing a supportive regulatory framework, particularly with respect to a project the scale of which has never before been undertaken by any utility in the state of Florida, it is critical that there be no misunderstanding regarding the effect of the Commission's decision on this particular issue. If the Commission agrees that the Company should proceed to make the commitments referenced in Issue 9, its decision would prevent further review and consideration of whether that commitment should have been made in the time frame contemplated. In effect, it would amount to a finding of prudence *as to the activity or act* of placing the order, but would reserve for the NPPCR proceedings the

Commission's determination as to the prudence of the commercial arrangement itself, i.e., contractual terms, including price terms, portability, or other compensatory aspects.

In precisely this vein, the Company has presented in this proceeding an important, early and large commitment that FPL believes should be made in order to preserve the potential to meet the 2018 and 2020 in-service dates. This particular commitment would need to be made prior to the completion of the first of the annual review proceedings. As a result, FPL will not have the opportunity to seek Commission approval of the decision to make this expenditure during the 2008 NPPCR Proceeding.

FPL presently expects that the commitments FPL would have to enter into prior to completion of the 2008 NPPCR Proceeding would result in advance payments totaling approximately \$16 million. Tr. 289-92, 433-34 (Scroggs). While the specific commercial terms surrounding the reservation fee have not yet been negotiated, the payment will come from FPL and be remitted, directly or indirectly, to Japan Steel Works. It may or may not be routed through FPL's primary vendor – General Electric or Westinghouse. Tr. 435-36 (Scroggs). It is highly unlikely that a confluence of all possible adverse terms and events would occur, resulting in FPL losing all value associated with the reservation fee or having to pay two reservation fees. Tr. 478 (Scroggs). FPL intends to select a design and vendor prior to making the reservation fee payment. The hypothetical situation presented to FPL, in which FPL makes the reservation fee payment and then chooses a different design, would only occur if some fatal flaw were uncovered with respect to the initial design choice. Tr. 435-41, 478 (Scroggs).

If the Commission grants the determination of need for Turkey Point 6 & 7, the Commission should state that its support for the Project includes an acknowledgement of the necessity to make this financial commitment to mitigate the risks associated with the overall

project schedule. The prudence of the commercial arrangement itself, i.e., contractual terms, including price terms, portability, or other compensatory aspects would be determined in the ordinary course of the annual cost recovery proceeding.

Issue 10: Should this docket be closed?

FPL: *Yes.*

Respectfully submitted this 15th day of February, 2008.

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CERTIFICATE OF SERVICE

I **HEREBY CERTIFY** that a true and correct copy of the foregoing has been furnished electronically this 15th day of February, 2008, to the following:

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