City of Miami

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June 23, 2017

Ms. Carlotta S. Stauffer, Commission Clerk
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

RE: Docket No. 170009-EI

Dear Ms. Stauffer:

Attached please find for filing in Docket No. 170009-EI the **Direct Testimony of Eugene T. Meehan**. This document is being resubmitted due to a formatting error in the original, which was submitted on June 20, 2017. Other than formatting, the two documents are identical. The following was filed through the Florida Public Service Commission's E-Filing Portal.

If you have any questions, please do not hesitate to contact us. Thank you for your attention to this matter.

Sincerely,

s/ Xavier E. Albán

Xavier E. Albán
Assistant City Attorney

Enclosures

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy of the foregoing has been furnished to all counsel listed on the attached Service List via e-mail, this 23rd day of June, 2017.

By: *s/ Xavier E. Albán*
Xavier E. Albán
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BEFORE THE PUBLIC SERVICE COMMISSION

DOCKET NO. 170009-EI

THE CITY OF MIAMI

JUNE 20, 2017

IN RE: NUCLEAR POWER PLANT COST RECOVERY

FOR THE YEAR ENDING

DECEMBER 2018

TESTIMONY & EXHIBITS OF:

EUGENE T. MEEHAN

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

THE CITY OF MIAMI

DIRECT TESTIMONY OF EUGENE T. MEEHAN

DOCKET NO. 170009-EI

JUNE 20, 2017

Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A. My name is Eugene T. Meehan. I am an independent energy and utility consultant. My address is 7042 Powderhorn Ct., Park City, Utah, 84098. I have prepared pre-filed testimony on behalf of the City of Miami ("the City").

Q. PLEASE SUMMARIZE YOUR PROFESSIONAL QUALIFICATIONS.

A. I have over thirty five years of experience consulting with electric and gas utilities. That work has involved examination and advice on many issues related to power markets, power contract design, long term generation expansion planning, competitive bidding and contract evaluation. For the past fifteen years, I have been extensively involved in advising clients on restructuring-related issues, including risk analysis, risk management, power plant and power contract valuation, and post transition regulatory issues. In recent years, I also have advised several utilities with respect to the acquisition of power from third parties. These assignments have involved the review of power contract offers made by competitive power marketers and owners of generation assets. I have testified several times with respect to the prudence of utility planning and power procurement and the economic implications of

specific generation investment decisions, primarily in regard to investment in nuclear facilities. I have performed these assignments as a Senior Vice President with NERA Economic Consulting ("NERA") (a position I retired from in November 2014), as a Principal at Deloitte Consulting, and a Vice President at Energy Management Associates ("EMA"). Exhibit ETM–1 contains a more detailed statement of my qualifications.

Q. PLEASE BRIEFLY SUMMARIZE YOUR EXPERIENCE AS A CONSULTANT PROVIDING ADVICE AND TESTIMONY RELATED TO THE ECONOMIC ANALYSES OF NUCLEAR INVESTMENTS.

A. In the early 1980s, I advised the owners of the Nine Mile Point 2 nuclear unit on the economics of continuing with construction of the Nine Mile Point 2 nuclear unit. This analysis examined the costs and benefits of continuing with construction of the unit versus abandoning the unit and recovering the investment to date. I testified on the topic before the New York Public Service Commission. In the same general time frame, I worked on similar analyses for the owners of the Allen's Creek and Black Fox Nuclear plants. In the mid and late 1980s, I analyzed and testified as to the prudence of the Nine Mile Point 2 nuclear unit and to the prudence of the decision to complete unit 2 at the South Texas Project nuclear plant. In the 1990s, I directed projects for the Public Service Company of Colorado examining the economics of replacements to the Fort St. Vrain nuclear plant, for Central Maine Power Company examining the potential retirement of the Maine Yankee nuclear plant and for Niagara Mohawk Power Company examining the potential retirement of unit 1 at the Nine

Mile Point nuclear facility. I have recently completed for the Ontario Independent Electricity System Operator a Fairness Opinion with respect to a long term (through the early 2060s) contract for securing the refurbishment and operation of the 6300 MW Bruce nuclear facility. In September of 2015, I testified on behalf of Entergy Nuclear before the New York State Department of Environmental Conservation with respect to the economic consequences of various fish protection measures that would have mandated significant shut downs for the Indian Point nuclear units.

Q. **HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION ("COMMISSION")?**

A. Yes. In 1987, I testified before the Commission on behalf of the investor-owned and larger non investor-owned electric utilities in peninsular Florida on the subject of electric system generation planning and the appropriateness of the model used by those entities in the context of calculating avoided costs. I also testified on behalf of the City of Miami in Docket No. 150009-EI and submitted written testimony in Docket No. 160009-EI.

Q. PLEASE PROVIDE AN OVERVIEW OF YOUR TESTIMONY.

A. I have been requested by the City of Miami to review the pleadings, testimony, and deposition testimony provided in this case with respect to the annual feasibility analysis of the investment in Turkey Point 6 and 7. Florida Power & Light Company ("FP&L") has not provided a feasibility study and appears to have no intent to conduct or provide such a study until and unless it decides to seek Commission

approval to move forward with construction of Turkey Point 6 and 7. FP&L, through witness Scroggs, is arguing that past feasibility studies (most notably the 2015 feasibility study) and the potential qualitative benefits justify continued investment in Turkey Point 6 and 7 and provide a sufficient basis to conclude that continued investment to obtain and maintain a Nuclear Regulatory Commission (NRC) license authorizing construction and operation (COL) for Turkey Point 6 and 7 is reasonable and prudent. My testimony examines FP&L's position and its underlying support. I conclude that FP&L's logic is flawed and that as a result of the significant delay in the in-service date associated with FP&L's decision to wait at least three to four more years before deciding to enter pre-construction and the staleness of key assumptions underlying the economics, a full feasibility analysis is required to establish that any continued investment during the licensing phase is prudent. Absent such a feasibility study there is no reasonable basis upon which to conclude that any continued investment in Turkey Point units 6 and 7 is justified. There is no evidence, qualitative or quantitative, that would support a Commission finding that proceeding with continued investment to obtain and maintain a COL for Turkey Point 6 and 7 is reasonable. FP&L's position appears to be supported by an unarticulated logic that incremental expenditures and hence the costs of continuing are low and hence it is worthwhile to maintain the option of obtaining a COL that will authorize the construction and operation of two AP 1000 units at Turkey Point. As I will demonstrate in my testimony, that is not necessarily true.

Q. PLEASE DESCRIBE THE INSIGHT THAT THE ANNUAL FEASIBILITY STUDY PROVIDES IN NUCLEAR COST RECOVERY CLAUSE PROCEEDINGS BEFORE THE COMMISSION.

A. The annual economic feasibility study provides the Commission with a quantified basis on which it can base a decision that continued investment in a major generation project that qualifies for current rate recovery is justified.

Q. WHAT IS THE DIFFERENCE BETWEEN A QUANTITATIVE ECONOMIC FEASIBILITY ANALYSIS AND A QUALITATIVE ECONOMIC FEASIBILITY ANALYSIS?

A. A quantitative feasibility analysis examines the costs of pursuing the investment as compared to a reasonable alternative and produces quantified information including a measure of the present value advantage of pursuing the investment, the break-even cost, measures of the year by year rate impact of pursuing the investment versus a reasonable alternative, and measures of relevant items such as fuel usage and emissions. A qualitative analysis most often fails to directly compare the investment to a specific reasonable alternative and most often merely cites potential positive aspects of the investment without any reference to the costs of realizing those positive aspects or any comparison to alternate means of achieving those aspects.

Q. WOULD A QUALITATIVE ANALYSIS OF THE LONG-TERM FEASIBILITY OF THE TURKEY POINT UNITS 6 & 7 PROJECT PROVIDE

A SUFFICIENT BASIS FOR CONTINUED INVESTMENT IN THE TURKEY POINT UNITS 6 & 7 PROJECT?

A. In my opinion such an analysis is not sufficient. While it is obviously true that Turkey Point 6 and 7 will enhance FP&L's fuel diversity and reduce emissions relative to a natural gas alternative, merely observing those factors qualitatively provides little to no useful information as to whether the investment is justified. Without any idea as to the cost of the project relative to a reasonable alternative or relative to the quantified value of the qualitative benefits, there is no sensible basis on which to evaluate the desirability of continued investment in a project.

Q. HAS FP&L SUBMITTED OR CONDUCTED A QUANTITATIVE ANALYSIS OF THE LONG-TERM FEASIBILITY OF THE PROJECT SINCE 2015?

A. No. In his deposition, attached as Exhibit ETM-2, Mr. Scroggs is clear that FP&L has not conducted any quantitative feasibility analysis since 2015. (ETM-2 at p.93, lines 20-21). He acknowledges that continued low gas prices and likely delays in the imposition of carbon emission costs are negative factors with respect to the economic feasibility of Turkey Point 6 and 7. He fails however to mention another major development. Between 2015 and 2017 FP&L's 2024 forecast of total peak demand has declined by over 1000 MW, its forecast of net firm demand for 2014 has declined by over 800 MW and its forecast for 2024 of net energy adjusted for DSM has declined by over 8000 GWh. (*See* Exhibits ETM-3 and ETM-4 (Schedules 3.1 and Schedule 3.3 of FP&L's 2015 and 2017 ten year site plans). Essentially, the peak and energy forecasts have declined by volumes roughly equal to the capacity and energy

of one of the planned Turkey Point units. This factor could potentially have as a big an impact on the need for and economic feasibility of Turkey Point 6 and 7 as well as the low gas prices and delay in carbon regulation. Additionally, Mr. Scroggs only makes general allusions to natural gas prices and does not provide any detail as to what has actually happened with respect to forecasts between 2015 and 2017. I reviewed Mr. Brown's 2015 exhibits and found that FP&L assumed a 2027 natural gas price of $6.89 per mmBTU. (ETM-5). The 2017 Department of Energy Annual Energy Outlook has a 2027 natural gas price that is equivalent to $6.10 per mmBTU.[1] As EIA presents its forecasts in 2016 dollars, the actual value reported is $4.75 per mmBTU, which I escalate for 11 years at 2.3% to convert to 2027 dollars. The 2.3 % is the long term inflation forecast from the Second Quarter 2017 Survey of Professional Forecasters published by the Federal Reserve Bank of Philadelphia. (ETM-6). This is a decline of 11% from FP&L's 2015 feasibility analysis. It is certainly possible that even if one were to accept all the assumptions in FP&L's 2015 feasibility analysis the decline in forecast peak and energy loads, the continued decline in natural gas price forecasts and potential delays in carbon regulation would result in that analysis showing that Turkey Point 6 and 7 are not economically feasible.

Q. IN YOUR OPINION, HAS FP&L SUBMITTED EVEN A QUALITATIVE ANALYSIS OF THE LONG-TERM FEASIBILITY OF THE PROJECT THAT HAS PROVIDED A SUFFICIENT BASIS FOR CONTINUED INVESTMENT IN THE TURKEY POINT UNITS 6 & 7 PROJECT?

[1] *See* https://www.eia.gov/outlooks/aeo/data/browser/#/?id=72-AEO2017&cases=ref2017&sourcekey=0.

A. No. The testimony filed by Mr. Scroggs on March 1, 2017 states:

> "Benefits related to fuel diversity, transmission system reliability, zero greenhouse gas emissions and energy security, described above, remain unchanged and are significant. However, as natural gas prices have continued to move to exceptionally low levels, and due to delays in implementation of compliance costs for attaining carbon dioxide goals, fuel and emission savings associated with new nuclear have decreased relative to prior projections."

The "above" to which Mr. Scroggs' testimony refers contains no qualitative analyses of the benefits of Turkey Point, but merely contains observations that a new nuclear plant in south Florida will provide fuel diversity, reduce carbon emissions and increase local reliability. "Significant", the term he uses to describe these benefits is undefined and there is no evidence that even qualitatively these benefits would be significant relative to the costs of obtaining them. As in 2016, he suggests that an economic feasibility analysis is not needed because there remain qualitative benefits to Turkey Point Units 6 & 7 project and these benefits in his view obviously outweigh the amount that FP&L has asked be approved. He continues to concede, in my reading, that as a result of continued low gas prices and environmental regulatory uncertainty the base economic outlook for Turkey Point 6 and 7 is uncertain and that FP&L would not at the current time commit to pursuing construction (or even pre-construction activities) even if it had all licenses and permits and was in a position to request approval to proceed.

Q. ARE THERE ANY INDICATIONS THAT IN ADDITION TO QUANTITATIVE BENEFITS ERODING, THE QUALITATIVE BENEFITS CLAIMED BY FP&L HAVE ALSO DECLINED?

A. Yes. There are very strong indications in this regard. In his May 1, 2017 testimony on, page 9, lines 10 to 14, Mr. Scroggs states that:

> "Additionally, increased natural gas pipeline infrastructure and supply diversity options have been developed. As we look forward, we can see that the price of solar photovoltaic generation has decreased to a point supporting large scale installations throughout Florida, satisfying a portion of the growing demand with a non-traditional, fuel-diverse generation source."

The testimony above can only be interpreted to indicate that the fuel diversity benefits of Turkey Point 6 and 7 have also declined since 2015. While I agree with Mr. Scroggs that solar is not a substitute for base load power from a system supply perspective, it is a substitute with respect to fuel diversity. Internationally, solar prices have dropped to 3 cents per KWh. At those price levels solar can provide significant fuel diversity benefits and carbon emission reduction benefits while other capacity provides firm supply. Mr. Scroggs testimony, as quoted above, recognizes this. However, FP&L has not provided any analysis that would quantify the costs of achieving fuel diversity with means other than the construction of Turkey Point 6 and 7. In addition to not quantifying the benefits of fuel diversity, this is a significant gap in FP&L's analysis and it undermines any claim that continuing to pursue a COL is worthwhile as an option because it provides fuel diversity. There are other ways to

provide fuel diversity that are potentially significantly lower cost ways to achieve fuel diversity.

Q. IS THERE ANY SUPPORT FOR A CLAIM THAT THE QUALITATIVE BENEFITS CLAIMED BY FP&L ARE SUFFICIENT TO JUSTIFY CONTINUED INVESTMENT IN TURKEY POINT 6 AND 7?

A. No. There is a logical flaw in the argument set forth by Mr. Scroggs. Even if one accepts that the qualitative benefits of Turkey Point Units 6 and 7 do outweigh the funds that FP&L will expend to obtain and maintain the COL, it is impossible to conclude that the money is worth spending without having some idea of the potential overall economic feasibility of the investment. If, for example, it was likely that the investment would provide long term economic benefits, break even in the long-term, or even come close to breaking even, it is correct that the qualitative benefits alone may justify the expenditure of the funds requested for 2018 even absent a commitment to actually construct the plant. However, if there is a significant deficit in the underlying economics that can be quantified, it may not be justified to continue expenditures. It is impossible to determine whether additional funds should be expended without a full economic feasibility analysis. The potential for long-term economic gains or losses should be weighed along with qualitative benefits and required incremental expenditures by examining the long-term economic feasibility analysis. The approach taken by Mr. Scroggs instead assumes that the long-term economic feasibility is at least break even and argues for bypassing the economic feasibility study and looking at only a weighing of qualitative benefits and future

expenditures. Absent a full economic feasibility study, the Commission would be basing a decision to continue funding on a mere assumption and not on a quantified economic analysis.

Further as Mr. Scroggs stated in his May 11, 2016 deposition and again confirmed this year, the earliest feasible in service dates for Units 6 and 7 were 2030 and 2031, respectively. I have not seen any evidence this year that those dates have moved forward. That means that on a present value basis each dollar of benefit realized from the investment in the first year of its operation will be worth at most 39 cents in current present value. A quantitative study is needed to put the costs and benefits in perspective as investments that may seem small today are actually much larger when account is taken that they will produce no benefits for at least thirteen years.

Q. DO YOU AGREE WITH MR. SCROGGS' TESTIMONY WITH FP&L'S DECISION TO NOT PROVIDE A FEASIBILITY ANALYSIS UNTIL FP&L SEEKS TO ENTER THE PRE-CONTRUCTION PHASE?

A. No. The obvious flaw in this logic is that it assumes that the ***only*** purpose of the economic feasibility study is to decide on whether to enter pre-construction. It ***assumes*** but does not demonstrate that all funds that will be expended prior to a decision to enter pre-construction or abandon the plant are justified by likely economic benefits. This is especially aggravated by FP&L's request that the Commission rule that continuing to seek to obtain and maintain the COL is reasonable. It is necessary to conduct a fully quantified feasibility study to determine if continuing to expend funds on Turkey Point Units 6 and 7 during the licensing

phase is reasonable. I understand that Mr. Scroggs dismisses the need for an updated feasibility study and in addition to his references to qualitative benefits, justifies such a dismissal based on references to prior studies including FP&L's 2015 feasibility analysis. However, earlier studies, including the 2015 study, cannot be relied on. The 2015 feasibility study can no longer provide guidance as to the quantitative benefits given the further declines in natural gas prices and the reduction in FP&L's load forecast. Additionally, even putting aside the skepticism that I have concerning the soundness of the assumptions underlying that study and the further development with respect to gas prices and load forecasts, there is a major change that needs to be considered. The in-service dates in the 2015 study were 2027 and 2028. The current earliest in service dates are 2030 and 2031. That change alone requires that an updated feasibility study be provided as benefits will be delayed by at least three years. Additionally, the delay further brings in to question some of the assumptions underlying the 2015 study. For example, the carbon price forecast (a carry-over from 2012), which was a critical factor in viability, was only developed and supported through 2030. Extrapolations after 2030 were based on undocumented oral interchanges. As I showed in my 2015 testimony the carbon values were pivotal to feasibility. (*See* ETM-7) With the delay in the in-service dates, reliance on the 2015 feasibility study is very tenuous as the underlying assumptions for the critical carbon value are now wholly based on undocumented extrapolations.

Q. ARE THERE OTHER ELEMENTS OF THE 2015 FEASIBILITY STUDY THAT RENDER THAT STUDY UNSUITED FOR DRAWING ANY CONCLUSIONS?

A. Yes. That feasibility study was conducted almost two years prior to the bankruptcy of Westinghouse, the entity that FP&L was planning to rely on as the EPC contractor. Additionally since that study was conducted, significant delays and costs overruns have been reported at the two AP 1000 projects under construction in the United States, at Plant Vogtle in Georgia and at the Summer plant in South Carolina. In fact the delays and cost overruns at those projects are reported as the cause for Westinghouse to enter bankruptcy and exit the EPC business. It is not only that the benefits of constructing and operating Turkey Point 6 and 7 have declined since the 2015 feasibility study but the costs have also likely risen substantially. The construction cost estimates in 2015 while a wide range were developed before the bankruptcy of Westinghouse and before reports of the extensive delays and cost overruns at the other AP 1000 projects. These developments can logically only increase the costs estimates relative to those used in the 2015 feasibility study and this further contributes to the unsuitably of basing any decisions on that study. I recognize that in his deposition Mr. Scroggs has refused to provide a view as to whether delay would in fact reduce the present value economic benefit of fuel cost and emission reduction savings. At best I think that is obfuscation. If a delay does not decrease or increases the quantified value of such benefits it simply means that the benefits identified in the near term were very low relative to very long term forecasts. For example, a delay from 2027 to 2031 will mean that benefits that would

have been realized in 2027, 2028, 2029 and 2030 will in FP&L's study be dropped and replaced by benefits potentially realized in 2087, 2088, 2089 and 2090 that were not considered in the prior study. On a present value basis, a dollar in 2087 is worth only 0.6 cents today. This calls in to question the credibility of the feasibility study itself. An investment for which value does not diminish with delay is an investment that is being justified on extremely speculative long term assumptions. Additionally, if delay is economically positive, it would be necessary to study the economics of deliberate delays as well as accidental delays. If the fuel and emission cost benefits of Turkey Point 6 and 7 increase as the plant is delayed, the optimal course of action may be a delay until 2040 or 2050 at which point new nuclear technology may be available. Delay is not a positive feasibility development and any claim otherwise is based on a flawed economic analysis.

Q. DO THE SAME CONCERNS EXIST WITH RESPECT TO THE QUALITATIVE ASPECTS OF FP&L'S JUSTIFICATION OF CONTINUED INVESTMENT IN TURKEY POINT 6 AND 7?

A. Yes. Even the qualitative analyses are out of date. As noted, Mr. Scroggs has acknowledged that the improvements in natural gas infrastructure and decline in solar cost in Florida will "satisfy a portion of the growing demand with a non-traditional, fuel-diverse generation source." Fuel diversity has been and remains the primary qualitative justification for Turkey Point 6 and 7. Yet FP&L now acknowledges that its objective is being achieved in other ways. In his deposition, Mr. Scroggs

confirmed that FP&L has not performed any quantitative analyses of fuel diversification benefits.

Q. DO YOU HAVE OTHER CONCERNS WITH RESPECT TO THE BREADTH OF FP&L'S ANALYSIS?

A. Yes. Mr. Scroggs indicated that FP&L has not commissioned a forecast of carbon emission costs since 2012. That forecast was in and of itself not suited for purposes of the required analysis as it extended only through 2030, a small portion of the operating life in the 2015 study and completely outside of the current operating period. As I noted in my 2015 testimony, carbon costs were critical to the alleged feasibility. (*See* ETM-7). On an overall basis FP&L has failed to:

- Update the 2015 feasibility study to capture the impacts of natural gas price forecast declines and its own lower load forecast;
- Obtain a recent long term forecast of a very critical assumption to its feasibility study; and,
- Quantify benefits it considers only qualitatively, despite admitting that for a primary qualitative benefit – fuel diversity – new solutions are available.

There appears to be a preference to avoid providing the Commission any quantitative information with respect to the current feasibility of the investment despite considerable indications that the investment may not be economically feasible.

Q. IS IT POSSIBLE FOR AN ENTITY OTHER THAN FP&L TO DETERMINE OR EXAMINE THE ECONOMIC FEASIBILITY OF THE TURKEY POINT 6 AND 7 PROJECT WITHOUT AN UPDATED FEASIBILITY ANALYSIS FROM FP&L?

A. It is impractical to examine economic feasibility without an analysis from FP&L. Aside from the massive effort and the difficulty of assembling the data that FP&L has readily available to conduct the analysis, and developing alternate plans, a proliferation of economic analyses would not provide the Commission useful economic feasibility information. It would be difficult to identify differences in feasibility resulting from different study approaches submitted by various parties using non-uniform information. By having FP&L provide a feasibility analysis, there is a base from which economic feasibility can be examined and alternate plans presented that can test conclusions that FP&L may reach without the added confusion of whether any differences is a result from different study approaches.

Q. FP&L's JUSTIFICATION FOR EXPENDING FUNDS TO OBTAIN AND MAINTAIN A COL HAS SHIFTED FROM A CLAIM THAT CONSTRUCTION OF TURKEY POINT IS CURRENTLY ECONOMICALLY FEASIBLE TO A CLAIM THAT IT MAY EVENTUALLY BE ECONOMICALLY FEASIBLE IF CIRCUMSTANCES CHANGE AND IT IS REASONABLE TO MAINTAIN THE OPTION OF CONSTRUCTING TWO AP 1000 UNITS AT TURKEY POINT. IS SUCH A CLAIM AMENBALE TO QUANTIFICATION?

A. Yes. Obtaining and maintaining the ability to construct a nuclear plant is a "real option". Analytical methodologies exist to quantify real option value. FP&L has not attempted to quantify the real option value. Quantification of real option value is necessary in order to reach a conclusion that continuing to pursue a COL is reasonable.

Q. DO YOU BELIEVE THAT CONTINUED INVESTMENT IN THE TURKEY POINT UNITS 6 AND 7 PROJECT CAN BE FOUND TO BE REASONABLE BASED ON THE ANALYSES PROVIDED BY FP&L?

A. No. In my opinion the decision to continue funding investment in the Turkey Point Units 6 and 7 project requires a full blown quantitative feasibility analysis, in conjunction with a reasonable attempt to quantify the claimed qualitative benefits, and, a quantitative real option value analysis. These analyses can only be practically provided if FP&L develops and files such analyses with the Florida Public Service Commission. Absent a long-term feasibility analysis, there is no method of accurately determining whether continued investment into the project is prudent and any costs incurred are reasonable. Given that no such analysis has been provided it cannot be determined if FP&L's continued investment in Turkey Point Units 6 and 7, albeit at relatively low levels, is reasonable and prudent. A Commission finding that it is reasonable to continue investing to obtain and maintain a COL is not justified by the evidence. Such a finding would effectively limit challenges to future cost recovery to the prudence of the particular costs incurred and bar challenges as to the prudence of the decision to incur costs related to those activities. Moreover, the Commission

would be making a finding that is unsupported by any facts that continuing to obtain and maintain a COL is reasonable.

Q. ARE THERE SIGNIFICANT COSTS TO A COMMISSION FINDING THAT CONTINUING ACTIVITIES TO OBTAIN AND MAINTAIN THE COL FOR TURKEY POINT 6 AND 7 IS REASONABLE?

A. Yes, the costs of doing so are potentially very large. While I recognize that the sums of money spent on these activities may be as low as $10 to $15 million in 2018 and $5 million a year thereafter and that even absent the Commission finding now that these costs are reasonable, FP&L will have an opportunity in the future to demonstrate that it made a reasonable decision to proceed with these activities and to recover these expenditures, the consequences are very large. A Commission finding that is unsupported by any facts or analysis could damage the credibility of the Commission and may well erode support for the Nuclear Cost Recovery statute. As Mr. Scroggs testifies beginning on page 8, line 20, of his May 1, 2017 testimony, "The statute and associated rule provide the requisite regulatory certainty necessary for FPL to undertake the complex and challenging task of adding new nuclear capacity to its system. The process allows FPL to take the long lead steps of licensing and pre-construction and pays off interest costs during construction, reducing costs to FPL's customers. Additionally, it enables FPL to go to the financial markets and obtain competitive financing rates for the large amount of capital required to fund the construction of the project." I agree with this testimony and agree that absent the statute constructing a nuclear plant would not be financially feasible. A key

economic element underlying the statute is that the Commission reviews and approves plans based on feasibility studies. There is a cost recovery assurance but also a check. FP&L is requesting the Commission to approve as reasonable an activity (continuing with obtaining and marinating a COL) without such a study. The fact that FP&L is not requesting approval for the specific expenditures is not meaningful. Approval of the activity of obtaining and marinating the COL is the action that requires a feasibility study. Approval of the specific expenditures does not require a feasibility study. FP&L's request that the Commission approve as reasonable continuing to expend funds to obtain and maintain a COL for Turkey Point without any quantified evidence as to feasibility endangers the credibility of the Commission and in my opinion could place the statute at risk.

Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes.

EUGENE T. MEEHAN
INDEPENDENT CONSULTANT

Mr. Meehan is an Independent Consultant specializing in regulatory economics and electricity markets, power procurement, electric planning and asset and corporate transaction involving electric marketing, production, transmission and distribution. He has over thirty-five years of experience consulting with electric and gas utilities, regulators and governments and has testified as an expert witness before numerous state and federal regulatory agencies, as well as appeared in federal court and arbitration proceedings.

Mr. Meehan's practice concentrates on serving energy industry clients, with a focus on helping clients manage the transition from regulatory to more competitive environments. He has performed consulting assignments for over fifty large electric, gas, and combination utilities in the areas of retail access, regulatory strategy, strategic planning, financial and economic analysis, merger and acquisition advisory services, power contract analysis, market power and market definition, stranded cost analysis, power pooling, power markets and risk management, ISO and PX development, and costing and pricing. In addition, he has advised numerous utilities on power procurement issues and administered power procurements on behalf of utilities and regulators.

Mr. Meehan has experience leading advisory work on several major restructuring and unbundling assignments. These assignments were multi-year projects that involved integration of regulatory and business strategy, as well as development of regulatory filings associated with the recovery of stranded cost and rate unbundling.

Education

Boston College, BA, Economics, *cum laude*
New York University (NYU), Graduate School of Business, completed core courses for the doctoral program.

Professional Experience

2015 -	**Independent Consultant**
	NERA Economic Consulting
1999-2014	Senior Vice President
1996-1999	Vice President
1973-1980	Senior Economic Analyst; Research Assistant
	Deloitte & Touche Consulting Group
1994-1996	Principal
	Energy Management Associates, Inc.
1980-1994	Vice President

Areas of Expertise

Restructuring/Stranded Cost Recovery

Mr. Meehan has directed several multi-year projects associated with restructuring and stranded cost recovery. These projects involved facilitating the development of an integrated regulatory and business strategy and formulating regulatory filings to accomplish strategy. As part of these assignments, Mr. Meehan facilitated sessions with senior management to set and track filing strategy. Clients include Public Service Gas & Electric and Baltimore Gas and Electric.

Unbundling/Generation Pricing

Mr. Meehan has formulated unbundling strategies, with a specialization in generation pricing. He has advised several utilities in standard offer pricing and has testified on shopping credits on behalf of First Energy and Baltimore Gas and Electric.

Power Procurement

Mr. Meehan has been involved in power procurement activities for a variety of utilities and regulatory agencies. He has advised utilities in developing and implementing evaluation processes for new generation, with the objective of achieving the best portfolio evaluation. He has helped regulators in Ireland and Canada design and implement portfolio evaluation processes. He has testified before FERC and state regulatory agencies on competitive power procurement. In addition, Mr. Meehan helped to design and implement the New Jersey BGS auction process.

Power Contracts

Mr. Meehan has extensive experience with power contracts and power contract issues. He has reviewed and testified on the three principal types of power contracts: integrated utility to integrated utility contracts, IPP to utility contract, and integrated or wholesale utility to distribution utility contracts. He has testified in power contracts disputes on behalf of Carolina Power and Light, Duke Power Company, Southern Company, Orange and Rockland Utilities, and Tucson Electric Power. He has also advised Oglethorpe Power Corporation in the reform of its wholesale contracts with its distributor cooperative members.

Retail and Wholesale Settlements

In addition to his expertise on power pooling issues, Mr. Meehan has significant experience with assignments related to the settlement process. He has focused on the issues of credit management as new entrants appear in retail and wholesale markets and has designed efficient specifications for retail settlement systems, including the use of load profiling, and examined the risk and cost allocation issues of alternative settlement systems.

Risk Management

Mr. Meehan has advised several large utilities on price risk management. These assignments have included evaluation of price management service offers solicited from power marketers in association with management of assets and entitlements, as well as provision of price managed service for various terms.

Marginal Costs

Mr. Meehan has provided comprehensive marginal cost analyses for over 25 North American Utilities. These assignments required detailed knowledge of utility operations and planning.

Power Supply and Transmission Planning

Mr. Meehan has advised electric utilities on economic evaluations of generation and transmission expansion. He has testified on the economics of particular investments, the prudence of planning processes, and the prudence of particular investment decisions. He has reviewed the economic and rate implications of several large nuclear plants and has testified before state and federal regulators with respect to nuclear economics and the prudence of nuclear investments.

Generation Strategy

Mr. Meehan has led NERA efforts on a client task force charged with developing an integrated generation asset/power marketing strategy.

Power Pooling

Mr. Meehan has in-depth working knowledge of the operating, accounting, and settlement processes of all United States power pools and representative international power pools. He has provided consulting services for New York Power Pool members on a continuous basis since 1980, advising the Pool and its members on production cost modeling, transmission expansion, competitive bidding and reliability, and marginal generating capacity cost quantification. In NEPOOL, he has quantified the benefits of continued utility membership in the Pool and the impact of the Pool settlement process on marginal cost. He has worked with a major PJM utility to explore the impact of PJM restructuring proposals upon generating asset valuation and examine the implications of alternative restructuring proposals. He has consulted for Central and Southwest Corporation, Entergy, and Southern Company on issues that involved the internal pooling arrangements of the utility operating companies of those holding companies, as well as for various utilities on the impact of pooling arrangements on strategic alternatives.

Representative Assignments

Worked with Public Service Electric & Gas Company (PSE&G) to direct a three year NERA advisory effort on restructuring. Facilitated a two-day senior management meeting to set regulatory strategy in 1997. Throughout 1997 and 1998, worked over half time at PSE&G to help implement that strategy and advised on testimony preparation, cross-examination, and briefing. Also advised PSE&G on business issues related to securitization, energy settlement and credit requirements for third party suppliers. During 1999, advised PSE&G during settlement negotiations and litigation of the settlement. PSE&G achieved a restructuring outcome that involved continued ownership of generation by an affiliate and the securitization of $2.5 billion in stranded costs.

Testified for the City of Miami on the issue of economic viability in connection with the City's intervention in Florida Power and Light's 2015 annual assessment of the Turkey Point 6 and 7 nuclear development project.

Worked on separate assignments for a large utility in the Northeast and a large utility in the Southeast, advising on the evaluation of risk management offers from power marketers. The

assignments included reviewing proposals, attending interviews with marketers and providing advice on these, and the developing analytical software to evaluate offers.

Worked with government of Ontario beginning in 2004 to help design the RFP and economic evaluation process for the solicitation of 2500 Mw of new generating capacity. Supervising NERA's portfolio-based economic evaluation on behalf of the Ontario Ministry of Energy.

Testified on behalf of Pacific Gas & Electric Company before the FERC in a case benchmarking the PSA between the distribution utility and a soon-to-be-created generating company. This effort involved developing detailed expertise in applying the Edgar standard and a detailed review of DWR procurement during the western power crisis. In addition, this effort involved the review of more than 100 power contracts in the WECC.

Directed NERA's efforts, on behalf of the electricity regulator in Ireland, to design an RFP and implementation process for the purchase of 500 Mw of new generating capacity in 2003. NERA advised on the RFP, the portfolio evaluation method, and the power contract and also conducted the economic evaluation.

Reviewed the economic evaluation conducted by Southern Company Service for affiliated operating companies in connection with an RFP for over 2000 Mw of new generating capacity. Submitted testimony before FERC on behalf of Southern Company Service.

Worked with Baltimore Gas and Electric (BG&E) to conduct a one and one-half year consulting assignment that involved providing restructuring advice. The project began in March/April 1998 with senior management discussions and workshops on plan development and filing strategy. Advised BG&E in the development of testimony, rebuttal testimony, and public information dissemination. Worked to review and coordinate testimony from all witnesses and offered testimony on shopping credits and in defense of the case settlement. BG&E achieved a restructuring outcome enabling it to retain generation ownership. As part of this assignment, advised BG&E on generation valuation and unregulated generation business strategy.

Directed the efforts of a large Southeastern utility to develop a short-term power contract portfolio and to evaluate the relative value of power options, forwards, and unit contracts to determine the optimal mix of instruments to manage price risk.

Testified for XCEL Energy on the use of competitive bids for new generation needs. Examined whether XCEL was prudent not to explore a self-build plan and the reasonableness of relying on ten-year or shorter contracts as opposed to life-of-facility contracts, in order to meet needs and facilitate a possible future transition to competition. This project addressed the comparability of fixed bids to rate base plant additions.

Advised and testified on behalf of First Energy in the Ohio restructuring proceeding on the issues of generation unbundling and stranded cost. Defended the First Energy shopping credit proposal.

Advised Consolidated Edison and Northeast Utilities on merger issues and testified in Connecticut and New Hampshire merger proceedings. Testimony focused on retail competition in gas and electric commodity markets.

Directed NERA's effort to train selected representatives of a major European power company in American power marketing and risk management practices. The project involved numerous meetings and interviews with power marketing firms.

Led NERA's effort to advise the New England ISO on the development of an RTO filing. Examined performance-based ratemaking for transmission and market operator functions.

Examined ERCOT power market conditions during the period of time from 1997 to 1999 and testified on behalf of Texas New Mexico Power Company for the prudence of its power purchase activity.

Advised a Midwestern utility on restructuring of a wholesale contract with an affiliate. Involved forecasting of the unbundled wholesale cost-of-service and market prices, as well as development of a regulatory strategy for gaining approval of contract restructuring and the transfer of generation from regulated to EWG states.

Performed market price forecasts for numerous utility clients. These forecasts have employed both traditional modeling and newly developed statistical approaches.

Examined the credit issues associated with the entry of new entities into retail and wholesale settlement market. These assignments involved a review of current Pool credit procedures, examination of commodity and security trading credit requirements, coordination with financial institutions, and recommendations concerning credit exposure monitoring, credit evaluation processes, and credit requirements.

Oversight of EMA's consulting and software team in designing and implementing the LOLP capacity payment, a portion of the UK wholesale settlement system.

Advised Oglethorpe Power Corporation in the reform of its contracts with its distribution cooperative members and the evolution of full requirement power wholesale power contracts into contracts that preserve Oglethorpe's financial integrity and are suitable for a competitive environment.

Developed long run marginal and avoided costs of natural gas service, as well as avoided cost methods and procedures. These costs have been used primarily for the analysis of gas DSM opportunities. Clients include Consolidated Edison Company, Southern California Edison Company, Niagara Mohawk Power Corporation, and Elizabethtown Gas Company.

Review of power contracts and testimony in numerous power contract disputes

Development of long run avoided costs of electricity service and avoided cost methods and procedures. These costs have been used to assess DSM and cogeneration, as well as to develop integrated resource plans. Clients include Public Service Company of Oklahoma, Central Maine Power Company, Duquesne Light Company, and the New York investor-owned utilities.

Advised Central Maine Power Company (CMP) on the development of a competitive bidding framework. This framework was implemented in 1984 and was the first of its kind in the nation. CMP adopted the framework outlined in EMA's report and won prompt regulatory approval.

Advised a utility in the development of an incentive ratemaking plan for a new nuclear facility. This assignment involved strategic analysis of alternate proposals and quantification of the financial impact of various ratemaking alternatives. Presented strategic and financial results in order to convince senior management to initiate negotiations for the incentive plan.

Advised and testified on behalf of the New York Power Pool utilities on the methodology for measuring pool marginal capacity costs. This work included development of the methodology and implementation of the system for quantifying LOLP-based marginal capacity costs.

Provided testimony on behalf of the investor-owned electric utilities in New York State, concerning the proper methodology to use when analyzing the cost-effectiveness of conservation programs. This methodology was adopted by the Commission and used as the basis for DSM evaluation in New York from 1982 through 1988.

Developed the functional design of a retail access settlement system and business processes for a major PJM combination utility. This design is being used to construct a software system and develop business procedures that will be used for retail settlements beginning January 1999.

Reviewed the power pool operating and interchange accounting procedure of the New York Power Pool, the Pennsylvania, New Jersey, Maryland Interconnection, Allegheny Power System, Southern Company, and the New England Power Pool as part of various consulting assignments and in connection with the development of production simulation software.

Summarized and analyzed the operational NEPOOL to examine the feasibility of incorporating NEPOOL interchange impacts with Central Maine and accounting procedure of the New England Power Pool Power Company's buy-back tariffs.

Developed and presented a two-day seminar delivered to electric industry participants in the UK (prior to privatization), outlining the structure and operation of power pools and bulk power market transactions in North America.

Benchmark analysis and FERC testimony of PGE's proposed twelve-year contract between PG&E and Electric Gen LLC (contract value in excess of $15 billion).

Responsible for NERA's overall efforts in advising New Jersey's Electric Distribution Companies on the structuring and conduct of the Basic Generation Service auctions (the 2002 auction involved $3.5 billion, and the 2003 and 2004 auctions involved over $4.0 billion).

Publications, Speeches, Presentations, and Reports

Capacity Adequacy in New Zealand's Electricity Market, published in *Asian Power*, September 18, 2003

Central Resource Adequacy Markets For PJM, NY-ISO AND NE-ISO, a report written February 2004

Ex Ante or *Ex Post*? Risk, Hedging and Prudence in the Restructured Power Business, The Electricity Journal, April 2006

Distributed Resources: Incentives, a white paper prepared for Edison Electric Institute, May 2006

Restructuring Expectations and Outcomes, a presentation presented at the Saul Ewing Annual Utility Conference: The Post Rate Cap and 2007 State Regulatory Environment, Philadelphia, PA, May 21, 2007

Making a Business of Energy Efficiency: Sustainable Business Models for Utilities, prepared for Edison Electric Institute, August 2007

Perspectives on Ownership Issues for Traditional Generating & Alternative Resources: Should we allow utilities back in the market or limit ownership to merchants? A presentation presented at the Energy in the Northeast Conference sponsored by Law Seminars Intl., October 18, 2007

Restructuring at a Crossroads, presented at Empowering Consumers Through Competitive Markets: The Choice Is Yours, Sponsored by COMPETE and the Electric Power Supply Association, Washington, DC, November 5, 2007

*Competitive Electricity Markets: The Benefits for Customers and the Environmen*t, a white paper prepared for COMPETE Collation, February 2008

The Continuing Rationale for Full and Timely Recovery of Fuel Price Levels in Fuel Adjustment Clauses, The Electricity Journal, July 2008

Impact of EU Electricity Competition Directives on Nuclear Financing presented to: SMI – Financing Nuclear Power Conference, London, UK, May 20, 2009

Using History As A Guide, a presentation presented at the Electric Power Research Institute (EPRI) Conference: Electricity Pricing Structures for the 21st Century, July 14 – 15, 2011, Nashville, TN

Testimony

Forums

Arkansas Public Service Commission

Federal Energy Regulatory Commission

Florida Public Service Commission

Maine Public Utilities Commission

Minnesota Public Service Commission

Nevada Public Service Commission

New York Public Service Commission

Nuclear Regulatory Commission – Atomic Safety and Licensing Board

Oklahoma Public Service Commission

Public Service Commission of Indiana

Public Utilities Commission of Ohio

Public Utilities Commission of Nevada

Public Utilities Commission of Texas

Public Utilities Commission of New Hampshire

United States District Court

United States Senate Committee on Energy and Natural Resources

Various arbitration proceedings

Clients

American Electric Power Company

Arkansas Power & Light Company

Baltimore Gas & Electric

Carolina Power & Light Company

Central Maine Power

City of Miami

Consolidated Edison Company of New York, Inc.

Dayton Power and Light Company

Florida Coordinating Group

Houston Lighting & Power Company

Minnesota Power and Light Company

Nevada Power Company

Niagara Mohawk Power Corporation

Northern Indiana Public Service Company

Oglethorpe Power Corporation

Pacific Gas and Electric Company

Power Authority of the State of New York

Public Service and Electric Company

Public Service Company of Oklahoma

Sierra Pacific Power Company

Southern Company Services, Inc.

Tucson Electric Power Company

Texas-New Mexico Power Company

Recent Expert Testimony and Expert Reports

Supplemental Testimony on behalf of Texas-New Mexico Power Company, Docket No. 15660, September 5, 1996.

Direct Testimony on behalf of Long Island Lighting Company before the Federal Energy Regulatory Commission, September 29, 1997.

Rebuttal Testimony on behalf of Texas-New Mexico Power Company, SOAH Docket No. 473-97-1561, PUC Docket No. 17751, March 2, 1998.

Prepared Testimony and deposition testimony on behalf of Central Maine Power Company, United Stated District Court Southern District of New York, 98-civ-8162 (JSM), March 5, 1999.

Prepared Direct Testimony Before the Public Service Commission of Maryland on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, June 1999.

Rebuttal Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, March 22, 1999.

NORCON Power Partners LP v. Niagara Mohawk Energy Marketing, before the United States District Court, Southern District of New York, June 1999.

Prepared Supplemental Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, July 23, 1999.

Prepared Supplemental Reply Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, August 3, 1999.

Direct Testimony on behalf of Niagara Mohawk, Before the New York State Public Service Commission, PSC Case No. 99-E-0681, September 3, 1999.

Rebuttal Testimony on behalf of Niagara Mohawk, PSC Case No. 99-E-0681 Before the New York State Public Service Commission, November 10, 1999.

Arbitration deposition on behalf of Oglethorpe Power Corporation, last quarter of 1999.

Direct Testimony Before the Public Utilities Commission of Ohio on behalf of FirstEnergy Corporation, Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company, Case No. 99-1212-EL-ETP re: Shopping Credits.

Direct Testimony on behalf of Niagara Mohawk, Before the New York State Public Service Commission, PSC Case No. 99-E-0990, February 25, 2000.

Testimony on behalf of Consolidated Edison Company of New York, Inc., State of Connecticut, Department of Public Utility Control, Docket No.: 00-01-11, April 28, 2000 and June 30, 2000.

Testimony on behalf of Texas-New Mexico Power Company, Fuel Reconciliation Proceeding before the Texas PUC, June 30, 2000.

Testimony on behalf of Consolidated Edison Company of New York, Inc., Before the New Hampshire Public Service Commission, Docket No.: DE 00-009, June 30, 2000.

Rebuttal Testimony Before the Public Utilities Commission of the State of Colorado, Docket No. 99A-549E, November 22, 2000.

Testimony Before the Public Utilities Commission of the State of Colorado, Docket No. 99A-549E, January 19, 2001.

DETM Management, Inc. Duke Energy Services Canada Ltd., And DTMSI Management Ltd., Claimants vs. Mobil Natural Gas Inc., And Mobil Canada Products, Ltd., Respondents. American Arbitration Association Cause No. 50 T 198 00485 00, August 27, 2001.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv) Docket No.: EX01050303, October 4, 2001.

Direct Testimony Before the Federal Energy Regulatory Commission on behalf of Pacific Gas and Electric Company, Docket No.: ER02-456-000, November 30, 2001.

Fourth Branch Associates/Mechanicville vs. Niagara Mohawk Power Corporation, January 2002 (Expert Report).

Arbitration Deposition on behalf of Oglethorpe Power Corporation, March 2002.

Direct Testimony and Deposition Testimony Before the Federal Energy Regulatory Commission on behalf of Electric Generation LLC in Response to June 12 Commission Order, Docket No.: ER02-456-000, July 16, 2002.

Rebuttal Testimony Before the Federal Energy Regulatory Commission on behalf of Electric Generation LLC in Response to June 12 Commission Order, Docket No.: ER02-456-000, August 13, 2002.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company, in the matter of the Application of Nevada Power Company to Reduce Fuel and Purchased Power Rates, PUCN Docket No. 02-11021, November 8, 2002 and subsequent Deposition Testimony.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, Docket No. 03-1014, January 10, 2003.

Direct Testimony Before the Public Utility Commission Of Texas on behalf of Texas-New Mexico Power Company, Application Of Texas-New Mexico Power Company For Reconciliation Of Fuel Costs, April 1, 2003.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company, PUCN Docket No. 02-11021, April 1, 2003.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company, Docket No. 03-1014, May 5, 2003.

Testimony Before the Public Service Commission of New York on behalf of Consolidated Edison Company of New York, Inc., Case No.: 00-E-0612, September 19, 2003.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv), September 2003.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Deferred Energy Case, November 12, 2003.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, January 12, 2004.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, May 28, 2004.

Direct Testimony on behalf of Texas-New Mexico Power Company, First Choice Power Inc. and Texas Generating Company LP to Finalize Stranded Cost under PURA § 39.262, January 22, 2004.

Rebuttal Testimony on behalf of Texas-New Mexico Power Company, First Choice Power Inc. and Texas Generating Company LP to Finalize Stranded Cost under PURA § 39.262, April, 2004.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv), September 2004.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Deferred Energy Case, November 9, 2004.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, January 7, 2005.

Expert Report on behalf of Oglethorpe Power Corporation, March 23, 2005.

Arbitration deposition on behalf of Oglethorpe Power Corporation, April 1, 2005.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's December 2005 Deferred Energy Case.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2006 Deferred Energy Case, January 13, 2006.

Remand Rebuttal for Public Service Company of Oklahoma before the Corporation Commission of the State of Oklahoma, Cause No. PUD 200200038, **Confidential**, March 17, 2006

Answer Testimony on behalf of the Colorado Independent energy Association, AES Corporation and LS Power Associates, LP, Docket No. 05A-543E, April 18, 2006.

Cross-Answer Testimony on behalf of the Colorado Independent energy Association, AES Corporation and LS Power Associates, LP, Docket No. 05A-543E, May 22, 2006.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2006 Deferred Energy Case, Docket No. 06-01016, June 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, December 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Application for Recovery of Costs of Achieving Final Resolution of Claims Associated with Contracts Executed During the Western Energy Crisis, December 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Application for Recovery of Costs of Achieving Final Resolution of Claims Associated with Contracts Executed During the Western Energy Crisis, December 2006.

Direct Testimony Before the Public Utilities Commission of the State of Hawaii, on behalf of Hawaiian Electric Company, Inc., Docket No. 2006-0386, December 22, 2006.

Direct Testimony Before the Public Utilities Commission of the State of Hawaii, on behalf of Hawaiian Electric Company, Inc., Docket No. 05-0315, December 29, 2006.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2007 Deferred Energy Case, January 2007.

Declaration Before the State of New York Public Service Commission, on behalf of Consolidated Edison Company of New York, Inc.'s Long Island City Electric Network,

Case 06-E-0894 – Proceeding on Motion of the Commission to Investigate the Electric Power Outage and Case 06-E-1158 – In the Matter of Staff's Investigation of Consolidated Edison Company of New York, Inc.'s Performance During and Following the July and September Electric Utility Outages. July 24, 2007.

Direct Testimony Before The Public Utilities Commission of Colorado, In The Matter of the Application of Public Service Company of Colorado for Approval of its 2007 Colorado Resource Plan, April 2008.

Answer Testimony Before the Public Utilities Commission of the State of Colorado on behalf of Trans-Elect Development Company, LLC, and The Wyoming Infrastructure Authority, Docket No. 07A-447E, April 28, 2008.

Rebuttal Testimony Before the Public Utilities Commission of Nevada, Application of Sierra Pacific Power Company d/b/a/ NV Energy Seeking Acceptance of its Eight Amendment to its 2008-2007 Integrated Resource Plan, Docket No. 10-02023.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's 2008 Deferred Energy Case, February 2009.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2008 Deferred Energy Case, February 2009.

Direct Testimony Before the Public Utilities Commission of Texas, on behalf of Entergy Texas, Inc. Docket No. 33687, April 29, 2009.

Direct Testimony Before The Public Utilities Commission Of Nevada On Behalf of Nevada Power Company D/B/A Nevada Energy, 2010 – 2029 Integrated Resource Plan, June 26, 2009.

Before the Public Service Commission of New York, Case 09-E-0428 Consolidated Edison Company of New York, Inc. Rate Case, Rebuttal Testimony, September 2009.

Direct Testimony Before the Public Utilities Commission of Nevada on Behalf of Sierra Pacific Power Company's 2009 Deferred Energy Case, February 2010.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2009 Deferred Energy Case, February 2010.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2010 – 2029 Integrated Resource Plan, Docket No. 09-07003, July 2010.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Eighth Amendment to its 2008 – 2027 Integrated Resource Plan, Docket No. 10-03023, July 2010.

Rebuttal Testimony Before the Public Utilities Commission of Nevada, Application of Nevada power Company d/b/a NV Energy Seeking Acceptance of its Triennial Integrated Resource Plan

covering the period 2010-2029, including authority to proceed with the permitting and construction of the ON Line transmission project, Docket No. 10-02009.

Rebuttal Testimony Before the Public Utilities Commission of Nevada, Petition of Nevada Power Company d/b/a NV Energy requesting a determination under NRS 704.7821 that the terms and conditions of five renewable power purchase agreements are just and reasonable and allowing limited deviation from the requirements of NAC 704.8885, Docket No. 10-03022.

Rebuttal Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company d/b/a NV Energy, 2010 Deferred Energy Case, Docket No. 10-03003, filed August 3, 2010

Rebuttal Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company d/b/a NV Energy Electric Department, 2010 Deferred Energy Case, Docket No. 10-03004, filed August 3, 2010

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company, d/b/a NV Energy, Docket No. 11-03 __ 2011 Electric Deferred Energy Proceeding, February 2011.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company, d/b/a NV Energy, Docket No. 11-03 __ 2011 Electric Deferred Energy Proceeding, February 2011.

Testimony Before the Atomic Safety and Licensing Board, Nuclear Regulatory Commission, In the Matter of Entergy Nuclear Operations, Inc., Dockets Nos. 50-247-LR and 50-286-LR, March 30, 2012.

Rebuttal Testimony Before the Public Utilities Commission of Ohio, In Support of AEP Ohio's Modified Electric Security Plan, Case No. 10-2929, May 11, 2012.

Prefiled Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company, d/b/a NV Energy, Docket No. 12-03 __ 2012 Electric Deferred Energy Proceeding, February 2012.

Prefiled Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company, d/b/a NV Energy, Docket No. 12-03 __ 2012 Electric Deferred Energy Proceeding, February 2012.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company, d/b/a NV Energy, Docket No. 13-03 __ 2013 Electric Deferred Energy Proceeding, February 2013.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company, d/b/a NV Energy, Docket No. 13-03 __ 2013 Electric Deferred Energy Proceeding, February 2013.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company, d/b/a NV Energy, Docket No. 14-02 __ 2014 Electric Deferred Energy Proceeding, February 2014.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company, d/b/a NV Energy, Docket No. 14-02 __ 2014 Electric Deferred Energy Proceeding, February 2014.

January 2015

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 170009-EI

Filed: May 22, 2017

IN RE: NUCLEAR COST RECOVERY CLAUSE

_____/

DEPOSITION

OF

STEVEN D. SCROGGS

Held At: Florida Power & Light Company
700 Universe Boulevard, Room A1000
Juno Beach, Florida 33408

Day/Date: Thursday, June 1, 2017

Time: 10:30 a.m. to 4:00 p.m.

Susan Suddarth, Court Reporter, Apex Reporting Group

APPEARANCES

PATRICIA A. CHRISTENSEN, ESQUIRE (present via phone)
CHARLES R. REHWINKEL, ESQUIRE (present via phone)
Office of Public Counsel
The Florida Legislature
111 West Madison Street, Room 812
Tallahassee, Florida 32399

CHRISTOPHER GREEN, SENIOR ASSISTANT CITY ATTORNEY
XAVIER E. ALBAN, ASSISTANT CITY ATTORNEY
City of Miami
444 Southwest 2nd Avenue, Suite 945
Miami, Florida 33130

KYESHA MAPP, ESQUIRE (present via phone)
Office of General Counsel
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399

GEORGE CAVROS, ESQUIRE (present via phone)
Southern Alliance for Clean Energy
120 East Oakland Park Boulevard, Suite 105
Fort Lauderdale, Florida 33334

MATTHEW BERNIER, ESQUIRE (present via phone)
Duke Energy
106 East College Avenue, Suite 800
Tallahassee, Florida 32301

BRUCE RICHEY, REPORTER (present via phone first part only)
Left particiating in call after Prehearing Officer's ruling.
Politico Florida News Outlet

JESSICA A. CANO, ESQUIRE
TRAVIS CONTRATTO, SENIOR REGULATORY ANALYST
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

ALSO PRESENT: Mary Anne Helton, Esquire, FPSC
Jennifer Crawford, Esquire, FPSC

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Deposition of STEVEN D. SCROGGS, a witness of lawful age, taken by the OPC/PSC, City of Miami, SACE for the purpose of discovery and for use as evidence in the above-entitled cause, IN RE: NUCLEAR COST RECOVERY CLAUSE pending in the State of Florida, Public Service Commission pursuant to notice heretofore filed, before SUSAN SUDDARTH, a Court Reporter and Notary Public in and for the State of Florida at Large, on the 1st day of June, 2017 held at Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408 commencing at 10:30 a.m.

THEREUPON,

STEVEN D. SCROGGS,

a witness named in the notice heretofore filed, being of lawful age, and being first duly sworn in the above cause, testified on his oath as follows:

DIRECT EXAMINATION

BY MS. CHRISTENSEN:

Q. Mr. Scroggs, have you had your deposition taken before?

A. Yes, ma'am.

Q. As a reminder, I'm just going to let you know that I will be of course asking the questions. If at any point you don't understand the question or what I'm asking and if

you need clarification, please let me know. I will attempt to restate my question. If at any point during my questioning, you need a break just let me know and we will recess and take a short break.

With that said, can I please ask you to state your name and your business address for the record.

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

Q. Mr. Scroggs, what is your current position with FPL?

A. I'm a Senior Director of Project Development.

Q. How long have you been in this position?

A. Since 2006 approximately eleven years.

Q. Can you give us a brief description of what your current duties are?

A. I manage the execution of large generation project activities for Florida Power & Light in the State of Florida.

Q. Does that include non-nuclear as well as nuclear?

A. It can and it has.

Q. What was your position before the current one you hold?

A. I was Director of Resource Assessment and Planning for Florida Power & Light?

Q. How long did you have that position?

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A. Three years.
Q. Can you briefly describe what your duties were in that position?
A. I managed the analytical team that resulted in the development of long term generation planning for Florida Power & Light in the State of Florida including the annual production of the ten year site plan.
Q. How long have you been with Florida Power & Light?
A. Fourteen years.
Q. Prior to working with FPL, where did you work?
A. I worked for Calpine Corporation, C-A-L-P-I-N-E. It is an independent power generator stationed out of Fort Collins, Colorado.
Q. Okay and what was your position with them?
A. Director of Plan Optimization. I directed a team of engineers that conducted acceptance testing and performance testing of power generation assets.
Q. How long did you have that position?
A. Approximately three years.
Q. All right. I'm going to be asking you, just one more follow-up question regarding your history. How long have you been the Senior Project Development Director for the Turkey Point Units 6 and 7 projects?
A. Since its inception in the summer of 2006.
Q. Now I'm going to be referring to your testimony,

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mainly the testimony you filed on May 1st, 2017. Let me know when you have that in front of you?
A. I do.
Q. I want to refer you to page 2 of your pre-filed testimony. Let me know when you are there?
A. I'm there.
Q. On page two you state you're in the final stages of the Combined Operating License Application, development of the Western Consensus Corridor, completion of the United States Army Corps of Engineers 404(b) wetland permits and Section 408 reviews; is that right?
A. That is correct.
Q. Then I think at the back of your testimony you have included exhibits, right?
A. Yes.
Q. I want to specifically look at and focus on the exhibit that you created SDS-10, I think it is a one page exhibit.
A. Ten?
Q. Yes.
A. Got it.
Q. Is this basically a chart to kind of give a visual description of where you are in the licensing process, is that an accurate description of this?
A. Yes.

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Q. I want to discuss a little bit some of the various stages that you have listed on this exhibit. The first one you have listed is site certification, do you see that?
A. Yes.
Q. Under site certification you have final unappealable certification; is that correct?
A. Yes.
Q. I see a little kind of hashtag green box. Can you describe what is indicated by the hashtag green box?
A. The final unappealable certification for the entire project is not complete because of a Third DCA opinion that identified three areas that needed to be remanded to the Siting Board and addressed before the entire certification could be complete.
Q. So in your diagram that you have included with your May 1st, 2017 testimony indicates that you have a green hashtag box under the second quarter of 2016, what was that intended to indicate?
A. That would be the target for resolution of that.
Q. I think there is a footnote up there and that indicated it would be determined by the pending resolution of the April 20th, 2016 DCA opinion; is that correct?
A. That's correct.
Q. And I think you just mentioned it, you said that there was a decision made. When was that decision issued?

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A. The decision was issued in April 2016. It had gone through several different appeals processes and it was finally, became final in December of 2016 when, yeah, December of 2016 when the State Supreme Court chose not to review it.
Q. Okay. Where are you currently in the process with the appeal?
A. There is no longer an appeal, it is a final order. It's been remanded.
Q. That order was remanded back to the certification or the Site Certification Board; is that right?
A. That's correct.
Q. What were the three issues that they raised that FPL needed to address?
A. If you allow me I will look at I think it is spelled out in my testimony.
Q. Why don't we try this. Can you turn to page 15 of your testimony because that may be where you spell it out.
A. Actually, I think it begins on page 14, beginning at line 19.
Q. Yes. Can you please identify the areas that the DCA found deficient in the Siting Board certification?
A. The Third DCA found the Site Certification deficient in three areas: The application of local land development regulations; the Siting Board's conclusion that

it could not require underground installation of transmission lines; and the Siting Board's interpretation of the nature and applicability of a County regulation.

Q. Okay. Now let me ask you again, where are you in the Site Certification process?

A. If you look at page 15, line 4, I describe the possible paths associated with resolving these three items, basically involving negotiated settlements or referral back to the Siting Board.

MS. CANO: Patti.

MS. CHRISTENSEN: Yes.

MS. CANO: Sorry, this is Jessica, I hate to interrupt here. This is going to be a little logistically difficult, but it took me a few moments to confer with some colleagues.

There is no entitlement for the press or any other member of the public to be present at this deposition. So I'm going to ask that you send out a new dial in number to all the parties, so that the parties can dial back in and continue.

MS. CHRISTENSEN: We have a conundrum because, of course, we are subject to public records requests.

MS. CANO: Understood and the process could be followed for them to obtain a copy of the non-confidential portions of the transcript. But that

doesn't mean there is a public entitlement to be present at the deposition.

MS. CHRISTENSEN: Hold on one moment and we will see what we can do from our end.

MS. CANO: Okay, thank you.

MR. REHWINKEL: Patti, are you still on?

MS. CHRISTENSEN: Yeah, I was going to come talk to you for a moment. Can we take a five minute break?

MR. REHWINKEL: Well, before we do that. Jessica, is it the idea that the deposition will have confidential information discussed?

MS. CANO: That is certainly possible, but in any event this isn't a public hearing. This is for the purposes of parties to the docket to conduct discovery.

MR. REHWINKEL: I'm trying to think if we had this deposition at the Public Service Commission in the Internal Affairs room, which we have had depositions before, what would be the, would there be some sort of gatekeeping function there?

MS. CANO: As far as I know, it's parties dial in, that's the process.

MR. REHWINKEL: But I mean if it wasn't a telephonic deposition. If it was done in the Internal Affairs room, would there be -- because I recall in the Cedar Bay case we did depositions in the Internal

Affairs room. I just would wonder there could be any gatekeeping function there. I'm just trying to think this through.

I will tell you the last time this issue arose, I think was in 1989 when Gulf Power (phonetic) case which was had a lot of very newsworthy items and a news journal reporter came to the deposition. There were some public records open meetings kind of issues that were involved there. I don't recall how it turned out. So I'm just trying to think this through before we kind of take action that would create more of a problem for us.

MS. CANO: Shall we take a break?

MS. CHRISTENSEN: Now for purposes of my deposition questions, I don't think I'm going to elicit any confidential information because it is based on what was publicly filed. But I could not obviously answer as to anybody else's questioning.

MS. CANO: Understood. Regardless, we'd like to follow the process here.

MR. REHWINKEL: Are you saying that you will cease the deposition if it is not limited to parties?

MS. CANO: We may. That would take a slightly longer break to confirm, but it's possible.

MR. REHWINKEL: I think there is a fairly long

tradition where we have noticed depositions that are telephonic and people who were not parties routinely listened in, especially from other utilities.

There is no actual requirement for people to actually announce themselves on the call. I'm just talking, thinking out loud because what we don't want to do is to have a side show associated with this.

MS. CANO: Agreed.

MR. REHWINKEL: I tell you what, I think Patti and I need to talk to J.R.

MS. CHRISTENSEN: Let us take at least a five maybe a ten minute break, Jessica, here. Why don't you all confer.

MR. REHWINKEL: We are going to leave the line open but put it on mute.

MS. CHRISTENSEN: I'm not going to disconnect it, but why don't you also confer what FPL's position would be if not limited to parties only, so that we can have that information when we get back on the call, okay.

MS. CANO: Okay, let's take a ten minute break.

MS. CHRISTENSEN: Thank you.

(A brief recess and discussions off the record.)

MR. REHWINKEL: Back on the record. This is Charles Rehwinkel, Deputy Public Counsel. Our fundamental position is that we don't have a basis for

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excluding anyone from this deposition. In the full disclosure we received a public records request from a member of the press after seeing the notice that was filed at the Commission. We received a request for the dial in number, which we were obligated to give and we gave.

It is not our intention to elicit confidential information from the deposition. We don't think we have a basis to exclude anyone based on any rules or cases that we are aware of or under Commission practice.

We would suggest that if confidential information is to be elicited, that a solution could be found in reserving questions that would elicit confidential information to a second phase of the deposition that we would be happy to provide a separate number for confidential information. But it is not our intention to delve into confidential informant. We want publicly available information to be contained in the answers that we elicit.

MS. CANO: Okay and this is Jessica Cano. While in the past non-parties may have dialed in and that may have been all right with the parties involved, that doesn't necessarily mean there is a right for non-parties to participate.

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In the brief moment we have had, we have located some case law indicating that there is no right of the press or public to attend pre-trial depositions.

So we would prefer to stick with the process here, which is that depositions are for parties. And, of course, public records requests for transcripts or other documents can be issued and responded to in the normal course of business. We are prepared to stop the deposition and reschedule it if that is what needs to occur.

MR. GREEN: This is Chris Green from the City of Miami. I was briefly speaking to Kyesha earlier. My recommendation would be to try to get a Hearing Officer to bring the issue up now, since at least the City's attorneys have traveled here from Miami to attend the deposition. To cancel and reschedule it at this point would just create a delay and a hardship on us.

We don't believe that any of our questions would call for confidential answers. So that is our position.

MR. CAVROS: This is George Cavros with Southern Alliance for Clean Energy. I don't plan on asking any questions that would elicit confidential information either.

MS. CHRISTENSEN: So I guess at this point we have

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sort of an impasse. We can either proceed and you can object if confidential information comes up. FPL you can ask to have this deposition suspended, or we can hold off and let see if Commission staff can get ahold of the Prehearing Officer and see if we can get a ruling on whether or not there can be public participation and then proceed from there.

MR. GREEN: When you say participation, really all they are doing is listening. They are not going to be asking any questions so.

MS. CHRISTENSEN: Obviously.

MR. GREEN: There is no person from the press present in this room.

MS. CHRISTENSEN: Excuse my language, public attendance at the deposition.

MS. MAPP: This is Kyesha Mapp for Staff. I will state that I am of the opinion that while we are a public agency and subject to public records requests, that is not triggered during this deposition. Any documents that are requested, of course, would be provided.

However, there is no entitlement that the public has to participate in a deposition as this is an ongoing litigation and this is not a publicly noticed meeting in which the public was invited to attend.

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However, if the parties would like to have an official ruling from the Prehearing Officer, I can see if he is available to resolve the issue if we cannot come to one amongst ourselves.

Just so I can be clear, OPC, are you stating that you will not provide a separate call in number for the purposes of having the deposition today?

MR. REHWINKEL: This is Charles Rehwinkel. We are not in a position to take affirmative steps to exclude anyone from listening to the deposition as a public agency. We will not be unable to do that.

MS. CHRISTENSEN: And, FPL, if such a new number is not provided, will you terminate the deposition today?

MS. CANO: Yes, either terminate or suspend pending other arrangements or a formal determination.

MS. MAPP: Okay. I guess we will need another break while I attempt to contact the Prehearing Officer and if we can, if he is able to make a ruling. Please wait, I don't know how long that will take. If it is longer than ten minutes, I will come back on the line and explain the situation as it is.

However, I will need to step away for now.

MS. CHRISTENSEN: Okay, and I'm, of course, going to line open.

MS. CANO: Okay, thank you. We are back off the record then.

(A brief recess and discussions off the record.)

MS. CHRISTENSEN: For the purposes of the record could we please have the objections stated clearly what FPL is objecting to. We will state our position and then if we can have from Mary Ann the Prehearing Officer's ruling. I think that will make this clear.

MS. HELTON: I think so.

MS. CHRISTENSEN: Ms. Cano, would you please state your objection for purposes of the record.

MS. CANO: Sure. Once more FPL is objecting to the participation of any non-party in this deposition. It is not a publicly noticed meeting or a public hearing to which members of the public or the press are entitled to participate. We've heard no defense, no law, statute or order implying otherwise. In fact we have found case law supporting our position.

So we simply ask that we start again with only parties participating. Thank you.

MR. REHWINKEL: From the Public Counsel's standpoint, we were the original parties noticing this deposition. We noticed it telephonically as per the rules and practice of the Commission.

We noted as the preliminaries were occurring that

one of the individuals who announced his presence on the line was a member of the press. It did not concern us because it would be our understanding that a member of the press would merely be listening to the deposition and not participating in an active way, but mere passive listening.

We were not concerned and it was not our intention or design of questions to elicit confidential information. We do not have an objection to it, nor do we understand that there should be an objection to that level of involvement in the deposition.

Furthermore, we believe it is inappropriate to selectively pick and choose who can participate by listening only in the deposition. So we would object to taking affirmative steps to exclude anyone from listening to this telephonic deposition.

However, if we are instructed to take measures, lawful measures in accordance with the Commissioner's order, we will abide by them.

MS. CHRISTENSEN: Does the City of Miami or SACE want to also interpose any objections or comments?

MR. CAVROS: This is George Cavros with the Southern Alliance for Clean Energy. We do not intend to ask any questions that would elicit confidential information. We do not object or rather we object to

excluding anyone from this deposition. In the interest of administrative efficiency, we would like to dispose of this issue and to move on.

MR. GREEN: This is the City of Miami, Chris Green. I don't think the current objection is to the confidential information, it's the attendance by telephone of a non-party that is at issue. We have no objection to the non-party who is not present in the room, is not asking any questions, is merely monitoring it via telephone. We have no objection to that.

We would ask for a ruling from the Hearing Officer. The case that was cited by FPL, the Florida Supreme Court case, we think is a distinguishable case. It is a criminal case, number one involving a deposition. This is an administrative proceeding before the Public Service Commission and this is public. We think the case can be distinguished.

MS. HELTON: Thank you I believe that is all of the parties have now made their positions clear on the record. This is Mary Anne Helton. I'm the Deputy General Counsel for the Florida Public Service Commission. I have spoken to the Prehearing Officer for this docket, Commissioner Brise. His ruling is, that Florida Power & Light is not required to proceed in the deposition that has been noticed for this time

and place under these circumstances.

The deposition may proceed either in person or if Florida Power & Light is comfortable and can secure a secure line, the deposition may proceed under those circumstances.

MS. CHRISTENSEN: I guess that leaves us to FPL since we can't all be in person, if you have the ability to set up a conference call that we can all dial into.

MS. CANO: Sure, we can handle that.

MS. CHRISTENSEN: Do we need a short break until that can be issued to the parties?

MS. CANO: Yes, let's see it is 10 to 12, are people interested in eating on this break, or should we just get right to it?

MS. CHRISTENSEN: I probably have about thirty minutes worth of questioning. I don't know about the other parties, thirty or forty minutes maybe. I would like to get it done, but I will accede to the role of the other parties.

MR. GREEN: It doesn't matter.

MR. REHWINKEL: Before we proceed, Mary Ann, is Mary Ann still there?

MS. HELTON: Yes.

MR. REHWINKEL: Just so I understand where

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everything sits. We have noticed the deposition, we noticed it telephonically. We went a number out that was accessible by persons that FPL has objected to.

As I understand, since we don't have a written order, the Prehearing Officer says that FPL can terminate the deposition under the current conditions, where there are persons that FPL objects to on the phone.

MS. HELTON: That are non-parties.

MR. REHWINKEL: It can proceed with whoever is there in person, or it can proceed on a basis that FPL finds comfortable, which I would assume telephonically would mean that there would be a different number, that is not accessible to anyone other than the parties that FPL does not object to.

MS. HELTON: I think if it were to proceed in person, I'm not sure that could happen at this point in time, because I do think it would have to proceed in person with all parties present or if all parties chose to attend.

Or if Florida Power & Light has the means to provide a secure phone line and to give access to that secure phone line to only parties to the case, then the deposition may proceed that way also.

MR. REHWINKEL: Let me, and I'm not inviting this,

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but I kind of know where this is going. If we get a number, we will immediately be subject to a public records request for that number.

MS. HELTON: I think that Florida Power & Light can make a request for confidential treatment when it provides the phone number to all of the parties. If that is the case, and I guess they can also ask for a temporary protective order, so that you as a governmental entity and the City of Miami as a governmental entity --

MR. REHWINKEL: -- let me say this. I don't think the right to grant confidentiality extends beyond proprietary or the confidential proprietary business information. I think the basis for confidentiality of that information would not fall into the statutory parameters.

So I don't think, I don't think that we would be really in a position to kind of extend the side show if you will to further litigating about confidential information. Unfortunately, we have to do this discussion on the record here. I'm not inviting a records request, but I know it will be inevitable so I just wanted to address it up front here. I don't know that solution would work. It seems to me that the only way that public counsel and the staff and parties can

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participate, would be to have it at another time in person.

MS. HELTON: I guess if there is going to be a public records request for the number, and if there is a sense the number can't be treated confidentially, then I'm not sure how you can proceed without everyone present in person, if that's what the parties want to be there.

MR. ALBAN: Javier Alban from the City of Miami. Is there a capability of preparing a phone number where there is, for example, a code for participants and a code that will seclude everybody else. They can listen but they have zero ability, or is that technical capability zero ability to make a noise, a beep or anything like that telephonically.

MS. CANO: The objection extends to listening in.

MS. HELTON: I don't know if there is some way you can do like a meet. I know there is a zoom computer program where you can see people that are participating, I don't know if that is a way it can be done. I am over fifty years old and I'm not sure what all those other electronic capabilities are.

MS. CANO: Mary Ann, this is Jessica. I may have a suggestion. It is my understanding that the Prehearing Officer has the authority to issue orders

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for governing the conduct of the discovery and disputes like this. So, it wouldn't necessarily be an order regarding confidentiality, as you suggested, Charles.

That order has been issued verbally, that we may proceed with only parties present. In order to avoid the practical implications of a public records request for a document with a phone number on it, I am happy to give Patti a call and share with her the dial in information. I can do that for each of the parties necessary.

Then we can proceed in that manner. Taking all parties' words for it here on the phone, consistent with the Prehearing Officer's order that information cannot be shared. (A beep.)

MR. REHWINKEL: Did someone join? Okay, it may have been someone leaving. Mary Ann, is there any way everybody could go to lunch and there could be some order directing that FPL. I'm not, we want to take the deposition. We don't, we're not really interested in all the extraneous stuff, but we cannot be a party to excluding someone.

If the Prehearing Officer is directing that discovery occur and the parties to the docket, who are the only ones that may listen in, participate in any way in the deposition and to direct FPL to take steps

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to effectuate that, or direct us to effectuate that, I would feel more comfortable with that.

I don't want to get into this endless loop about public records. At some point we are interested in going forward with the deposition. But we want it to be clear that we are not in favor of excluding anyone from listening into this deposition.

MS. HELTON: I guess, you know, and maybe I got us side tracked by talking about a request for confidentiality. I think that is the Commissioner's ruling, that you can proceed with the deposition on a secure line, such that governing the discovery parameters such that no non-party may participate in the deposition.

MR. REHWINKEL: So as I understand it for this deposition to proceed today on this current session, that the only way that it can proceed is his direction that FPL take measures to disseminate a number that is accordance with his ruling?

MS. HELTON: In my understanding that the number would be only for those who are parties to the docket, is that what you're? I think that is my understanding of it, is that correct?

MS. CHRISTENSEN: Yes, that is correct. All I'm saying is that it is my understanding of the Prehearing

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Officer's ruling is, is that FPL would take steps to produce a phone number and a call in number, that would be only used by the parties. Excuse me, but as part of that being used by the parties, we are limited in how we can use that number. Only the parties who are participating in the deposition can use that number.

MS. HELTON: The ruling is that if Florida Power & Light provides the parties with a secure number, and it sounds like that Jessica's suggestion is to do that, reach out individually to the parties, if she provides a number to you that you can call, that do not share that number with anyone else.

MS. CHRISTENSEN: All right, if that is part of the Prehearing Officer's ruling, we want to make sure that is clear. Okay. I think we are clear on that, right, correct, Charles?

MR. REHWINKEL: Yeah.

MS. CHRISTENSEN: Okay. With that said, Mary Ann, we will abide by the Prehearing Officer's ruling and if FPL provides us with a number for use at this deposition, we will use it for our use only.

MS. HELTON: Thank you all.

MS. CANO: Okay, so FPL will be in touch with each of the parties to the docket with new dial in information.

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MS. CHRISTENSEN: When should we be expecting that call just so we can make sure we are here. Are you going to do that right after we hang up here or do you want to take like a thirty minute break or however long? We could reconvene at 1:00 o'clock?

MS. CANO: I could probably be ready for us all to reconvene at 12:30, if we want to move things along. I'm also happy to give people more time to eat, however.

MS. CHRISTENSEN: I will defer to you all who are at the room, because I can do thirty minutes or I can do longer. I will leave that up to you.

MS. CANO: All right, we will shoot for thirty minutes.

MR. REHWINKEL: The Public Counsel would like to state that we are only terminating this call because of the directions of the Prehearing Officer.

MS. CHRISTENSEN: Okay, I guess we can now be off the record and we will reconvene the deposition at 12:33 p.m.

(A recess was had.)

MS. MAPP: A couple questions, not of the witness but of the parties, just to confirm the Prehearing Officer's ruling has been followed. So I would just like to confirm that in no manner or form has any

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parties to this docket shared this telephone number or conference code with any non-parties in any form or fashion and that no non-party has been included by a party to this docket to your knowledge and to your knowledge, no non-party is present. If I could just get everyone to confirm that please. Keysha Mapp for Staff.

MS. CHRISTENSEN: This is Patti with Office of the Counsel, we have not shared it with anyone and nobody has made any requests for the information.

MS. MAPP: SACE?

MR. CAVROS: I can confirm that. I apologize, this is George Cavros, I can confirm it has not been shared.

MS. MAPP: City of Miami?

MR. GREEN: City of Miami wasn't provided the number, so we have nothing to confirm or deny.

MS. MAPP: Duke Energy?

MR. BERNIER: This is Matt Bernier for Duke and we have not shared the information with anybody.

MS. MAPP: Just so we have everyone, FPL can you confirm the same it has not been transmitted to any non-parties?

MS. CANO: Yes, confirmed.

MS. MAPP: Okay, thank you, that is all I have at

this time you may proceed with the deposition.

MS. CANO: Before we get into questioning, I just ask that if at any time we hear a beep of someone joining if the question or the witness could just pause for a minute so we can check on the identity of that particular person. Thank you.

CONTINUED DIRECT EXAMINATION

BY MS. CHRISTENSEN:

Q. Okay, I am assuming for purposes we are back on the record. Just to make sure, I was not planning on starting at the beginning of my questions, I was planning on resuming where we last were.

So I guess to bring everybody up to speed of what my last question was since it's been probably over an hour or longer, Mr. Scroggs, I believe the last question I was discussing with you referred you to page 14 of your May 1st pre-filed testimony.

We were discussing the Third DCA's ruling. Do you recall that question?

A. Yes, I do.

Q. Do you recall indicating that there were three areas which the Third DCA found deficient; the application of the local land development regulations; the Siting Board's conclusion that it could not require underground installation of transmission lines; and the Siting Board's

interpretation of the nature and applicability of a County regulation. Do you recall that question?

A. Yes, I do.

Q. Do you recall providing me that answer?

A. Yes, I do.

Q. Okay. Then I think the next question I would ask was, what was the status of the siting and I think you referred me to page 15 lines 4 through 7 of your testimony; is that correct?

A. Correct.

Q. Okay, all right, I think that brings me up to speed of where we were. As part of that response, you were indicating possible solutions were a negotiated settlement with the interested stakeholders or returning to the Siting Board for resolution of the three issues. Am I kind of summarizing your testimony correctly?

A. That's correct.

Q. Now I have follow-up questions regarding that. Has FPL started to engage in any negotiations with interested parties regarding resolving those outstanding issues?

A. Yes.

Q. Okay. Do you expect those negotiations to be resolved soon, or when do you expect to have any resolution on those three issues?

A. We would expect by the end of this year, beginning of next year to be in a position to go back to the Siting Board.

Q. Okay. Are you in a position to disclose who FPL is currently negotiation with, who FPL has deemed interested stakeholders, Mr. Scroggs?

A. Well, there are three different issues. One issue relates to the Siting Board's ability to determine or direct undergrounding. That is solely within the Siting Board's purview. That is nothing that we are directly pursuing.

Q. Okay.

A. The environmental overlay associated with Miami-Dade County DERM's environmental regulation is something that can be addressed by continuing to develop the West Consensus Corridor. The West Consensus Corridor is not affected by that overlay. So FPL is on track with continuing to develop that West Consensus Corridor. We've had negotiations and discussions with the State of Florida, DEP and Trustee's Fund, South Florida Water Management District, Army Corps of Engineers, Department of Interior, and various private parties in the process of developing that West Consensus Corridor.

Then the transmission issue on the east corridor, we've been in discussions with municipals that were parties to that and look towards a resolution.

Q. Okay, well, let's pull that apart a little bit. You talked about the Western Corridor negotiations and I guess what is involved in obtaining the Western Corridor? Is there a land swap that needs to occur between FPL and the Natural Park Service?

A. No. That land swap which you are referring to affects primarily the Western Preferred Corridor. That corridor was also certified in the Site Certification, but is our backup corridor. Our primary corridor that we are trying to develop is the Western Consensus Corridor that runs east through the Bird Drive basin area.

This is an area that Water Management District owns the property, but it has encumbrances on the property from the Department of Interior, environmental encumbrances. Those encumbrances need to be relocated to other suitable property to allow that property to be utilized for a transmission line corridor.

So, there are discussions with various agencies at local, state and federal levels necessary to affect that delineation of where that alignment go within that corridor and therefore, what portions of those parcels that are encumbered need to have those encumbrances relocated.

Q. Where are you in the status of relocating any encumbrances that would have to be moved?

A. We've identified an alignment. We have met with

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and are meeting with Water Management District and Trustees who are the principal state agencies associated with that. Identifying exactly what needs to occur.

There is a federal process within the Department of Interior to apply for relocation of encumbrances. That wouldn't be done necessarily by the Water Management District that currently owns the property.

So it's just an administrative process. It's a defined process. In the Site Certification it talks about a period of three years for us to accomplish this. That three years was basically determined by looking at past activities similar. So it's a lengthy process to take environmental encumbrances that are placed on federal or state property and relocate them to other suitable properties.

Q. Is that three year estimate from today going forward or does that include, when did that three year period start running from FPL's perspective?

A. Well, let me be clear. The three year period as it is identified in the Site Certification, condition of certification, begins upon a not final and non-appealable Site Certification. So it hasn't been triggered by reaching that milestone yet.

Nonetheless, FPL has proceeded towards that goal. In other words the three year clock mentioned in the conditions of certification, we don't consider them

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triggered, but we are proceeding anyway. We began that process late in 2016 and have been meeting with Water Management District and other agencies roughly monthly since then.

Q. Just so I am understand the process, you said there was an internal process at the Department of Interior to remove these encumbrances. Does any of that internal process allow for hearings or public hearings that may add on additional time to the three years you anticipated?

A. No, my understanding is it is an administrative decision made within the Department's authority.

Q. Okay. Now, the Site Certification that you are talking about in your SDS-10, the anticipated date of that is now the end of 2017/18 time frame; is that correct?

A. Well, it's whenever we resolve those issues and bring them back before the Siting Board and the Siting Board makes a decision.

Q. I think you said maybe earlier today, that you thought maybe you would have that when?

A. Again, the target would be by early 2018?

Q. Early 2018, okay. Then if I am understanding, I just want to make sure I'm understanding what you're telling me today. That once you have that, then you would go back before the Siting Board and how long does that process take?

A. It's very similar to the original Siting Board

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process. We need to get on the agenda. We need to have it before the cabinet meeting as a Siting Board and have them make a decision. So, thirty days, sixty days from conclusion, I don't know.

Q. Then after that then it would be another additional three years to process through the Department of Interior, you're estimating for the Western Consensus Corridor?

A. No, they are not added to. If we have a resolution with the property owners of the properties within the West Consensus Corridor, we present that resolution, a commitment, a memorandum of understanding or what have you, that we would proceed to develop the West Consensus Corridor. It's my understanding is the Siting Board could act on that.

Q. Okay. But you wouldn't be able to begin to build the Western Corridor until you got clearance through and everything was cleared through the Department of Interior; is that correct?

A. Correct, and it is not inconsistent with what the Site Certification says today. The Site Certification says, that the West Consensus Corridor is the corridor. It does not, therefore, grant us that land rights to do the construction. That's something that has to happen after the certification of the corridor.

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Q. Okay, I'm just trying to get a better understanding of where you all are at?

A. I'm trying to be clear too.

Q. In the process. All right, let me turn your attention to the next box on SDS-10. It talks about the Army Corps of Engineers application, do you see that?

A. Yes.

Q. Again, you have a final decision of record, it's indicated with a green box 2016. What does that mean?

A. It's a Final Record of Decision. That's where the Army Corps would codify the background for their decision. In part they use the NRC's final environmental impact statement as a portion of their record of decision.

Because the Army Corps process is not only NEPA based, but based on the Clean Water Act, they do an additional reviews. Those additional reviews are solely Army Corps actions and those are part of what would be recorded as the Record of Decision.

Q. I'm seeing a solid green box, has that been finalized?

A. It has not.

Q. When is your anticipated date that would be finalized?

A. Any time. We've been working routinely with Army Corps over the last six months providing them figures and

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information that they needed to complete their Record of Decision. So our expectation is that is imminent.

Q. Do you have any information from the Army Corps of Engineers that says, we're going to be making a decision in thirty, sixty, ninety days or something like that?

A. No.

Q. What is the 404(b) wetlands permit for?

A. Under the Clean Water Act, the Army Corps is the federal agency that reviews any construction that is being conducted in areas that are wetlands or designated as historic wetlands.

There are properties associated with the project, both the site and lateral projects such as pipelines and transmission lines abut or cross wetland properties. Therefore the Army Corps has to review the impacts to wetland properties.

Q. Has that 404(b) permit been issued?

A. No, that would be what we are designating as sometime in the middle of 2017.

Q. So in other words 2017?

A. Yes.

Q. Can you briefly describe what to your knowledge if anything needs to be done with that permit?

A. A Record of Decision needs to be issued, a determination by the Army Corps that we have met the

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conditions necessary to receive that permit.

Q. Is there any process or hearing process or appeal process that after the Record of Decision has been issued by the Army Corps of Engineers that could delay the permit issuing?

A. Issuance of the permit is an agency action. Agency actions can be challenged.

Q. What are the Section 408 reviews?

A. Those are another engineering review conducted by the Army Corps of Engineers associated with any projects that come in proximity to flood control structures.

So in the case of the Turkey Point project, some o the transmission line corridors abut surface water canals. A couple of the pipelines cross underneath canals that the Army Corps is responsible for. So the 408 reviews are an engineering review to determine whether or not our proposed construction would pose any integrity issues to an existing flood control.

Q. Have those reviews been completed?

A. The information has been provided to the Corps. We expect them to be completed along with the 404(b) permit issues.

Q. To your knowledge is there anything else that needs to be provided or done to complete that review?

A. No, not to my knowledge.

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Q. I think you indicated that you anticipate the permit could be issued late 2017 or '18 on page three of your testimony; is that still accurate?

A. Yes.

Q. Again, looking at SDS-10 it shows the Final SER and ESI (sic) were completed last quarter of 2016; is that still correct?

A. Could you say that again please.

Q. Looking at the Combined License Application section of SDS-10, it appears to indicate the Final SER and the Final EIS were completed in the last quarter of 2016; is that correct?

A. Yes, the Safety Evaluation Review and the Environmental Impact Study were issued in late 2016.

Q. On page 14 of your testimony, you talk about in lines 4 through 7, you discuss that the contention focusing on the using water cooling will be addressed through a contested hearing; is that right? It says, let me read the sentence: A single remaining contention in the Turkey Point 6 and 7 units COLA process focuses on certain constituents in the reclaimed water to be used for cooling. Is that correct?

A. Yes.

Q. Has this contested hearing been held?

A. Yes.

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Q. To your knowledge has a decision been made and if so, what was it?

A. No decision has been made.

Q. Do you know when that decision will be made and when it will be issued?

A. It's at the discretion of the Atomic Safety and Licensing Board. We would expect it within the next month, but there is no set schedule.

Q. If you know, do you know whether or not if that decision is, once that decision is issued, do you know whether or not that can be appealed?

A. I imagine there is some appellate process that would apply to an ASLB decision, but it's fairly limited.

Q. If you know, do you know what affect, assume for the sake of argument that the Atomic Board says for whatever reason they don't want to use the reclaimed water for the cooling system, what affect would that have if any on the ESI (sic) or the SER that were already issued?

MS. CANO: I'm going to object, that calls for speculation.

BY MS. CHRISTENSEN:

Q. If you know the answer?

A. Well, your question assumes I think improperly what the scope of the ASLB hearing was.

Q. Okay?

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A. The question is whether or not the Environmental Impact Statement sufficiently addressed the constituents in the reclaim water. So that's the decision that is before the Atomic Safety and Licensing Board.

Q. So what affect, if any, do you think, and I'm just trying to get a better understanding of this, if you believe that the scope of the ALB's decision is limited, is there any affect do you believe on the current Environmental Impact Statement or potential Environmental Impact Statement?

A. There is such a broad range of outcomes, that I wouldn't speculate as to what that would be.

Q. Let me just get down to what I'm interested in, which is could this decision impact and reopen the Environmental Impact Statement or in past review process?

A. Again, it's difficult for me to say. There is a number of different ways that any issue the ASLB would identify can be addressed without reopening the EIS process. So it's pure speculation, I can't give you a good answer.

Q. What I'm trying to understand is depending on the decision, could that add additional time before the final license is issued?

A. It is possible.

Q. I think also on that section of your testimony you talk about the NRC will also conduct a mandatory hearing to

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formally approve the SER and the EIS and approve the COL; is that correct?

A. That's correct.

Q. My question to you is that a hearing that can be done prior to the Army Corps permits being issued?

A. Yes, they are unrelated.

Q. Let me ask this because I don't know the answer to this. If the NRC were to approve your COL, is that contingent upon the subsequent approvals by the Army Corps of Engineer permits?

A. No.

Q. Would the Site Certification process, would that have any impact on whether or not the COL was issued?

A. To my knowledge, no.

Q. Let me ask you this question. If for some reason the Army Corps of Engineer permits were not issued or were not granted for the Western Corridor or for the 408 reviews, would that in any way impact on FPL's ability to build Turkey Point 6 and 7?

A. Yes, any of these processes, individually are required, necessary for FPL to go forward with construction. They independently are not linked in their own processes.

Q. So if the NRC issued the COLA, but you didn't receive the Army Corps of Engineer permit, that would essentially preclude the project from going forward, if I am

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understanding your answer correctly; is that right?

A. That's correct.

Q. What is FPL's estimated annual cost to obtain the COLA? I think you said there was some you anticipated it was going to be either the end of this year and I think you estimated costs of this year or in 2018. Do you have an idea of how much it costs annually to kind of obtain the COL?

A. Well, I believe we've given it. It varies by year, because it varies by the activities accomplished in a given year. We've provided estimates of '15 and '16 that we are here to talk about. I think we have indicated that we expect to receive the COL by late 2017 or beginning of 2018.

Then we would move into a maintenance mode, where we have obligations that require us as a licensee to take to maintain the combined license and there is costs associated with that. So it would be very specific to what year we are talking about.

Q. Let's go back to page 3, line 19 of your testimony.

MS. CANO: Are we still in May?

MS. CHRISTENSEN: I'm going to be in the May testimony for my questioning.

THE DEPONENT: Page 3, line 19 I'm there.

BY MS. CHRISTENSEN:

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Q. You say obtaining the COL will create a valuable option to add new nuclear generation to FPL's system in the future, when it is most advantageous to do so.

Can you describe what you mean a valuable option in that sentence?

A. Well, the process to obtain the COL has taken us about ten years. So the ability to execute, meaning move from licensing into building, without a license would be about ten years.

So by being able to avoid that, by having an issued license in hand that could be moved quickly into the construction phase of the project, provides value by giving FPL the ability to meet customer demand under a much shortened time frame with a higher certainty of what is approved.

Q. And the license would only be applicable for an AP1000 unit; is that correct?

A. That's correct.

Q. If I understand correctly, please correct me if I'm wrong, any additional changes to the design or engineering of the AP1000 that would occur between the time you get your license and the time you would construct, FPL would have to include that in their construction process; is that correct?

A. Well, it would be a licensing activity to amend

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the license to incorporate any design revisions, yes?
Q. Is that part of the costs you anticipate to maintain the license?
A. Yes, I believe I speak to that specifically within my testimony. If you give me a minute I can look it up?
Q. I just want to understand the process. So during the pause, or after you get your COL, if there is a continued pause before construction, that's part of the maintenance costs that you would anticipate incurring would include any updates for engineering or design?
A. Yes, specifically on page 26, beginning the question on line 13, describes specifically the configuration control activities that we would need to undertake to maintain the license current.
Q. Let me turn your attention back to page 3. I think you also talk about building this when it is most advantageous to do so. Since FPL is taking a pause in moving to construct the phase, does FPL agree that it is not advantageous to construct the plant now?
A. I think what we are saying is we have incomplete information upon which to base that.
Q. Has FPL done any sort of economic or feasibility study on the Turkey Point 6 or 7 projects for this year's fuel costs?
A. I'm not participating in the fuel costs, so I

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don't know.
Q. Or nuclear docket?
A. No.
Q. Let me point you to page 20 and 21 I think of your testimony. On these pages you state that FPL decided not to request contemporaneous cost recovery for obtaining and maintaining the necessary Turkey Point 6 and 7 approvals beginning in 2017; is that correct?
A. Could you point me specifically, I'm just making sure, you said page 20 and 21?
Q. Correct. I think in those three pages you talk about, and it may go on to page 22 as well, if I can find where it specifically says that.
A. Sorry.
Q. Maybe I wrote down the wrong page number.
MS. CANO: Are you referring to lines 20 through 22 on page 3 still?
BY MS. CHRISTENSEN:
Q. Yeah, I think I looked at it wrong. I'm sorry, I should have stayed on page 3, lines 20 through 21.
A. Yes, ma'am, that is correct.
Q. Sorry about that. Could you explain what you mean by contemporaneous cost recovery in that statement?
A. Well, up until now the our requests have been to recover costs in the same year in which they occur based on

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our projected costs for that year. Commonly there was a ruling in November as to whether or not we can recover that money in the following year. So contemporaneous would be as we have conducted it up till this year.
Q. Okay. You also say that, it's for obtaining and maintaining the approvals, looks like includes all of the COLA related activities?
A. Correct.
Q. If FPL is pausing the cost recovery through FPRC, can you explain how FPL intends to accord any monies spent on this project?
A. Is that an accounting question?
Q. Well, I guess I mean you are the project director. Is it FPL's intention to maintain a record of the amount of money that is spent on this project? I think you talk a little bit about it, about how much annually anticipate that you will be spending on maintaining the license. So I'm just trying to understand better, how is it, during this pause period, how is that FPL intends to keep track of this, the money that is being spent?
A. I understand the question, I was probably over thinking it. Basically, we are going to continue the project accounting as it currently stands. We will maintain track of all costs associated with the development of this project, including those necessary to obtain licenses,

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permits and approvals, defend those licenses, permits and approvals, and any maintenance activities or compliance activities necessary to maintain those permits and approvals valid.
Q. Okay. I don't know if you know the answer to this. You said you are going to continue the project accounting in the same way. To your knowledge is FPL intending to apply the same interest cost rate that it is currently applying?
A. Again, as far as I can say it, in the same manner we would be proceeding.
Q. All right, looking at page 27 of your testimony?
A. I'm there.
Q. Lines 17 through 21. I think this is where you discuss that FPL anticipates incurring about $25 million for the project including carrying costs in 2017; is that right?
A. I'm through the clarification I may have lost your question.
Q. My question was, is it correct that about $25 million that FPL anticipates incurring in 2017 including carrying costs for the project?
A. Yes, that is still accurate.
Q. I think you later go on to say that FPL has spent costs to decrease to about $10 to $15 million annually including the carrying costs during the initial maintenance

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period; is that correct?
A. Yes. On page 26 the last Q & A beginning on line 13 describes a number of license amendment requests that have already been accommodated for the Vogtle and Summer licensees that are awaiting us as we then have an issued license, we would then turn to working those thirty some odd license amendments. That would be in the $10 to $15 million per year in the first couple years. As we work through those, the costs would decrease along with the number of license amendments that we have to manage.
Q. I think we discussed this earlier, but that amount would be being recorded by FPL in the same manner that it is currently recording the project accounts?
A. Yes.
Q. The only difference was FPL is not planning on asking for cost recovery that year in the Nuclear Cost Recovery Clause?
A. We do not request contemporaneous costs recovery. We do request the determination that it is reasonable for FPL to undertake these actions. We ask to defer recovery of those costs to a future time.
Q. I guess that is one of the questions that I had. If FPL, if the Commission -- all right, on page 25, you say that: While FPL is not seeking a reasonable determination from the Commission regarding the costs it is spending in

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2017, FPL is seeking a Commission determination that FPL's decision to complete the COL is reasonable.
Can you explain how that is different in FPL's opinion?
A. One is a general statement of reasonableness of FPL's going forward decision. One would be a more specific review of specific line item costs for contemporaneous cost recovery.
Q. I just want to understand it better. If the Commission determines that it is reasonable to get the COL, does FPL believe that it would be allowed to seek NRC recovery at a later time for the COL related costs including maintenance costs?
A. Well, coupled with the request to defer, yes.
Q. And this would be even if FPL had not done any feasibility analysis or study regarding getting the COL; is that correct?
MS. CANO: Patti, I'm going to object here. I think you're asking for a legal conclusion on the evidence necessary.
MS. CHRISTENSEN: Well, what I'm trying to understand is whether or not, and I don't think it's a legal analysis, I'm just trying to understand if it is FPL's intention that they would continue to collect these costs or record these costs, and is it FPL's

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position that in ten years, if the plant doesn't get built, you can come in and ask to collect these costs? Is that what the testimony is saying? That's what I'm trying to understand what position the testimony is.
MS. CANO: That question calls for speculation and assumes facts for a scenario not in evidence so same objection.
BY MS. CHRISTENSEN:
Q. I would disagree that you guys are asking for a reasonableness determination to go get your COL. I think we've established that you guys haven't filed a feasibility study yet. So I'm trying to understand, is it FPL's position that you would record these costs, and then at some future date, you could come in at some future date seek recovery of these costs through the NCR clause. All I'm trying to understand is that what FPL's position in the testimony is when you are asking for the reasonableness determination that you're talking about in your testimony?
A. Again, the testimony speaks for itself. I think we are asking to defer all that decision making to a later time, when there is better information to make that decision.
Q. Okay, so you're not asking the Commission currently to find it reasonable, that it is reasonable to go ahead and get the COL?

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A. No, that is not what the testimony says.
Q. Okay. What do you mean in your testimony when you are asking the Commission to find it reasonable to get the COL? What do you expect the Commission finding that it is reasonable to get the COL will allow FPL to do?
A. Again, the NCRC process asks us to kind of walk hand and hand with the Commission as we go down this very complex licensing process. We are seeking confirmation that the Commission agrees that this is the right course of action to obtain the COL, when we are within months of it being issued, that pursuing that is reasonable.
Q. Let me ask you this. I'm going to try it a different direction. If the Commission says that FPL, if you decide not to build this plant, and if you don't do a feasibility study, you take the risk of not recovering these costs, would FPL still be seeking to obtain the COL at this point?
MS. CANO: Objection, vague, I couldn't even follow it, I'm sorry.
MS. CHRISTENSEN: I'm sorry, what?
MS. CANO: I couldn't follow the question, Patti.
BY MS. CHRISTENSEN:
Q. Let me try and rephrase it. Would FPL continue to seek the COL if FPL is not allowed to recover these costs if the plant is not placed into service?

A. In my mind that is a speculative question, that's not the situation that is presented to us at this point in time.

Q. Yeah, except for this is a deposition, so if you have an opinion, if you could please respond to the question?

A. I would be speaking for FPL management and I'm not in a position to do so.

Q. So at this point you cannot tell me whether or not FPL would be still seeking to obtain the COL if the shareholders had to bare the risk of not recovering these costs, if the plant was not put into service; is that your testimony today?

MS. CANO: Patti, I apologize, I'm not trying to be an obstructionist here, but I just want to make sure I'm following you. You're asking what would we decide to do today if the Commission rules a certain way and ten years later something happens with respect to construction of the plant, I can't follow.

BY MS. CHRISTENSEN:

Q. Because at this point you're asking the Commission to make a reasonableness finding on the COL, that's in today's filings. I'm trying to understand, what FPL's position is, what is the impact of that reasonableness determination.

Does FPL take the position that finding it reasonable to get the COL entitles them to collect that money in ten years, even if they decide not to build the plant. And conversely to that, if FPL is not entitled to collect that money ten years from now, would FPL still be advocating getting the COL. I'm trying to explore what you all put in your testimony?

A. Let me parse that a little bit. It's a little clearer now what I think you are hoping to get out of this. We are asking, we think it is reasonable for us at this stage of the game, as close as we are to obtaining the COL, to finish that process out and have an asset that has value for twenty years. We think that is reasonable.

We are asking for the Public Service Commission to vocalize their view of whether or not that is reasonable. That does not bind the Public Service Commission that at some future date, we come back in and we get a blank pass on whatever money we have spent.

We accept that there will be another review process at that point in time that will go through the actual expenditures and review the results of the situation.

Q. I think I'm understanding what you are saying, and if I'm understanding what you're saying, then the reasonableness would not be reviewable at some future, but the amount of monies spent would be reviewable at some future point? Is that my understanding of what you just said?

A. Just as now, yes, I think, if we were asking for the reasonableness of the specific expenditures in 2017, we would have provided the detailed expenditures in 2017 or 2018 or any of those future years.

What we are saying is, we're asking just to defer that. But, we also want to confirm with the Public Service Commission that they agree it is reasonable in concept for us to complete this process given where we are right now.

Q. Okay and I think based on the earlier testimony you gave us, it's possible the COL won't be granted until 2018, I think that was your earlier testimony; is that correct?

A. Yeah, all those milestones have other factors affecting when they can be accomplished.

Q. Is it possible that the COL granting could also bleed over into 2019 if any of those key parts get delayed beyond what you're currently expecting?

A. I'd say it's possible, but my opinion is it is not likely.

Q. I believe you stated in your testimony somewhere that the COL once it is granted, it's approved or good for twenty years; is that correct?

A. That's correct, line 7 page 25.

Q. If you know in a non-nuclear situation, does FPL spend money to build a non-nuclear plant and the money is recorded as part QUIP and SPDC (phonetic) if a plant is abandoned at any time before being placed into service, is it correct that money -- if you know, is it more normal plant being built, the shareholders bear the risk of plant completed or not; is that correct?

A. Just to key in on your term normal, under the nuclear cost recovery, I mean I consider that normal. That's what I've operated under for ten years.

Q. So in the non-nuclear area when you build a plant, the shareholders bear the risk of whether or not the plant will be completed and the costs associated with that; is that correct?

A. For technologies that do not qualify for cost recovery under IGCC or nuclear, you're correct.

Q. I'm going to take one more shot at this. Is FPL proposing here that, let me try this again. Given your earlier testimony that the project will be recorded in the same accounting manner as it is now, is it your anticipation that FPL will be allowed to recover the costs for the COL and the maintenance even if the plant is never built?

A. I would not speculate on what the Public Service Commission in the future would decide.

Q. I'm not asking what the Public Service Commission

would do, I'm asking is it FPL's position based on your testimony, and your previous testimony that you're going to continue to account for in the same manner, is it your position that you should be allowed to recover this money even if the plant is not built?

MS. CANO: Objection, calls for speculation.

BY MS. CHRISTENSEN:

Q. I'm just trying to understand are you operating in the pause period, do you assume that you are still operating under the Nuclear Cost Recovery Clause in some way, or are you saying you are going to treat this as if it was a non-nuclear plant project?

A. No, what we are saying is, we are not asking contemporaneous recovery. We are asking for a deferral to the future for the recovery of these costs. We are staying --

Q. -- I'm just trying --

A. -- if you let me finish, Patti. We are staying within the framework of the Nuclear Cost Recovery Clause anticipating that there would be a potential future time when we would seek recovery of that, those costs.

Q. Okay, I think I've flushed that out and I think I understand what FPL's position is.

MR. GREEN: On that note can we take a bathroom break.

MS. CHRISTENSEN: We can if you want to take a five minute bathroom break, I'm fine with that. I have like another page of questions.

MR. GREEN: I mean are you almost done at a natural conclusion and then we can pause before I start. I don't want to rush you.

MS. CHRISTENSEN: I think I've got like another page full of questions and that should be it.

MR. GREEN: I just need two minutes, can we take a two minute break?

MS. CHRISTENSEN: That's fine.

MR. GREEN: Thank you.

(A brief recess.)

BY MS. CHRISTENSEN:

Q. Back on the record. I think you testified before, Mr. Scroggs, that FPL has not done a feasibility study in accordance with Commission rules this year; is that correct?

A. FPL has not done a feasibility study this year.

Q. And is it FPL's intention that it will not do any economic feasibility studies during the time period when you are collecting money, or accounting for money collected for the COL or for the maintenance of the COL?

MS. CANO: Objection, you said collecting money, I'm not sure.

MS. CHRISTENSEN: Well, you're going to be

accounting for the money spent, would that be a better phrasing?

MS. CANO: Yes, thank you.

THE DEPONENT: Sorry, can you restate please.

BY MS. CHRISTENSEN:

Q. I just want to understand a little bit better, you all have not done an economic or feasibility study this year. I'm assuming there is a pause period for whatever length of time that is, that while you're continuing to get the COL and are continuing to account for the costs related to the COL and the maintenance of the COL, it is FPL's intention that they will not be providing any feasibility studies during that period; is that correct?

A. Yes.

Q. To your knowledge has FPL asked for or sought any sort of waiver from the Commission's rules that require the feasibility study for Nuclear Cost Recovery Clause?

A. I'm not aware of any such request. I would further say, I'm not aware that we are in any violation of the Commission.

Q. Let me draw your attention to page 19, lines 1 through 3 of your testimony?

A. Yes.

Q. There you say the historically low trend in natural gas price forecasts places continued pressure on

economic benefits to be delivered by the project. Can you explain what you mean by pressure on economic benefits as used in that sentence?

A. The historically low natural gas price trends that are projected into the future, make combined cycle natural gas generation very competitive. It provides a lot of savings for our customers. But in comparison to nuclear, nuclear has more economic pressure on it to compete with that low priced fuel source.

Q. I'm not sure, I think you used the word economic pressure in the response to explain economic pressure. I'm just trying to understand is your testimony basically stating that because the natural gas prices are so low, that the nuclear, the cost of bringing on new nuclear generation does not show it to be the most cost effective?

A. Let's step back a little bit. In the history of this project, we've projected benefits to customers based on fuel cost savings and emission compliance cost savings.

Earlier in the project we were against a price curve of $6.00 to $7.00 per MMBTU natural gas. Now we are looking at $3.00 per MMBTU natural gas price. Therefore, those low trends mean that there is less calculable benefit to our customers.

Q. So if you were to do the same economic feasibility study that had been done previously, you're saying there

would be less times where the project would come up as economically feasible under current market conditions?

A. I can't project what that would do. There is a time change. We are talking about shifting the project out four years. That means we are talking about twenty to forty years of operation that is four years distant from the prior feasibility analysis.

There are ongoing changes and contemplations on what emissions compliance costs would come up. There is a range of natural gas forecasts. So I can't tell you, I can't speculate what the what the results of that very detailed complex analysis would be.

What we are simply saying here is acknowledging that natural gas prices haven't gone up dramatically since 2015, when we did the last feasibility analysis. So we wouldn't expect there would be any increase in benefits to customers.

Q. I think you said, you started to discuss a little bit in your next question you talk about CO2 and compliance and you say, it remains reasonable to assume that CO2 compliance costs will be realized at some point in the future during the sixty years of the project.

Can you tell me what is the current status of the CO2 regulations?

A. No, I can't tell you the current status of the CO2

regulations. It is not anticipated to come into effect within the next five years.

Q. So over the next five years, you wouldn't anticipate any economic benefits to be derived from a CO2 compliance scheme?

A. Well, in the next five years certainly not, because there wouldn't be any project. But in the next, I don't see, my understanding of current environmental emissions policy, a CO2 tax or other compliance costs being added into our future expectations with any certainty.

Q. Does the economic feasibility of the Turkey Point 6 and 7 unit project rest on there being a CO2 compliance scheme?

A. No, it is one of several factors.

Q. Have you done an economic feasibility study recently that removed the CO2 compliance scheme to determine whether or not the project remains economically feasible without the CO2 compliance requirement?

A. We have not done a feasibility analysis since 2015.

Q. I'm sorry when?

A. One five, 2015?

Q. Pages 16 through 18, you discuss Westinghouse; is that correct?

A. Well, we discuss factors that occurred in 2015 and

2016.

Q. Looking at page 16, lines 19 through 23, that's where you start the discussion regarding Westinghouse a resolution that was reached between them and some company on the Vogtle project; is that correct?

A. I believe it was on both projects, the Summer, Georgia Power Vogtle project and Summer project. The agreements were really secondary to the principal act of Westinghouse buying out Chicago Bridge and Iron Stone & Webster who was the constructor, the prior constructor on the project.

Q. Am I correct that as a result after the settlement had been reached and the announcement of the settlement, that Toshiba and then Westinghouse subsequently announced that it was going into bankruptcy?

A. That's chaining a lot of different thing together over a couple year period. That's not how I would necessarily characterize it.

Q. Let me parse it out a little bit. Are you aware of whether or not Westinghouse has announced it's going into bankruptcy?

A. Yes.

Q. Are you aware of whether or not it was announced that Westinghouse would no longer be doing nuclear construction?

A. I'm aware that Toshiba announced they would no longer be as owners of Westinghouse, be taking on future construction roles in nuclear power plants?

Q. And to your understanding when they were announcing they would no longer be taking on future construction roles for nuclear power plants, would that include the Turkey Point 6 and 7 projects?

A. Under the assumption that Toshiba would still retain ownership of Westinghouse and have the authority to make such a decision, yes.

Q. On line 17 of your testimony, I think looking at lines 15 through 23, you said that you do not expect Westinghouse -- hold on let me read. That FPL's expectation that any decision would prevent Westinghouse from participating in future projects, as the construction contractor would not preclude them from maintaining a more traditional role of engineering and procurement contractor, a position reactor design companies have historically taken in the nuclear construction projects.

My question to you is, how do you know, how did you obtain the belief that Westinghouse would still be maintaining or would still be willing to be an engineering and procurement contractor in the future?

A. My understanding of the business leads me to believe that Westinghouse owns the design rights to the

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AP1000, which is a very well vetted out design. The only design that is actually under construction, only new design that is actually under construction internationally and in the U.S.

That is an asset that is valuable to Westinghouse or anyone that would in the future own Westinghouse. So that they would want to preserve that value and maintain their ability to provide that design and procurement services for purchase in the future.

Q. So maybe you can explain to me what an engineering and procurement contractor would do. Maybe I'm not understanding what that role is.

A. For an example, General Electric makes gas turbines and steam turbines. They sell those gas turbines and steam turbines as an engineering and procurement provider.

Bechtel or Fluor or some other construction company can buy those components from the engineering and procurement contractor and assemble them as the constructor into an operating power plant. It's no different here. Substitute Westinghouse for GE.

Q. So what particular parts would Westinghouse, do you believe would they be selling to a construction company? Would they be doing the prefabrication of the nuclear power plant components and then selling them to somebody else to

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put together? Or would somebody else be prefabbing it based on what Westinghouse design?

A. Well, in traditional roles as the last 104 nuclear plants in the United States were built, the engineering, procurement contractor provided the design and oversaw the fabrication of the components, reactor vessels, fuel assemblies, pumps, piping, that were critical to make up another acronym NSSS which is the Nuclear Steam Safety System. That's the set of equipment and components that are unique to a nuclear design. So they would be a certain defined scope of equipment that they would be responsible for designing and insuring were fabricated appropriately and shipped to site for assembly by a constructor.

Q. So they wouldn't necessarily be the company that fabricating, but they would be overseeing the fabrication?

A. Correct.

Q. Have you discussed with anyone at Westinghouse whether or not they will be continuing in the future to maintaining the more traditional role of an engineering and procurement contractor?

A. I have not.

Q. If Westinghouse is no longer a viable option for the actual contractor, who are possible construction contractors that are available?

A. There is a range of contractor's I believe we

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identified several in a discovery interrogatory. The names that immediately come to mind are Bechtel, Fluor, F-L-U-O-R, Babcock & Wilcox, Washington, URS Washington, which is another nuclear industry construction company.

Q. Has FPL made any contact or initial contact with any of these companies?

A. With respect to fulfilling the role of constructor, no.

Q. Is FPL at any point considering being the contractor like Southern Power is now doing with the Vogtle contract or with the Vogtle plant, sorry?

A. I'm not aware of the last portion of your question. FPL has not made any determination as to what future roles would be.

Q. So at this point FPL is not taking off the table that they would be their own contractor?

A. It's not been dismissed, it's not been considered.

Q. Has FPL sought a return of its down payments on its reservation contract with Westinghouse as the contractor?

A. No.

Q. Is FPL planning on seeking a return of that down payment money?

A. I think you mischaracterize that dollar amount.

Q. Okay.

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A. It's not a down payment. It's a payment made for a forging reservation.

Q. All right, the reservation for the forging, if Westinghouse is no longer going to be forging, are you seeking a return of the money?

A. Westinghouse never was in charge of the forging. They, our forging agreement with them, we paid them a dollar amount, that they in turn went to Japan Steelworks and reserved a slot for our forgings.

Q. Is that intact still?

A. As far as we are concerned, yes.

Q. On page 18, lines 6 through 7, it states; That while Westinghouse events have reduced the certainty regarding the schedule and costs of the first wave AP1000 project, they do not have the effect of rendering a future nuclear construction project such as Turkey Point 6 and 7 infeasible. What do you mean by infeasible in that sentence?

A. There is nothing about current events that means that the Turkey Point 6 and 7 project couldn't be built at some future time.

MS. CHRISTENSEN: All right, I think the extent of questions that I have. Thank you, Mr. Scroggs. I turn it over to the City of Miami.

MR. GREEN: Do you need a break?

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THE DEPONENT: Keep going.
MR. CAVROS: Hang on, this is George Cavros. If I could ask the City of Miami how long they might go in their questions?
MR. GREEN: I think about thirty to forty-five minutes.
MR. CAVROS: Okay.
DIRECT EXAMINATION
BY MR. GREEN:
Q. Good afternoon, Mr. Scroggs. Do you have a copy of the Notice of Deposition we served you or have you seen the notice?
A. Yes.
Q. The notice included a request for production of documents in a Schedule A. Before we began I want to know if you produced anything or brought with you today anything in response to that schedule that hasn't been previously filed with PSC?
A. Yes, there are several documents that we identified that fall under that. If you would like me to go through those.
Q. I'm going to ask the court reporter to mark them. How many documents do you have?
A. A total of six or seven.
(City Exhibits Nos. 1 thru 7 marked for identification.)

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(A beep sound.)
MS. CANO: Hi, this is Jessica Cano, who just joined? Did someone just join? Maybe that was a drop. Before we proceed, the phone just made a noise so I'm trying to assess if someone joined, or perhaps someone dropped. Patti, are you still on?
MS. CHRISTENSEN: Yeah, I'm still here. I think that is the noise for dropping off.
MS. CANO: Staff, do we still have you?
MS. MAPP: Yes, still here.
MS. CANO: George, are you on?
MR. CAVROS: I'm still on.
MS. CANO: Matt Bernier? Okay, thank you, we can continue.
(Matt Bernier drops out of conference call.)
BY MR. GREEN:
Q. Can you identify the first document you produced and we will mark that as City No. 1?
A. Yes. Concentric Energy Advisors review of regulatory prudence for 2015.
Q. The second document?
A. The second document would be Concentric Energy Advisors prudence review for 2016.
Q. The next document?
A. The Advisory Committee on Reactor Safeguards

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letter of review from 2016.
Q. That was Exhibit No. 3. Next document?
A. Next document is the Third District Court of Appeal opinion April 2016.
Q. City No. 4. Next document?
A. Next document is the Exchange Agreement between Florida Power & Light and National Park Service.
Q. City No. 5. Next document?
A. No. 6 is the Record of Decision by the National Park Service confirming the land exchange.
Q. Next document?
A. The last document is a confidential memo regarding the decision to maintain the Combined Operating License after issuance.
Q. Let me just go through the exhibits, you have copies in front of you?
A. Yes.
Q. The first exhibit the regulatory prudence of FPL's management of the Turkey Point 6 and 7 project, can you tell me what category under the City's schedule that would be?
A. Category 2 or 5, or 2 or 4.
MS. MAPP: I'm sorry, this is Keysha Mapp, I would ask if those speaking could either speak louder or closer to the phone, we are having trouble hearing you?
MR. GREEN: Okay.

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MS. MAPP: Thank you.
BY MR. GREEN:
Q. City Exhibits Nos. 1 and 2 would fall in Category 2 of Schedule A. Can you explain how Exhibit No. 1 was reviewed or useful in performing your opinion or your testimony?
A. In my opinion I provide, I indicate that we provided the information necessary for the Public Service Commission to determine the prudence of the costs in 2015 and 2016. This is supported by an independent review by a company Concentric Energy Advisors.
Q. That's a consultant retained by FPL?
A. Yes.
Q. Do you know what the date of Exhibit No. 1 is, when it was prepared?
A. Probably February or March time frame of 2016. They generally come and do an audit at the first part of the year and develop this document that I rely on for the May testimony.
Q. Exhibit No. 2, can you tell me how that was used in reaching your opinions?
A. In the same way. This is a review of the process that FPL uses to manage the project and therefore make prudent decisions related to the project.
Q. Do you know when Exhibit No. 2 was prepared?

A. In that same time frame in 2017, March or April.
Q. Can you tell me what category Exhibit No. 3 would fall under for the City's Schedule A?
A. Again, category 2.
Q. How did Exhibit No. 3 influence your opinions?
A. Provided the opinion of the Court as to the deficiencies in the Site Certification and allowed me to determine, make my opinion as to whether those issues or how those issues could be addressed and resolved.
Q. I don't think we are on the same page.
A. Sorry.
Q. I had a letter from the NRC dated September 16, 2016?
A. Okay. That report --
MS. CANO: Do you mind if we remark them real quick his copies?
MR. GREEN: Sure.
BY MR. GREEN:
Q. I don't think you answered the question or had the correct document.
A. For Exhibit No. 3 the Advisory Committee on Reactor Safeguards, since it holds about a two day hearing to hear information and have discussions on certain aspects and then it is summarized within this letter. So this is a critical summary that supports the final safety and

evaluation report. So I relied on the ACRS's results on some of these critical items including underground injection controls.
Q. Exhibit No. 4 is the opinion from the Third District Court of Appeals?
A. Again, to understand the DCA's ruling and their description of deficiencies and that aided me in my determination of our ability to address those deficiencies.
Q. No. 5 how did that influence your opinion?
A. Again, Exhibit No. 5 is the Exchange Agreement for land exchange with the National Park Service. It has been completed in part, but it also includes commitments from FPL to continue development of the Western Consensus Corridor and other actions that we would take, assuming we are successful in that. So that's important, a very important activity for the project going forward.
Q. Has this agreement been executed by all parties?
A. Yes.
Q. This is just an unexecuted copy that you have?
A. Apparently the signature page aren't on it. It is executed and we can get you an executed copy?
Q. Other than the signature page, is the executed copy substantially similar to this?
A. Yes.
Q. And Exhibit No. 6, can you explain what that

document is.
A. This following the Environmental Impact Statement, the National Park Service developed a Record of Decision that summarizes their environmental review that supports the land exchange. So it was a pivotal document to get to the exchange agreement.
Q. When did you receive this?
A. It was executed in March of 2016.
Q. Can you explain what Exhibit No. 7 is in response to with respect to our Schedule A on the Notice?
A. Responding to probably Category 5. This is a work document memorandum that we developed to record the logic behind decisions that we make on the project. This was a document that explains what we considered with regard to whether or not we would maintain the Combined Operating License after issuance and our recommendation for maintaining the license.
Q. Is this an internal memo?
A. Yes.
Q. Who was this distributed to?
A. Senior management that oversees the project.
Q. Do you have a copy that in front of you?
A. Yes.
Q. On the back page there are alternatives.
MS. CANO: Mr. Green, before you go too far, there

are parties on the line who have not signed a non-disclosure agreement regarding confidential documents. So a very high level, like when was it created, signed, but the contents are confidential.
MR. GREEN: Who hasn't signed the confidential?
MS. CANO: SACE, Southern Alliance for Clean Energy is on the line. Then you would also need to designate this portion of the transcript as confidential.
MR. GREEN: You would have to follow-up with other discovery.
MS. CANO: That's fine.
BY MR. GREEN:
Q. Mr. Scroggs, you testified earlier that you've been working on this project since 2006 I believe, correct?
A. Correct.
Q. In fact you were involved as FPL's representative last year and filed testimony with the Public Service Commission, correct?
A. Correct.
Q. Are you familiar with the decision last year by the Public Service Commission to defer granting the request to defer by FPL?
A. Yes.
Q. Did you have a chance to observe the proceedings?

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A. No.
Q. Did you read the transcript of the proceedings?
A. No.
Q. Are you aware that Chairman Julie Brown asked FPL's counsel: So then the feasibility study will be filed in the first quarter of next year. Ms. Cano answered: Yes, consistent with the order establishing procedure of next year's docket.
Do you know why the feasibility study was not filed consistent with the representations of counsel?
A. Well, if there is significant change to circumstances related to the Westinghouse bankruptcy that continued or created more uncertainty about the schedule and costs of the first wave of AP1000 project that are very important to our ability to do a feasibility analysis. So as those events unfolded, FPL made the decision not to seek contemporaneous cost recovery and therefore not submit a feasibility analysis.
Q. But as Ms. Christensen questioned you about your testimony, you are seeking a determination from the PSC that it's reasonable for FPL to proceed with the licensing phase, correct?
A. I believe that is what my testimony reflects.
Q. But it's FPL's position that you don't need a feasibility study for determination that the costs incurred

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in obtaining the license are reasonable?
A. I don't believe that's what I said.
Q. That it is reasonable to continue the pursuit of a Combined Operating License without a feasibility study; is that FPL's position?
A. Well, again, let me point you to the exact language. It's important to get the language right. So I apologize to belabor this but. I'm trying to find.
Q. I think if I can refer you to page 25?
A. Yes, thank you. It says specifically beginning on line 12 on page 25. We are not seeking a reasonableness determination regarding the specific costs. We are seeking a determination that the decision to complete the licensing steps are reasonable.
Q. Are you aware of a specific rule or statutory provision which allows the PSC to give that type of determination?
A. In my experience the PSC can make such determinations as they choose to.
Q. If you are not seeking nuclear cost recovery, why would they issue an opinion on that?
A. They have issued opinion on other decisions that utilities make as to whether or not they are reasonable.
Q. So it is FPL's position due to the Westinghouse bankruptcy, that dramatically changed circumstances and

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chose not to prepare a feasibility study?
MS. CANO: Object to the characterization of the testimony not quite.
THE DEPONENT: In my own words I would say that FPL's view is the increased uncertainty that comes from the events in the first part of 2017, lead us to be more concerned about meeting the schedule and having the information to make a future decision.
That caused us to not seek recovery of costs, contemporaneous recovery of costs in 2017. Because we are not seeking contemporaneous recovery costs, we do not feel a feasibility analysis is required.
BY MR. GREEN:
Q. And it's FPL's position that a feasibility study is not required for cost recovery for 2015 or 2016; is that correct?
A. In 2015 we provided a feasibility analysis. I don't know of any requirement in the statute that has a later filed feasibility analysis to support prudence based on the content of the decision not the outcome.
Q. Does the Westinghouse bankruptcy the only condition that changed?
A. I would say it's the principal. It's the ripple effect that created the uncertainty in the first wave projects which is the principal concern of ours.

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Q. The news regarding Toshiba came out and their financial problems with Westinghouse Nuclear Division came out well before the Westinghouse bankruptcy; is that correct?
A. Define well before.
Q. In 2016, late 2016 there was already news reports that Toshiba's Westinghouse Nuclear Division was suffering oversights, economic problems with the production of the plants in Vogtle and Summer?
A. Well, there has been issues farther back where Westinghouse who wanted to be the EP contractor and not the EPC, bought out CB&I & Stone & Webster as the constructor. That was the first indication that things weren't going as planned.
So we've been watching this move along. Until such a time where the company, Westinghouse Electric Company declared bankruptcy, it's a lot of speculation and it's a lot of media reports.
Q. Had you received any correspondence from Toshiba or Westinghouse prior to their filing bankruptcy which indicated they might be going into bankruptcy?
A. No.
Q. Can you tell me whether or not FPL has entered into any contracts with Toshiba or Toshiba affiliates to support the design and construction of Turkey Point 6 and 7

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units?
A. Yes.
Q. Which contractor is that?
A. We've entered into a contract with Westinghouse at the onset of the development of the Combined Operating License application for them to provide engineering support to our application process. So for those things that the NRC needed specific design information in our Combined Operating License to support, we have a contract with Westinghouse to provide that support.
Q. Do you know whether or not the Westinghouse bankruptcy voids that contract?
A. I don't know, I don't believe it does.
Q. Are there any other contracts you're aware of between FPL and Toshiba or Toshiba affiliates?
A. There is one other related to the Turkey Point 6 and 7 project and that's the forging reservation agreement.
Q. Do you know whether or not the Westinghouse bankruptcy has voided that agreement?
A. I don't believe it has, legal counsel has advised me that it is not.
Q. You're not personally aware of any termination clauses that may have been trigged by the bankruptcy?
A. I'm aware of the contract in whole.
Q. Are you aware if there is a provision that can be

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terminated for bankruptcy?
A. I'm aware that's in the contract. I've also been advised that may not be actionable in a bankruptcy proceeding or there may be, certainly there would be opportunities for the parties to determine what happens with that.
Q. Isn't it automatically trigged if the contract is cancelled with Westinghouse upon a filing of bankruptcy?
A. Again, legal counsel has advised me, no.
Q. Are there currently any other utilities using the AP1000 technology that are in operation right now?
A. There are Chinese power plants that are going through initial testing right now, no, U.S. plants.
Q. Can FPL give an estimate of any construction delays caused by the Toshiba situation and Westinghouse bankruptcy with respect to the plant Turkey Point 6 and 7?
A. No.
Q. Is the Combined Operating License from the NRC contingent upon FPL using the AP1000 technology?
A. Yes.
Q. What would occur with that license if the AP1000 was no longer available for use and construction in Units 6 and 7?
A. That license would not be actionable.
Q. Has FPL suspended any further investment in the

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Turkey Point Units 6 and 7 development until Toshiba Westinghouse situation is resolved?
A. The Nuclear Cost Recovery Clause limits us to only making expenditures related to obtaining or maintaining the licenses. We are not making any investments or expenditures beyond obtaining and maintaining the license.
Q. Was FPL relying on the nuclear cost recovery when it applied for its license with the Nuclear Regulatory Commission?
A. Yes.
Q. Will FPL be able to fund the construction without nuclear cost recovery?
A. That's a speculative answer.
Q. Has FPL advised the Nuclear Regulatory Commission on the Westinghouse bankruptcy and its possible affect on the agreement that are currently in effect with Westinghouse?
A. No.
Q. Is cancellation of the Turkey Point Nuclear Units 6 and 7 an option for FPL?
A. What do you mean by cancellation?
Q. A decision not to build it, is that an option?
A. Certainly.
Q. Is it an option also to convert it over to a natural gas unit instead of nuclear?

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A. That's not what I would consider an option.
Q. Why?
A. There is no conversion. You could build another, you could build a natural gas plant, and it would incur the costs, similar costs of transmission and additional costs of natural gas pipeline, but our planning process shows that is not in the best interest of the customers.
Q. In your testimony of March 1st on page 6, if I could have you turn to page 6?
A. I'm there.
Q. You discuss one of the customer benefits that justify the continued pursuit of nuclear generation. You compare at lines 18 through 20 to a natural gas power plant. Is there any reason you didn't compare it to any other sources of power such as solar?
A. Yes, because we are talking about baseload generation that is available 24 hours a day, 7 days a week. So I'm comparing other baseload generation. Predominantly in Florida since for the last twenty years, natural gas generation has been the baseload generation of choice.
Q. So solar power is not considered a baseload generator?
A. Correct.
Q. Page 7 of the same testimony, lines 12 through 13, you indicate: Fuel emission savings associated with new

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nuclear has decreased relative to prior projections. Can you explain that?

A. Yes. Looking at natural gas price forecasts and CO2 emission compliance forecasts, they have either retained a depressed long term price or the areas where we think those prices may go up have moved out in time. So the net result of that is less benefit to customers.

Q. On the same page, the question is: Was the economic feasibility of Turkey Point 6 and 7 project reevaluated in 2015, your response was, yes, but, no, for 2016 or 2017, correct?

A. Correct. This testimony only talks about 2015 and 2016, but, yes, it's the same answer.

Q. On page 9, lines 16 through 17 the question was: Did FPL continue to assess non-economic factors that impact the feasibility of Turkey Point 6 and 7 project in 2015, 2016. The last sentence is nothing occurred in 2015 or 2016 to indicate the project had become infeasible due to any of these factors. It discussed an approval, financing.

A. That's correct.

Q. When you initially filed this testimony, that was prior to the Westinghouse formally declaring bankruptcy, correct?

A. Correct.

Q. Does that change your opinion in response to this

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question?

A. No. I believe in my main testimony, we already talked about I identified the actions, the results of these recent Westinghouse doesn't make a Turkey Point 6 and 7 project infeasible.

Q. And less feasible?

A. I don't want to get into shades of gray with you?

Q. Well, infeasible would mean it's completely not feasible?

A. Correct.

Q. Would you agree with me though that Westinghouse pulling out of the nuclear power business makes it less feasible to use this design?

A. If that were a result. That is not the result as we sit here today.

Q. But it is one of the reasons that FPL is taking a pause in construction of the project, correct?

A. Yes. The complexity of a nuclear project development in this environment with these factors is high. The Westinghouse bankruptcy has increased that uncertainty.

Q. Do you know the current status of the proceedings with the State Siting Board?

A. I believe we covered that quite extensively.

Q. Is it on the agenda?

A. No, it is not scheduled on an agenda.

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Q. Do you know what the current projected completion date for the Vogtle units is?

A. The most recent project schedule for Vogtle dates back to early 2016 projects 2019/2020 as completion dates.

Q. Has that schedule been updated for 2017?

A. Not that I know of.

Q. Are you or FPL is a member of several nuclear industry groups, correct? This Vogtle unit has been a discussion of those groups, correct?

A. Correct.

Q. There hasn't been any discussion within the last six months of 2017 about a projected completion date for Vogtle 3 and 4?

A. Let me specifically describe what that industry participation does. It does not give us a view into the contracts between Westinghouse, Vogtle or Summer. It doesn't give a view into the detailed scheduling process.

With the Westinghouse bankruptcy, Westinghouse has projects beyond these two nuclear projects. They have fuel contracts, they provide other nuclear components throughout the United States and throughout the world. So until that is resolved and a path forward is negotiated individually with all the various affected projects of the bankruptcy, we won't know the affect on the schedule.

So it's not known or knowable today. And FPL

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certainly does not know what the specific project schedules are being contemplated right now.

Q. Can you identified those industry groups that FPL participates in?

A. It's in my testimony, let me find it.

Q. I think page 22.

A. So line 13, FPL participated in three key industry groups providing value. Design Center Working Group, the AP1000 Owners Group also known as APOG or APOG and the Advanced Nuclear Technology Group. Those are the three groups.

Q. Let me just go through them one by one. The Design Center Group, how do you or FPL participate in that group?

A. FPL participates as part of that working group with Westinghouse and other AP1000 licensees or applicants to be licensees on design changes. These license amendment requests I talked about. They are coordinated as a group. So we all agree on what each of those license amendments need to obtain or maintain so that it's not a new process for each licensing. I'm essentially taking the same license amendment that was approved for Vogtle and saying, I would like this license amendment for my license.

Q. How do members of the group communicate?

A. We have meetings, we have correspondence.

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Q. How often do you meet?
A. As needed, generally monthly or quarterly.
Q. Do you correspond through e-mails or web?
A. E-mail, phone, conference calls.
Q. Has there been any discussion within the last six months among the Design Center Working Group members regarding the Westinghouse bankruptcy?
A. Not that I'm aware of, no.
Q. How do members of APOG communicate?
A. Again, it's a group of AGOG owners or licensees, license applicants that seek to be owners of that design. And we're working through a steering committee, Bill Mayer (phonetic) who is the Nuclear Licensing Director on this project is the current President of APOG, so he is managing in that.

As the Design Center Working Group looks at specifically design and licensing issues, the APOG group looks more specifically at how you own, operate, maintain the units once they are built. So we are looking at training of operators, documentation for procedures, maintenance of different components and equipment.
Q. If FPL has decided to take a pause in the construction of the AP1000, what benefit is it to belong to APOG, if it is not dealing with the actual operation?

MS. CANO: Objection to the characterization to

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pause construction.
BY MR. GREEN:
Q. You're not pausing construction?
A. We've never started. If you want to use the term pre-construction, we can talk about the Nuclear Cost Recovery statute that defines pre-construction or pre-construction as it has been used in recent amendments to that statute talking about pre-construction work.

We are not doing anything beyond that what is necessary to obtain and maintain licenses. Participation in APOG, Design Center Working Group and the Advanced Technology Group are necessary to feed the information that NRC requests of us to process the Combined Operating License.
Q. I thought you just testified that the primary purpose was to train utilities that have already constructed for the operation?
A. No, you misunderstand.
Q. Go ahead, please tell me.
A. The owners group focuses on those activities that will be necessary to operate and maintain the units. Those are contained in our Combined Operating License application and other supporting information that the NRC requests.

It is more efficient for all the groups to make joint decisions, decide these things as a group, and then

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adopt the group's decision. So that we are not hitting the NRC with six different ways to train operators. So it's not the actual training of the operators, it's how we develop the procedures, how we develop the standards to which these operators will be trained and that all licensees agree and communicate in their application materials to the NRC, that we will abide by this process.
Q. Besides the utilities that own the Vogtle and Summer plants, are you aware of any other utilities that have already obtained their Combined Operating License for the AP1000?
A. Duke Energy has obtained a license for Levy, L-E-V-Y. There are other utilities that have obtained, I'm not sure if Harris, I don't think Harris has been obtained yet, that's another Duke Energy project.
Q. Do you follow the Public Service Commission proceedings for Duke Energy's licensing?
A. I do not specifically other than to understand where they are in their process.
Q. The final group that you mentioned, the Advanced Nuclear Technology Group?
A. Right.
Q. What is the purpose of that group?
A. Again, that is formed and organized by EPRI, which is the Electric Power Research Institute. That looks at

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specific technology to support the AP1000 in general, welding technologies, instrumentation technologies, those types of things.
Q. How do members of the group communicate?
A. Similarly different meetings, sub-committees that look at specific topics or specific technologies and meeting minutes are obtained.
Q. Has the Advanced Nuclear Technology Group discussed the impact of Westinghouse's bankruptcy has on the nuclear industry?
A. Not to my knowledge.
Q. Do you serve on any committees or sub-committees?
A. No.
Q. Has FPL commissioned a new forecast on long term carbon prices since the ICF study dated 2012?
A. I'm certain that we have, I'm not personally aware.
Q. Has FPL run any models of Turkey Point 6 and 7 economic consistent with the current gas price forecasts?
A. There is no economic feasibility analysis since 2015?
Q. Has FPL conducted or commissioned any quantitative studies of the option value of Turkey Point 6 and 7?
A. No.
Q. Has FPL conducted a study or run any models that

examine Turkey Point Units 6 and 7 feasibility using post 2016 developments on the costs of solar power?

A. No.

Q. Has FPL quantified the benefits of fuel diversity?

A. No.

Q. Has in FPL's filings and exhibits there is no itemized costs indicating what legal expenses were incurred for is there?

A. Can you be more specific about a time frame?

Q. For 2015 or 2016?

A. They are included in the filings if we made supporting cost recovery for 2015 and 2016.

Q. Has FPL considered an option of buying the AP1000 design from Westinghouse?

A. Not that I'm aware of. I don't know that such option exists.

Q. Do you have a current estimate of what it would cost to build Units 6 and 7?

A. No.

Q. The current timeline what is the earliest you could commence construction on Units 6 and 7?

A. 2020, 2021 and that would not be construction, that would be the first time we could commence actions beyond the licensing.

Q. Your testimony is you're waiting on the first

phase of the units that Vogtle and Summer, correct?

A. Yes. A great deal that goes into the development of the cost estimate for such a large capital project is dependent on the materials, the labor costs, the execution timeline for each component of the construction.

We believe that the best and most relevant information for that will be the result of a near term review of the finished AP1000 project in the U.S.

Q. So you would actually wait a year after they become operational, do an analysis before they commence pre-construction?

A. I certainly didn't say that. Again, we currently as part of our activities and involvement in these industry groups is learning what we can about costs, schedule and execution and pulling those lessons into our expectations for the future. Similar to what we did when we did initial assessments in the 2015 and 2016. Those were specific activities that can't be pulled from the AP1000 projects in Georgia and South Carolina because they are specific to the FPL site.

So we are aggravating information that will help us have that better cost estimate. As that information becomes available, as we drive towards that, we will be able to put that together and develop that relevant and informed feasibility analysis.

Q. Will all of FPL's plans for pre-construction and construction are dependent on completion of the first wave is that correct?

A. Essentially that's how we have set the project up, to be the first of the second wave.

Q. There is not an estimate of the amount of time at this point to build Units 6 and 7?

A. The time frame for construction is approximately ten years from initial site preparation to operation.

Q. Will FPL seek to recover costs incurred in litigating the Siting Board dispute?

A. Yes, those are costs associated with obtaining and maintaining the license.

Q. Will FPL also seek to declare costs incurred or recover costs incurred in hiring lobbyists or legislation that would essentially repeal the holding of the Third DCA?

A. No.

Q. Does FPL intend to construct transmission lines that will be associated with Units 6 and 7 prior to obtaining the Combined Operating License?

A. No.

Q. After the pause is completed, does FPL intend to retroactively recover for costs that were expended in maintaining the license?

A. I believe that's a decision for the future, that's

why we have asked to defer cost recovery.

Q. Do you know if that is provided by the Florida Statute?

A. If you're asking for a legal opinion, I don't know. If you're asking for do I believe FPL has a right to ask the Public Service Commission to defer, yes, I do.

MR. GREEN: I have no further questions, thank you.

MR. CAVROS: Hi, George Cavros, I would like to go next.

MS. CANO: George, this is Jessica, would you mind if we take a brief break before continuing?

MR. CAVROS: Not at all.

MS. CANO: Okay, does five minutes work for everyone or does anyone want more than that?

THE DEPONENT: Five is fine.

MR. BERNIER: We will be back in five.

(A brief recess.)

DIRECT EXAMINATION

BY MR. CAVROS:

Q. Back on the record. Good afternoon, Mr. Scroggs.

A. Good afternoon.

Q. I am George Cavros with Southern Alliance for Clean Energy. If for any reason you can't hear me or want to restate my questions, please feel free to do so. Since

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we are on the phone, if you could speak up a bit in answering the questions, I would appreciate it. At times I had a little bit of difficulty in understanding your answer?

A. Okay.

Q. My first question is a clarifying question. You said a reasonableness determination under the nuclear cost recovery statute; is that right?

A. Specifically as stated in my testimony on page 25, we went over a couple times, right. We are not seeking reasonableness determination for 2017 costs. We are seeking reasonableness and prudence determination for 2015 and 2016.

Q. Let me clarify. I thought you were seeking a reasonableness determination of costs going forward?

A. Again, if you look a line 12 on page 25. It does require a little bit of parching here. We are not seeking a reasonableness determination from the Commission regarding the costs we are spending in 2017 or of the specific costs in the future.

We are seeking a determination a determination that our decision to move forward, to complete the licensing steps is reasonable.

We, additionally, are seeking to defer recovery of those costs to a future date. The reasonableness determination would be made at a future time.

Q. Can you, and maybe this is a legal question, but

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can you help be understand the difference between a reasonableness determination in moving forward with a COL and a reasonableness determination in the costs as it flows from going forward with a COL?

A. Reasonableness is individual costs as it's been conducted in the cost recovery proceeding has certain requirements. We specify specifically the individual costs that we are seeking and a reasonableness determination for it.

That's not what we are doing here for 2017 and the future. What we are doing is saying: Here is a decision we have made given certain circumstances in front of us. We are going to complete the licensing. We are not going to request recovery of those costs contemporaneous. We are seeking to defer that, those costs to a future decision point.

All we are asking is that the Public Service Commission indicate whether they think that is a reasonable decision.

Q. Would you agree that it's been Commission practice to approve costs as reasonable before a regulated entity, a utility can come back and for previous determination on those costs?

A. If they are seeking to recover them contemporaneous to the occurrence, yes.

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Q. So then that is why FPL it has not asked for contemporaneous recovery?

A. That's correct, the distinction.

Q. Then it is FPL's position that if it did ask for contemporaneous recovery that those costs, specific costs would have to be approved as reasonable -- well, let me step back. We deferred the issue last year in 2016 where if there were monies spent and maybe I'll get to that in a minute.

But, let me step back. There was no reasonable determination for costs incurred in 2017, correct?

A. That's correct.

Q. So in your testimony and in your position, you are asking -- how are you asking the Commission to treat those costs in 2017?

A. Simply defer them for future review.

Q. Okay, I guess what I'm struggling with, there was no reasonable determination made in 2016, costs have already been incurred and your asking the Commission to provide a reasonableness determination in a backwards fashion. So I'm struggling with that, if you could help me explain that. How do you explain that?

A. We are not contemporaneously recovering costs being incurred in 2017, because the decision was deferred in 2016. We are simply asking them to continue that deferral.

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The 2016 costs were determined to be reasonable in 2015 docket. So we think we made a fairly clean break of it here.

Q. And those costs would be deferred until the time you are ready to pursue pre-construction beyond the COL; is that correct?

A. That is one outcome.

Q. I guess my question is: You would seek recovery of those costs prior to construction or pre-construction in this case; is that correct?

A. Again, that is assuming a certain scenario. That would be one scenario. There is decisions to be made in the future based on circumstances yet to unfold.

Q. Okay. Another scenario is that FPL could incur these costs up to 2020, look at the first wave of projects, look at market conditions, determine if it's no longer reasonable to pursue with the projects or go forward with the projects. I guess I'm trying to understand the difference scenario on how this might play out.

If FPL decides to abandon the project in 2021, would they seek recover of these costs? Is that one possible scenario?

MS. CANO: Objection, calls for speculation.

THE DEPONENT: Again, I would say that is certainly one scenario. I don't know how plausible it is. It would depend on circumstances that occurred

between now and then.
BY MR. CAVROS:
Q. I guess I just want to go back to this issue of a reasonableness determination on costs and a reasonableness determination on moving forward and pursuing the COL. Let me back up and maybe have you put it in your words. You're not asking for a reasonableness determination of costs. You're asking the Commission for a reasonableness determination to do what?
A. Refer you to lines 14 through 16 of page 25. Seeking a Commission determination that FPL's decision to complete these licensing steps and maintain compliance with approvals received is reasonable.
Q. And it's FPL's contention that the Commission can grant this type of reasonable determination if not seeking contemporaneous recovery, correct?
A. Yes. I wouldn't say that's an entering argument. It's not uncommon in the history of the Public Service Commission, utilities that have had different circumstances in front of them. They have gone to the utility commission to say, hey, we are going to do "X" and do you think that's a reasonable thing to do. The Commission has given their view. This seems appropriate at this point in time to obtain that Commission's point of view on that.
Q. Doesn't the Commission historically do that though

when they are presented a set of costs?
A. Again, for contemporaneous recovery, that was what we believed necessary to ask for and receive contemporaneous recovery. We are not doing that in this case.
Q. Will FPL pursue the COL regardless of whether the Commission grants a reasonableness determination in this docket?
A. Again, I cannot speak for FPL executive decision makers.
Q. Mr. Scroggs, I'm not asking you to speak for FPL executives. I imagine the conversation has taken place at FPL, unless you tell me it has not. I'm just asking for your understanding of that?
A. My understanding can you specify what that is and I'm making sure I share my understanding of.
Q. Sure. Your understanding of whether FPL will continue its current pursuit of the COL, if the Commission does not grant a reasonableness determination that it seeks in this docket?
A. I don't know if FPL will, to my knowledge no such decision has been made, because we haven't received feedback that we are asking for from the Commission.
We certainly believe it is the right thing to do. We would hope that the Commission would indicate they agree with that as well.

Because we are deferring contemporaneous recovery, it's very likely we may be there before any decision gets verbalized. So it's not a dating issue for FPL as far as I know.
Q. I apologize for staying on this subject for another minute or two, but I'm having a tough time wrapping my hands around the reasonable determination for the action, as opposed to a reasonable determination for the costs.
Assuming FPL wants to recover the costs associated with a reasonable determination by the Commission in this docket, will FPL come back to the Commission and provide evidence that the costs were reasonable when they were made?
A. Whenever FPL would come back and seek recovery of costs, we would be required to provide evidence that those costs were reasonable, yes.
Q. Okay, apparently it is my lack of understanding. I assumed that if the Commission gave a reasonableness determination and then all the company had to do was provide evidence that it was prudent. But in this case, you're saying that the company, because it is not seeking contemporaneous recovery, the Company would have to provide evidence that both the costs are reasonable and prudent?
A. I think you are mixing definitions of reasonable and prudence there. Prudence is a review of decisions made to determine if they were made with the appropriate

information that was or should have been available.
Reasonableness is something that is a distinction about something that is yet to occur. Is it reasonable, where we stand today to make this decision.
When we would go before the Commission at some future time, that Commission would be presented with the specific costs and the evidence to support that they were reasonable and the decisions that supported those costs were prudently made.
It would seem to me that Commission, whatever the makeup of that Commission is in the future, would be interested to understand if the Commission at the time of the decision thought this was a reasonable thing to do. It's not binding on a future Commission, but we think it is an important indicator of whether or not the Commission supports FPL's decision to proceed in this manner.
Q. Okay, that's helpful. Your testimony, have you provided any updated fuel costs?
A. No, that's not normally something that is included in my testimony.
Q. That would typically be included in a feasibility study; is that correct?
A. Specifically in the testimony of the resource assessment and planning witness.
Q. And there is no testimony here regarding an

environmental forecast; is that correct?
A. Correct, same situation.
Q. Also the same situation with break even costs?
A. Break even costs is an analytical result of that process.
Q. And same with capital costs?
A. Capital costs, we have provided a cost estimate range. It's an extrapolation of the existing cost estimate range that we began the process with, based on what we know from the other AP1000 projects, the high end of the cost estimate range bounds those costs.
Q. Can you tell me where those costs are provided?
A. In the May testimony, page 10 a little bird is telling me. It's the Q & A beginning at line 12.
Q. What page is that, I'm sorry?
A. Page 10 talks about the cost estimate range adjusted to accommodate the 2030/2031 COC. It had a high end of $21.87 billion. I think it's in one of the schedules more specifically, TOR 7 provides the full cost estimate, low and high end of the range and the annual expenditures.
Q. That cost estimate was derived by simply adding incremental adjustments to the 2016?
A. Yes. The 2015 and 2016 values were based on a 2027 and 2028 COC. As was mentioned we believe that the push in the schedule for Vogtle and Summer means an

additional four years would be added. So we took the same cost estimate and escalated it 2.5 percent per year for an additional four years.
Q. Okay. And I want to touch on very quickly fuel costs and the projected fuel savings for customers over the life of the Turkey Point 6 and 7 units. I have a copy of the 2005 (sic) testimony by Richard Brown and I apologize I have not provided that to you --
A. -- 2005?
Q. Yeah, it has a sixty year life and it has a projected fuel savings to customers of 101 billion?
A. I would suggest maybe take a look at that again, Mr. Brown provided testimony in 2015.
Q. I apologize 2015.
A. Okay, thank you, sorry, I interrupted you.
Q. That's quite all right. Is it safe to say that as we are here today in 2017, that projected fuel savings for FPL customers based on a sixty year life is less than it was 2015?
A. If it were over the same time periods, the same commercial operation dates, I would agree in general, the cost savings, fuel savings would be lower. But because the COC dates are now four years later, and therefore they capture a sixty year term would capture four additional years farther out, I wouldn't be able to tell you whether or

not your statement holds.
Q. Okay, well, then let me just go to a forecasted natural gas costs. You provided forecasted natural gas costs in 2015. Is it reasonable and those costs went out to 2080, is it reasonable sitting here today in 2017 that those forecasted natural gas costs would be less than they were in 2015?
A. It's not my area of expertise, it's not my knowledge, it's not in my testimony.
Q. You had testified, had you not, that there were certain market conditions that were not decrease the value nuclear. One of them was natural gas costs, the other was compliance costs?
A. I think I used the term, maintain economic pressure which got a lot of discussion. If you could point me to phrasing I could help explain that.
Q. If I could point you to page 22 starting on line 22. I can read it into the record if you like: Additionally, point the project came about in a period of increased natural gas price forecasts and expectations for earlier and increasing emissions compliance costs. While generally beneficial for FPL's customers, the combination of historically low natural gas price forecasts for the near term, combined with delays in emission compliance cost implementation, reduce the economic benefits that could be

expected from the project.
A. Yes.
Q. And my question is, I would assume you did some level of research to reach that conclusion?
A. Recognize that this talks about additionally the project came about in 2006. Gas price in 2006 I think reached $11.65 MMBTU at the peak. So, relative to a $12.00 gas price, yes. The price of natural gas and emissions costs are historically low and historically deferred. So, in context we are talking about when we entered into this project versus today, not versus 2015.
Q. When could FPL make the decision to construct the plant?
A. Once we have a full set, it will be a staged decision. In order for us to make a construction decision and provide all the information necessary for the Commission to agree with that decision, we would have to conduct significant amount of contract negotiation and pre-construction activities, which are currently not authorized. So we would need to ask the Commission to allow us to go to the pre-construction phase to develop the data that would then allow us to go to construction.
The way we are looking at it is that, upon completion of the first wave plants, we will have a very relevant cost estimate for the nuclear side of the project,

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with a construction timeline. We can use that information coupled with our site specific information to create what we think it would cost for us to construct the Turkey Point 6 and 7 project.

None of that happens until the first wave projects are complete. With that information we can go to the Commission and ask for permission, assuming the answer is, yeah, it still looks good for customers, we can go to the Commission and ask for permission to go to pre-construction, or we say, you know, natural gas is still low, solar is providing a good amount of megawatts, natural gas plants are becoming more efficient. We can defer this decision farther down the road and that's what that optionality in the license gives us, is the ability to strike when the iron is hot or not strike if it is not hot.

Q. Well, let's dig into that a little bit more. In your testimony, if I'm not mistaken, you anticipate the amount of deferral for 2017 will be 25 million dollars; is that correct?

A. Correct.

Q. And for future years it could be about ten, five to ten million dollars less in the out years?

A. Ten to fifteen million dollars in the early portions following COL as we are accommodating the license amendments and decreasing down to about four to five million

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a year.

Q. So in 2018 we could be looking at maybe 15 million?

A. Correct.

Q. Then 2019 ten million?

A. Correct.

Q. Then 2020 and beyond maybe five million?

A. That's correct.

Q. In theory once you have you COL, you've got twenty years to recover under the statute; is that correct?

MS. CANO: Objection, calls for a legal opinion.

BY MR. CAVROS:

Q. Mr. Scroggs, you know the statute pretty well, I'm not asking for a legal opinion?

A. The statute prescribes specific time periods and commitments on the part of the applicant if they don't go to construction.

Q. Well, my reading of it in any event was once you get your combined operating license, you have ten years to start pre-construction or at least you have to go back to the Commission and show them you still have intent to build?

A. Yes, that's correct.

Q. So you could go to 2026 before you decide to build; is that your understanding?

A. I'll leave that to your math.

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Q. I'm just starting in 2017 and adding ten years. And that decision, correct me if I'm wrong, is based on two factors. Number one, the first wave of reactors and how they do or if they are even built. Number two, the market conditions, primarily the costs of natural gas and CO2 compliance are favorable. Is that accurate?

MS. CANO: George, you referred to "that" decision, could you clarify are you talking construction or pre-construction?

BY MR. CAVROS:

Q. Sure. The statutes allow a COL is a pre-construction activity, correct, pursing a COL?

A. It's a pre-construction cost per the statute.

Q. Are there other pre-construction costs that FPL has not incurred that it could prior to obtaining a COL?

A. It's my understanding that the 2004 amendment to the statute restricts FPL or any applicants expenditures to those that are necessary to obtain or maintain licenses and approvals.

That the next step would be classified as pre-construction work, not capital P pre-construction but pre-construction work. So any work we would do with a contractor to develop a bid and contract that would be necessary to understand what it's going to cost to construct, is not necessary to maintain the licenses. So it

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would be in my view viewed as pre-construction work and require the approval of the Commission to incur costs associated with that activity.

Q. And it is FPL's position then that at that time, they would provide, in fact I think they would have to provide a feasibility study to get pre-construction work approved; isn't that correct?

A. Again, that's a legal interpretation I'd rather not jump into. I think just in terms of making a decision, we would have to demonstrate that it is the right decision and an economic analysis would be reasonable.

Q. Okay. How long would the remaining pre-construction and construction activities take once FPL gets its combined operating license?

A. Again, I assume you're under a scenario where FPL would obtain its license and move directly into pre-construction and construction.

Q. Correct.

A. Under that assumption, our schedule indicates it takes about ten years.

Q. Will FPL move to, will FPL once it obtains its COL, will it move for Commission approval for pre-construction work prior to having the first wave nuclear project turnout?

A. Again, that's a future decision. At present

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that's what we are planning. We want to see the results of that outcome and translate it into what that would mean for cost and schedule for the Turkey Point 6 and 7 project before we would make an internal decision to proceed or even request authorization from the Commission to proceed.

Q. And in 2015 the company suggested a sixty year life was reasonable. Is that the company's position still in terms of economic analysis?

A. We provided in 2015 I think two different feasibility scenarios. One assuming a 40 year life and one assuming a 60 year life. It's reasonable to assume sixty year life as the current existing plants are planned to operate to 60 years and are approaching 40 years, or 50 years now.

Q. Okay. I'm just trying to get a sense of how long the process plays out if FPL were to get its COL and commence construction in 2021 and there is a 60 year life and it takes ten years to build, it wouldn't be in service until 2031 and the 60 year life that would take us to 2091. I guess there is no question there, so I apologize, I was just thinking out loud.

A. Okay. Recognize at the 40 year time frame there would be, prior to proceeding into the 40 to 60 year operating period, there would be another NRC safety and environmental review and license extension required.

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Q. Has FPL done any load projections, recent load projections beyond 2040?

A. I'm not aware whether we have or not. That is not normally part of our ten year site planning window.

Q. Have you done those projections as part of any internal analysis regarding the Turkey Point project?

A. No.

Q. Has the company done any internal analysis regarding the feasibility of Turkey Point 6 and 7 above and beyond what was submitted to the Commission in 2015? Let me rephrase that. Has the company done any internal analysis on the feasibility of Turkey Point 6 and 7 in 2016 or 2017?

A. No, not quantitative. We have done and continue to do a review of qualitative factors, that's included in the testimony.

Q. Just to be clear, you have done qualitative analysis but not quantitative?

A. Yes.

Q. Okay. You were asked recently how FPL would address the Third DCA ruling. Are you familiar with Senate Bill 1048?

A. Not by number, I don't know what that is.

Q. There was an attempt, appeared to be an attempt to address the Third DCA ruling through legislation in this years legislative session. Do you anticipate that there might be some similar legislative action this year?

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A. I am not that person at Florida Power & Light. I cannot give you any answer to that.

Q. Just a couple more questions and I think I'm almost done here. I don't recall if this was asked before or not. Has FPL had any communication with Bechtel Power Corporation about being the constructor?

A. We've had no formal discussions with any entity about fulfilling the role of constructor.

Q. Can you speak to any informal discussions?

A. Bechtel was the contractor that developed the COL and continues to support the COL. So I see Bechtel engineers and managers frequently. It's just a topic of conversation. It is not sanctioned by the company, we are not developing a plan, nor have we asked any contractor to provide any information that would support a plan.

Q. Understood. Black and Peach any informal communications with them regarding construction?

A. I've talked to different managers and executives at Black & Veatch about other projects I'm involved in an occasionally there is questions about Turkey Point 6 and 7.

Q. How about Fluor Corporation?

A. I've had no informal or formal conversations with Fluor.

Q. Do you know if they are a creditor of Westinghouse

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in the current bankruptcy proceedings?

A. There is a whole host of people who are creditors of Westinghouse. It would not surprise me, but I don't have any specific knowledge.

Q. And lastly the Washington Group?

A. Again, I have not had any specific informal or formal conversations with Washington Group.

MR. CAVROS: Give me a second, I think I might be done. Thank you, that's all I have.

MS. CHRISTENSEN: Staff, do you have any questions because I think cross-noticed as well.

MS. MAPP: Yes, staff cross-noticed for deposition. However, I believe the other parties have covered the ground that staff would have addressed and we have no further questions at this time.

MS. CHRISTENSEN: Is the witness going to read or waive?

MS. CANO: We will be reading, but before we get to that point, I have a couple of follow-up questions.

CROSS EXAMINATION.

BY MS. CANO:

Q. Mr. Scroggs, Ms. Christensen asked you some questions about how FPL intends to account for project costs during the pause and also asked you questions about cost recovery for non-nuclear power plant projects should those

projects not be completed. Are you an accountant for FPL?
A. No, I am not.
Q. Are you the only witness appearing on this docket on behalf of FPL?
A. I am not.
Q. Who else is appearing as a witness?
A. Jennifer Grant-Keene.
Q. What is her role?
A. She heads the nuclear accounting group.
Q. Mr. Green on behalf of the City of Miami asked you whether FPL relied on nuclear cost recovery when applying for its license before the NRC and you answered yes. I couldn't interject quickly enough with a vagueness objection there, what did you have in mind when you responded in that manner?
A. The support of the nuclear cost recovery statute was a factor in FPL deciding to move forward with a new nuclear project as we believe it will help obtain financing and it does provide benefits to our customers by way it manages interest during construction.
Q. Thank you. Then lastly in responding to a question from Mr. Cavros on behalf of SACE, you referred to some amendments to the nuclear cost recovery statute, that limits activities and/or cost recovery at certain phases. In doing so I believe you referred to them as 2004

amendments?
A. 2014, I believe.
Q. Thank you, that's all the questions I have.
MS. CHRISTENSEN: I think we are done now. I think you said already that you were planning on reading.
MS. CANO: Yes.
MS. CHRISTENSEN: We will, of course, be wanting a copy of this.
MR. ALBAN: Just to confirm none of this needs to be marked confidential, correct?
MS. CANO: That's correct.
MR. GREEN: What do you want to do with the exhibits?
MS. CHRISTENSEN: Are we done?
MS. CANO: We are still discussing the exhibits.
(Discussion off the record.)
MS. CANO: So Exhibits Nos. 1 thru 6 retained by attorneys. And are you simply withdrawing No. 7 since you already have it?
MR. GREEN: Yes.
(City's Exhibit No. 7 withdrawn.)
MS. CANO: That would be great thank you. Now I think we are done, thank you.
(Thereupon the deposition was concluded.)

CERTIFICATE
STATE OF FLORIDA
COUNTY OF PALM BEACH

I, SUSAN SUDDARTH, the undersigned authority, hereby certify that STEVEN D. SCROGGS personally appeared before me and was duly sworn or affirmed by me.

I, FURTHER CERTIFY that I was authorized to and did stenographically report the foregoing deposition; and that this transcript, Pages 1 thru 121 inclusive is a true and correct record of the testimony given by said witness at the time, date and place stated herein.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative, employee, attorney or counsel connected with this action, nor am I financially interested in this action.

WITNESS MY HAND AND SEAL in the City of Juno Beach, County of Palm Beach, Florida on this 4th day of June 2017.

_____
Susan Suddarth, Notary Public
State of Florida at Large
Commission #GG019907
Expires October 2, 2020

CORRECTION SHEET
IN RE: Nuclear Cost Recovery Clause
DOCKET NO. 170009-EI
DEPOSITION OF: Steven D. Scroggs
DATE TAKEN: June 1, 2017

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Page No.	Line No.	Change & Reason

Under penalties of perjury, I declare that I have read my deposition and that it is true and correct subject to any changes in form or substance entered here.
Date _____ Signature _____
Please forward the original signed errata sheet to this office so that copies may be distributed to all parties.

E

G

Q

Schedule 3.1
History of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2005	22,361	264	22,097	0	902	895	600	611	20,858
2006	21,819	256	21,563	0	928	948	635	640	20,256
2007	21,962	261	21,701	0	952	982	716	683	20,295
2008	21,060	181	20,879	0	966	1,042	760	706	19,334
2009	22,351	249	22,102	0	981	1,097	811	732	20,558
2010	22,256	419	21,837	0	990	1,181	815	758	20,451
2011	21,619	427	21,192	0	1,000	1,281	821	781	19,798
2012	21,440	431	21,009	0	1,013	1,351	833	810	19,594
2013	21,576	396	21,180	0	1,025	1,394	833	827	19,718
2014	22,935	955	21,980	0	1,010	1,444	843	840	21,082

Historical Values (2005 - 2014):

Col. (2) - Col. (4) are actual values for historical Summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.

Col. (5) - Col. (9) represent actual DSM capabilities starting from January 1988 and are annual (12-month) values except for 2014 values which are through August.

Col. (10) represents a HYPOTHETICAL "Net Firm Demand" as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(8).

Schedule 3.1
Forecast of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
August of Year	Total	Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
2015	23,286	1,231	22,054	0	1,020	46	862	25	21,334
2016	23,778	1,240	22,538	0	1,030	60	873	37	21,778
2017	24,252	1,186	23,066	0	1,040	71	885	50	22,206
2018	24,648	1,145	23,502	0	1,051	82	897	63	22,555
2019	25,045	1,149	23,896	0	1,061	94	909	77	22,904
2020	25,369	1,150	24,219	0	1,071	106	920	91	23,181
2021	25,497	953	24,544	0	1,082	118	932	106	23,260
2022	25,833	957	24,875	0	1,092	131	944	121	23,545
2023	26,286	965	25,321	0	1,102	144	956	136	23,948
2024	26,771	972	25,798	0	1,113	157	968	152	24,381

Projected Values (2015 - 2024):

Col. (2) - Col. (4) represent FPL's forecasted peak and does not include incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected August values.

Col. (8) represents FPL's Business On Call, CDR, CILC, and Curtailable programs/rates.

Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include MW values of load management from Lee County and FKEC.

Schedule 3.2
History of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2005	18,108	225	17,883	0	816	583	542	233	16,751
2006	19,683	225	19,458	0	823	600	550	240	18,311
2007	16,815	223	16,592	0	846	620	577	249	15,392
2008	18,055	163	17,892	0	868	644	636	279	16,551
2009	20,081	207	19,874	0	881	666	676	285	18,524
2010	24,346	500	23,846	0	895	687	721	291	22,730
2011	21,126	383	20,743	0	903	717	723	303	19,501
2012	17,934	382	17,552	0	856	755	722	314	16,356
2013	15,931	348	15,583	0	843	781	567	326	14,521
2014	17,500	890	16,610	0	768	805	590	337	16,142

Historical Values (2005 - 2014):

Col. (2) - Col. (4) are actual values for historical Winter peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand. For year 2011, the actual peaked occurred in December of 2010.

Col. (5) - Col. (9) for 2005 through 2014 represent actual DSM capabilities starting from January 1988 and are annual (12-month) values.

Col. (10) represents a HYPOTHETICAL "Net Firm Demand" as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(8).

Schedule 3.2
Forecast of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
January of Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
2015	21,136	1,195	19,941		841	12	593	5	19,684
2016	21,369	1,206	20,163		850	24	598	11	19,886
2017	21,485	1,151	20,334		858	28	603	20	19,976
2018	21,598	1,114	20,484		867	31	609	30	20,061
2019	21,792	1,125	20,667		875	35	614	40	20,227
2020	21,965	1,133	20,833		883	40	620	50	20,372
2021	22,096	1,141	20,956		892	44	625	61	20,475
2022	22,026	948	21,078		900	49	631	72	20,374
2023	22,202	956	21,246		909	53	636	83	20,520
2024	22,408	965	21,443		917	59	642	95	20,695

Projected Values (2015 - 2024):

Col. (2) - Col. (4) represent FPL's forecasted peak and does not include incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected January values.

Col. (8) represents FPL's Business On Call, CDR, CILC, and Curtailable programs/rates.

Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include MW values of load management from Lee County and FKEC.

Schedule 3.3
History of Annual Net Energy for Load (GWh)
(All values are "at the generator" values except for Col (8))

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Net Energy For Load without DSM GWh	Residential Conservation GWh	C/I Conservation GWh	**Actual** Net Energy For Load GWh	Sales for Resale GWh	Utility Use & Losses GWh	Total Billed Retail Energy Sales (GWh)	Load Factor(%)
2005	115,065	1,970	1,793	111,301	1,506	7,498	102,296	56.8%
2006	117,116	2,078	1,901	113,137	1,569	7,909	103,659	59.2%
2007	118,518	2,138	2,066	114,315	1,499	7,401	105,415	59.4%
2008	115,379	2,249	2,126	111,004	993	7,092	102,919	60.0%
2009	115,844	2,345	2,196	111,303	1,155	7,394	102,755	56.8%
2010	119,220	2,487	2,259	114,475	2,049	7,870	104,557	58.7%
2011	117,460	2,683	2,324	112,454	2,176	6,950	103,327	59.4%
2012	116,083	2,823	2,394	110,866	2,237	6,403	102,226	58.9%
2013	117,087	2,962	2,469	111,655	2,158	6,713	102,784	59.1%
2014	121,621	3,125	2,529	115,968	5,375	6,204	104,389	57.7%

Historical Values (2005 - 2014):

Col. (2) represents derived "Total Net Energy For Load w/o DSM". The values are calculated using the formula: Col. (2) = Col. (3) + Col. (4) + Col. (5).

Col. (3) & Col. (4) are DSM values starting in January 1988 and are annual (12-month) values. Col. (3) and Col. (4) for 2014 are "estimated actuals" and are also annual (12-month) values. The values represent the total GWh reductions experienced each year .

Col. (5) is the actual Net Energy for Load (NEL) for years 2005 - 2014.

Col. (8) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (8) = Col. (5) - Col. (6) - Col. (7). These values are at the mete

Col. (9) is calculated using Col. (5) from this page and Col. (2), "Total", from Schedule 3.1 using the formula: Col. (9) = ((Col. (5)*1000) / ((Col. (2) * 876
Adjustments are made for leap years.

Schedule 3.3
Forecast of Annual Net Energy for Load (GWh)
(All values are "at the generator"values except for Col (8))

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	**Forecasted** Net Energy For Load without DSM GWh	Residential Conservation GWh	C/I Conservation GWh	Net Energy For Load Adjusted for DSM GWh	Sales for Resale GWh	Utility Use & Losses GWh	**Forecasted** Total Billed Retail Energy Sales w/o DSM GWh	Load Factor(%)
2015	119,713	58	51	119,604	6,021	6,595	107,096	58.7%
2016	122,407	98	88	122,221	6,126	6,727	109,554	58.6%
2017	123,946	121	112	123,713	5,882	6,788	111,275	58.3%
2018	125,433	144	137	125,151	5,629	6,852	112,952	58.1%
2019	127,070	168	164	126,738	5,659	6,950	114,461	57.9%
2020	128,851	192	192	128,467	5,700	7,036	116,115	57.8%
2021	129,237	218	221	128,798	5,256	7,011	116,971	57.9%
2022	130,077	244	252	129,581	4,955	7,097	118,025	57.5%
2023	131,495	271	284	130,940	5,013	7,176	119,307	57.1%
2024	133,276	299	318	132,659	5,073	7,271	120,931	56.7%

Projected Values (2015 - 2024):

Col. (2) represents Forecasted Net Energy for Load and does not include incremental DSM from 2015 - on. The Col. (2) values are extracted from Schedule 2.3, Col(19). The effects of conservation implemented prior to September 2014 are incorporated into the load forecast values in Col. (2).

Col. (3) & Col. (4) are forecasted values of the reduction on sales from incremental conservation from Jan 2015 - on and are mid-year (6-month) values reflecting DSM signups occurring evenly thoughout each year.

Col. (5) is the forecasted Net Energy for Load (NEL) after adjusting for impacts of incremental DSM for years 2015 - 2024 using the formula:
Col. (5) = Col. (2) - Col. (3) - Col. (4)

Col. (8) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (8) = Col. (2) - Col. (6) - Col. (7).
These values are at the meter.

Col. (9) is calculated using Col. (2) from this page and Col. (2), "Total", from Schedule 3.1. Col. (9) = ((Col. (2)*1000) / ((Col. (2) * 8760)
Adjustments are made for leap years.

Schedule 3.1
History of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2007	21,962	261	21,701	0	952	982	716	683	20,295
2008	21,060	181	20,879	0	966	1,042	760	706	19,334
2009	22,351	249	22,102	0	981	1,097	811	732	20,558
2010	22,256	419	21,837	0	990	1,181	815	758	20,451
2011	21,619	427	21,192	0	1,000	1,281	821	781	19,798
2012	21,440	431	21,009	0	1,013	1,351	833	810	19,594
2013	21,576	396	21,180	0	1,025	1,417	833	839	19,718
2014	22,935	955	21,980	0	1,010	1,494	843	866	21,082
2015	22,959	1,303	21,656	0	878	1,523	826	873	21,255
2016	23,858	1,167	22,691	0	882	1,548	836	888	22,140

Historical Values (2007 - 2016):

Col. (2) - Col. (4) are actual values for historical Summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.

Col. (5) - Col. (9) represent actual DSM capabilities starting from January 1988 and are annual (12-month) values except for 2016 values which are through August.

Col. (6) value for 2015 and 2016 primarily reflect a short-term hardware communications issue that is projected to be resolved by the end of 2017.

Col. (10) represents a hypothetical "Net Firm Demand" as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(8).

Schedule 3.1
Forecast of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
August of Year	Total	Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
2017	24,009	1,408	22,600	0	952	12	869	18	22,158
2018	24,297	1,417	22,880	0	970	24	881	32	22,390
2019	24,496	1,381	23,116	0	977	35	892	45	22,547
2020	24,605	1,326	23,279	0	984	47	903	60	22,611
2021	24,717	1,132	23,585	0	990	59	915	74	22,679
2022	24,967	1,125	23,841	0	996	72	926	89	22,884
2023	25,338	1,131	24,207	0	1,003	85	937	105	23,208
2024	25,756	1,118	24,637	0	1,010	99	947	121	23,579
2025	26,137	1,098	25,040	0	1,016	112	958	137	23,914
2026	26,552	1,100	25,452	0	1,023	126	969	153	24,281

Projected Values (2017 - 2026):

Col. (2) - Col. (4) represent FPL's forecasted peak and does not include incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected August values.

Col. (8) represents FPL's Business On Call, CDR, CILC, and Curtailable programs/rates.

Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include MW values of load management from Lee County and FKEC whose loads FPL serves.

Schedule 3.2
History of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2007	16,815	223	16,592	0	846	620	577	249	15,392
2008	18,055	163	17,892	0	868	644	636	279	16,551
2009	20,081	207	19,874	0	881	666	676	285	18,524
2010	24,346	500	23,846	0	895	687	721	291	22,730
2011	21,126	383	20,743	0	903	717	723	303	19,501
2012	17,934	382	17,552	0	856	755	722	314	16,356
2013	15,931	348	15,583	0	843	781	567	326	14,521
2014	17,500	890	16,610	0	828	805	590	337	16,083
2015	19,718	1,329	18,389	0	822	835	551	346	18,345
2016	16,941	887	16,054	0	742	858	570	352	15,629

Historical Values (2007 - 2016):

Col. (2) - Col. (4) are actual values for historical Winter peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Der For year 2011, the actual winter peak occurred in December of 2010.

Col. (5) - Col. (9) for 2006 through 2016 represent actual DSM capabilities starting from January 1988 and are annual (12-month) values.

Col. (6) value for 2015 and 2016 primarily reflect a short-term hardware communications issue that is projected to be resolved by the end of 2

Col. (10) represents a hypothetical "Net Firm Demand" as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(8).

Schedule 3.2
Forecast of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
January of Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
2017	20,361	1,211	19,151	0	777	4	599	10	18,971
2018	20,673	1,216	19,456	0	806	7	605	19	19,236
2019	20,828	1,177	19,651	0	812	11	610	29	19,366
2020	20,978	1,120	19,857	0	817	15	615	38	19,493
2021	21,172	1,123	20,049	0	822	20	621	49	19,660
2022	21,113	913	20,200	0	827	24	626	59	19,577
2023	21,289	916	20,373	0	833	29	632	71	19,724
2024	21,452	900	20,552	0	838	35	637	82	19,860
2025	21,591	876	20,715	0	844	40	643	94	19,970
2026	21,773	875	20,898	0	849	46	648	106	20,124

Projected Values (2017 - 2026):

Col. (2) - Col. (4) represent FPL's forecasted peak and does not include incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected Jan values.

Col. (8) represents FPL's Business On Call, CDR, CILC, and Curtailable programs/rates.

Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include MW values of load management from Lee County and FKEC whose loads FPL

Schedule 3.3
History of Annual Net Energy for Load (GWh)
(All values are "at the generator" values except for Col (8))

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Net Energy For Load without DSM GWh	Residential Conservation GWh	C/I Conservation GWh	Actual Net Energy For Load GWh	Sales for Resale GWh	Utility Use & Losses GWh	Total Billed Retail Energy Sales (GWh)	Load Factor(%)
2007	118,518	2,138	2,066	114,315	1,499	7,401	105,415	59.4%
2008	115,379	2,249	2,126	111,004	993	7,092	102,919	60.2%
2009	115,844	2,345	2,196	111,303	1,155	7,394	102,755	56.8%
2010	119,220	2,487	2,259	114,475	2,049	7,870	104,557	58.7%
2011	117,460	2,683	2,324	112,454	2,176	6,950	103,327	59.4%
2012	116,083	2,823	2,394	110,866	2,237	6,403	102,226	59.0%
2013	117,087	2,962	2,469	111,655	2,158	6,713	102,784	59.1%
2014	121,621	3,125	2,529	115,968	5,375	6,204	104,389	57.7%
2015	128,556	3,232	2,568	122,756	6,610	6,326	109,820	61.0%
2016	127,481	3,254	2,608	121,619	6,623	5,334	109,663	58.2%

Historical Values (2007 - 2016):

Col. (2) represents derived "Total Net Energy For Load w/o DSM". The values are calculated using the formula: Col. (2) = Col. (3) + Col. (4) + Col. (5).

Col. (3) & Col. (4) are DSM values starting in January 1988 and are annual (12-month) values. Col. (3) and Col. (4) for 2016 are "estimated actuals" and are also annual (12-month) values. The values represent the total GWh reductions experienced each year .

Col. (8) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (8) = Col. (5) - Col. (6) - Col. (7). These values are at the meter.

Col. (9) is calculated using Col. (5) from this page and Col. (2), "Total", from Schedule 3.1 using the formula: Col. (9) = ((Col. (5)*1000) / ((Col. (2) * 8760) Adjustments are made for leap years.

Schedule 3.3
Forecast of Annual Net Energy for Load (GWh)
(All values are "at the generator"values except for Col (8))

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Forecasted Net Energy For Load without DSM GWh	Residential Conservation GWh	C/I Conservation GWh	Net Energy For Load Adjusted for DSM GWh	Sales for Resale GWh	Utility Use & Losses GWh	Forecasted Total Billed Retail Energy Sales w/o DSM GWh	Load Factor(%)
2017	119,186	22	45	119,119	5,973	5,144	108,069	56.7%
2018	120,500	46	72	120,382	5,992	5,332	109,176	56.6%
2019	121,122	71	100	120,951	6,067	5,369	109,686	56.4%
2020	122,325	97	130	122,098	6,143	5,495	110,688	56.8%
2021	122,053	124	161	121,768	5,669	5,465	110,919	56.4%
2022	122,806	151	193	122,462	5,238	5,630	111,938	56.2%
2023	123,653	179	227	123,247	5,317	5,695	112,641	55.7%
2024	124,933	208	263	124,462	5,398	5,827	113,708	55.4%
2025	125,680	238	300	125,142	5,480	5,852	114,348	54.9%
2026	126,825	268	336	126,221	5,564	5,916	115,345	54.5%

Projected Values (2017 - 2026):

Col. (2) represents Forecasted Net Energy for Load and does not include incremental DSM from 2017 - on. The Col. (2) values are extracted from Schedule 2.3, Col(19). The effects of conservation implemented prior to mid - 2016 are incorporated into the load forecast values in Col. (2).

Col. (3) & Col. (4) are forecasted values of the reduction on sales from incremental conservation from Jan 2017 - on and are mid-year (6-month) values reflecting DSM signups occurring evenly thoughout each year.

Col. (5) is the forecasted Net Energy for Load (NEL) after adjusting for impacts of incremental DSM for years 2017 - 2026 using the formula: Col. (5) = Col. (2) - Col. (3) - Col. (4)

Col. (8) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (8) = Col. (2) - Col. (6) - Col. (7). These values are at the meter.

Col. (9) is calculated using Col. (2) from this page and Col. (2), "Total", from Schedule 3.1. Col. (9) = ((Col. (2)*1000) / ((Col. (2) * 8760) Adjustments are made for leap years.

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FPSC - COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 150009-EI
FLORIDA POWER & LIGHT COMPANY

MAY 1, 2015

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

TESTIMONY & EXHIBITS OF:

RICHARD O. BROWN

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF RICHARD O. BROWN

DOCKET NO. 150009-EI

May 1, 2015

Q. Please state your name and business addresses.

A. My name is Richard O. Brown, 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 a Principal Engineer in the Resource Assessment & Planning Department.

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

A. My duties and responsibilities include performing a variety of analyses associated with determining the timing and magnitude of resources needed for FPL to maintain reliable electric service to its customers, then conducting economic and non-economic analyses to determine what the integrated resource plan is that will best meet those resource needs.

Q. Please describe your education and professional experience.

A. I graduated from the University of Miami (Florida) with a Bachelor of Science degree in Mechanical Engineering in 1999. I have worked on various projects such as demand side management (DSM) programs, new gas-fired generation alternatives, upgrades to FPL's existing nuclear power plants (FPL's Extended

Power Uprate), and various analyses involving system reliability issues. Most relevant to this docket, I have performed the economic analysis portion of the annual Turkey Point 6 & 7 feasibility analyses since 2011.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present the results of FPL's 2015 economic analyses for the new FPL nuclear units, Turkey Point 6 & 7, which analyzed 14 different future fuel cost and environmental compliance cost scenarios. Non-economic analyses of Turkey Point 6 & 7 were also performed. The results of these analyses support the continued development of Turkey Point 6 & 7.

I briefly discuss FPL's portfolio approach in resource planning and the role of additional nuclear energy in that portfolio approach. I discuss the assumptions used in the 2015 feasibility analyses. I also present the results of additional analyses that further quantify the projected benefits of the Turkey Point 6 & 7 project.

The 2015 feasibility analyses of the Turkey Point 6 & 7 project are presented to satisfy the requirement of Subsection 6(c)5 of the Florida Administrative Code Rule 25-6.0423, Nuclear Power Plant Cost Recovery, which states *"Along with the filings required by this paragraph, each year 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. In 2015, FPL performed new feasibility analyses using updated assumptions and forecasts. Each year's analysis is a snapshot of various assumptions such as load forecast, fuel cost forecast, environmental compliance cost forecast, operating life of Turkey Point 6 & 7, etc. The feasibility analyses utilized 3 fuel cost forecasts, 3 environmental compliance cost forecasts, and two different operating lives for the proposed units. In total, 14 scenarios were analyzed. The results of FPL's 2015 feasibility analyses indicate that completing the project is projected to be clearly economic for FPL's customers in 8 of these 14 scenarios because the projected breakeven capital costs for the two new nuclear units were above the high end of FPL's non-binding capital cost estimate range. In each of the remaining 6 scenarios, the breakeven capital costs fell within the range of the non-binding capital cost estimate.

The results of the 2015 feasibility analyses are summarized in Exhibit ROB-1. This exhibit presents a number of results from FPL's 2015 analyses of the Turkey Point 6 & 7 project including, but not limited to: (i) the number of future fuel cost and environmental compliance cost scenarios in which the project is projected to be clearly economic; (ii) projected fuel cost 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 continuing the Turkey Point 6 & 7 project. In all scenarios, the proposed new units greatly reduce fuel costs and reduce emissions. For example, based on the Medium Fuel Cost forecast, customers are projected to save at least $47 billion (nominal) in fuel costs over the life of Turkey Point 6 & 7. 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 the Turkey Point 6 & 7 project continues to be projected as a valuable resource addition for FPL's customers as part of FPL's portfolio approach to resource planning.

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 2015 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 2015 feasibility analyses examine potential future scenarios that result from combining various fossil fuel price forecasts, environmental compliance

cost forecasts, and operating lives. 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 certain 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 its 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 great hedge against fossil fuel price volatility and increases in environmental compliance costs. Diversification also improves system reliability.

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. The current forecasted low cost of natural gas is also a primary reason that highly efficient gas-fired combined cycle (CC) units have been determined to be the most economic type of fossil fueled generation resource for FPL's system when FPL has needed to add new generation resources. As a result of

these factors, FPL has been increasing its use of natural gas to benefit its customers and now supplies approximately 2/3 of the total 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) utilizing high-efficiency CC generating units, which burn natural gas as efficiently as possible, when FPL's resource needs dictate that new generating units should be added and a CC unit is projected to be the cost effective option; (ii) enhancing the availability of natural gas by the construction of 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 adding renewable energy in specific cases in which renewables are cost-competitive

and (v) significantly diversifying FPL's fuel mix by adding additional nuclear capacity through 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. Because of these attributes, nuclear capacity serves as an excellent hedge against increasing natural gas costs and increasing environmental compliance costs as previously mentioned. These hedge aspects of nuclear capacity are especially valuable 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 6 exhibits:

- Exhibit ROB-1: Summary of Results from FPL's 2015 Feasibility Analyses of the Turkey Point 6 & 7 Project (Plus Results from Additional Analyses);
- Exhibit ROB-2: Comparison of Key Assumptions Utilized in the 2014 and 2015 Feasibility Analyses of the Turkey Point 6 & 7 Project;
- Exhibit ROB-3: Projection of FPL's Resource Needs Through 2030;
- Exhibit ROB-4: The Two Resource Plans Utilized in FPL's 2015 Feasibility Analyses of the Turkey Point 6 & 7 Project;

- Exhibit ROB-5: 2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project: Case #1 Analysis – 40-Year Operating Life; Total Costs, Total Cost Differentials, and Breakeven Costs for All Fuel and Environmental Compliance Cost Scenarios in 2015$ (millions, CPVRR, 2015-2068); and,
- Exhibit ROB-6: 2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project: Case #2 Analysis – 60-Year Operating Life; Total Costs, Total Cost Differentials, and Breakeven Costs for All Fuel and Environmental Compliance Cost Scenarios in 2015$ (millions, CPVRR, 2015-2088).

I. 2015 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 UPLAN model, simulates the FPL system and dispatches all of the generating units on an annual, monthly, and hour-by-hour basis. 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 an alternate resource option that competes with these two nuclear units. The competing alternate resource option is a new highly fuel-efficient CC generating capacity similar to the CC capacity that has recently been installed at FPL's Cape Canaveral and Riviera Beach sites, and which is currently being installed at FPL's Port Everglades site, through FPL's modernization projects at these sites.

The competing resource plans are then analyzed over a multi-year period. This approach allows FPL's analyses to account for long-term economic impacts of the resource options being evaluated. FPL's 2015 feasibility analyses address these economic impacts. In addition, my testimony provides a discussion of three non-economic impacts to the FPL system: reduction of fossil fuel usage, 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 (FPSC) provided guidance regarding what is required in the feasibility analyses?

A. Yes. The 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 Nuclear Cost Recovery (NCR) 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 the NCR Rule.

This guidance from the FPSC distinguishes "sunk costs" from "updated capital cost estimates" in regard to feasibility analyses of nuclear projects. Consequently, FPL has 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 NCR order (Order No. PSC-11-0547-FOF-EI, pages 17-18 and 38).

Q. Was the analytical approach used in FPL's 2015 feasibility analyses of Turkey Point 6 & 7 similar to the approach used in the Determination of Need filing for this project, and in the feasibility analyses of this project that were presented in previous NCR filings?

A. Yes. The analytical approach that was used in the 2015 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 annual feasibility analyses presented in the 2008 through 2014 NCR 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 capital costs, in terms of both cumulative present value of revenue requirements (CPVRR) 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 2014 NCR 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. 2015 Feasibility Analyses – Updated Assumptions

Q. Do FPL's 2015 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. FPL updated these assumptions in late 2014/early 2015 and is using them in its 2015 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 compliance cost forecasts;
3) breakeven costs;
4) capital cost estimates; and,
5) sunk costs.

FPL's 2015 feasibility analyses for the Turkey Point 6 & 7 project included current assumptions for 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 2015 feasibility analyses present updated 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 late 2014/early 2015 in preparation for all of its 2015 resource planning work. Consequently, these other updated assumptions are also included in FPL's 2015 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 any changes in the forecasted values for fuel costs and environmental compliance costs between the forecasts utilized in the 2015 feasibility analyses and those that were used in the 2014 feasibility analyses.

A. Exhibit ROB-2 provides these comparisons. Exhibit ROB-2, Page 1 of 4, provides 2014 and 2015 forecasted Medium Fuel Cost values for selected years for natural gas, oil, and nuclear fuel costs. As shown on this page, the 2015 Medium Fuel Cost forecast for natural gas is lower than the respective 2014 forecast throughout all years. The 2015 forecast for 1% sulfur oil is higher than the respective 2014 forecast throughout all years. In regard to forecasted nuclear fuel costs, the 2015 forecasted prices are slightly lower in most years than the 2014 forecasted prices.

Exhibit ROB-2, Page 2 of 4, presents similar 2014 and 2015 comparative information for forecasted Env II (i.e., mid-band) environmental compliance costs for three types of air emissions: SO_2, NO_x, and CO_2. As shown on this page, the SO_2 and NO_x air emissions have been updated from what was assumed in FPL's 2014 feasibility analyses, based on the most current market and price projections. The cost of CO_2 air emissions has also been updated. The Env II CO_2 forecast is essentially the same as the previously used forecast in the 2014 feasibility analysis, with the exception that CO_2 prices are now assumed to start in 2020 instead of 2023, consistent with EPA's proposed Clean Power Plan (CPP). The low and high band forecasts (Env I and Env III, respectively) of CO_2 prices have also been updated accordingly.

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 compliance 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. Did FPL consider the EPA's proposed CPP regulations in its 2015 feasibility analyses?

A. Yes. However, at the time the feasibility analyses were performed only proposed rules existed. Final rules are due later this year and Florida's state implementation plan is not scheduled to be complete until 2016. Due to this uncertainty, FPL decided to continue using its previous CO_2 cost forecast with

costs advanced to begin in 2020, which coincides with the year of the first CO_2 emission rate target in the proposed CPP regulation.

Q. Please discuss FPL's 2015 load forecast and how it compares to FPL's 2014 load forecast.

A. Exhibit ROB-2, Page 3 of 4, presents the 2014 and 2015 summer peak load forecasts. As shown in Column (3) on this page, the 2015 forecast of summer peak load is generally lower than the 2014 forecast. In addition, this page also provides a projection of the annual and cumulative growth in summer peak loads associated with the 2015 peak load forecast. As shown in column (5) of this exhibit, FPL projects a cumulative growth in summer peak load of approximately 5,166 MW by 2027 which increases to 7,041 MW by the year 2030.

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 ROB-3. This exhibit shows that, without the incremental capacity from Turkey Point 6 & 7 and with no other generating additions from 2027- on, FPL has a need for new resources starting in 2027 and this need increases every year thereafter. As shown in Column 12, the projected resource need in 2027 is 536 MW of new generating capacity and this projected resource need increases to 2,598 MW by 2030.

Q. What other assumptions changed from the 2014 analyses to the 2015 analyses?

A. Exhibit ROB-2, Page 4 of 4, presents the 2014 and 2015 projections for 9 other assumptions that were utilized in the feasibility analyses of the Turkey Point 6 & 7 project.

Q. Please discuss the first four assumptions.

A. These four assumptions are:

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

FPL's financial/economic assumptions used in the 2015 feasibility analyses have changed only in regard to the cost of debt and the discount rate from those used in the 2014 feasibility analyses. The financial/economic assumptions include the following: return on equity (ROE) is 10.5%, the cost of debt is 5.05%, the debt-to-equity ratio is 40.38%/59.62%, and the associated discount rate is 7.51%.

The remaining three assumptions involve the costs and performance of the competing new CC capacity used in the feasibility analyses. FPL's current projected (generator only) capital cost of the un-sited CC capacity is $842/kW in 2027$. The current projected heat rate of this CC capacity is 6,307

BTU/kWh. The projected firm gas transportation cost is $1.37/mmBTU for the year 2027.

Q. Please discuss the remaining five assumptions.

A. These five assumptions are:

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

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

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

8) previously spent capital costs that are excluded from the 2015 feasibility analyses; and,

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

The first of these five assumptions, the in-service dates of Turkey Point 6 & 7 utilized in the 2015 feasibility analyses are changed from 2022 and 2023 to 2027 and 2028. These dates represent the earliest practical deployment date for Turkey Point 6 & 7. FPL Witness Scroggs' direct testimony filed on March 1, 2015 addressed these new dates for Turkey Point 6 & 7.

The second of these assumptions is the assumed operating lives of the two new nuclear units. In its 2015 feasibility analyses, FPL again is using two operating life assumptions: a 40-year operating life and a 60-year operating life.

Two of FPL's four existing nuclear units, Turkey Point 3 & 4, have 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 a 40-year operating life assumption for Turkey Point 6 & 7 is increasingly conservative and therefore also uses an assumption of a 60-year operating life in the feasibility analyses. This is the same approach FPL utilized in last year's feasibility analyses.

The third of these assumptions is the non-binding cost estimate for constructing Turkey Point 6 & 7. The range of costs used in the 2015 feasibility analyses is $3,844/kW to $5,589/kW in 2015$. This reflects an updating of the projected cost estimate range. FPL Witness Scroggs' direct testimony discusses the updating of this assumption.

The fourth of these assumptions is the previously spent capital costs that are excluded in the 2015 feasibility analysis. In order to account for "sunk" capital costs for the Turkey Point 6 & 7 project, FPL is excluding

approximately $254 million of sunk costs that have already been spent through December 31, 2014. FPL Witness Grant-Keene provides the sunk cost value of the Turkey Point 6 & 7 project in her direct testimony.

The fifth assumption is the cumulative annual capital expenditure percentages for the construction of Turkey Point 6 & 7. These annual percentages represent the cumulative of the total nominal cost of the two units. The annual cumulative expenditure percentage values used in the 2015 feasibility analyses are different from the values used in the 2014 feasibility analyses due to the change of the in-service dates of the units.

Q. It is clear that a number of changes in assumptions were made between those used in the 2014 feasibility analyses and those used in the 2015 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 2014 feasibility analyses to those used in the 2015 feasibility analyses. For the Turkey Point 6 & 7

project, some updated assumptions, such as the lower natural gas cost forecasts, 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 2015 feasibility analyses of the project.

III. Analysis of the Turkey Point 6 & 7 Project

Q. What resource plans were used to perform the 2015 feasibility analyses of Turkey Point 6 & 7?

A. The resource plans that were utilized in the 2015 feasibility analyses of Turkey Point 6 & 7 are presented in Exhibit ROB-4. One resource plan with Turkey Point 6 & 7, and another resource plan without Turkey Point 6 & 7, are presented in this exhibit. As shown in this exhibit, the two resource plans are identical through the year 2026. The resource plans differ starting in 2027. The Resource Plan with Turkey Point 6 & 7 adds the two 1,100 MW nuclear units, one in 2027 and one in 2028. The Resource Plan without Turkey Point 6 & 7 adds two 1,317 MW CC units, one in 2027 and one in 2029. Both resource plans then add the necessary amount of capacity through the rest of the analysis periods to meet FPL's reliability criteria. The timing of these later capacity additions varies between the two resource plans.

Q. What were the results of the 2015 feasibility analyses for Turkey Point 6 & 7?

A. The results of the 2015 feasibility analyses for Turkey Point 6 & 7 are presented in Exhibits ROB-5 and ROB-6. Exhibit ROB-5 presents the results for Case #1 that assumes a 40-year operating life. Exhibit ROB-6 presents the results for Case #2 that assumes a 60-year operating life.

The calculated breakeven nuclear capital costs in overnight construction costs in terms of $/kW in 2015$ are presented in Column (6) of these exhibits. The results in Column (6), when compared to FPL's non-binding estimated range of capital costs in 2015$ of $3,844/kW to $5,589/kW, show that the projected breakeven capital costs for Turkey Point 6 & 7 are above this range in 2 of 7 scenarios in Exhibit ROB-5 (Case #1) and in 6 of 7 scenarios in Exhibit ROB-6 (Case # 2). Thus Turkey Point 6 & 7 is projected to clearly be the economic choice in 8, or more than half, of the 14 scenarios. In the remaining 6 scenarios, the breakeven cost is within the non-binding cost estimate range, which indicates that this project may be economic in each of these scenarios.

Q. In addition to the results of these economic analyses, did FPL's 2015 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. There are 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 CO_2 emission reductions.

I use the results from the 2015 feasibility analyses for the Case #1 Medium Fuel Cost, Env II scenario to discuss these three advantages. Comparable results also occur using the same fuel cost and environmental compliance cost forecast scenario in the Case #2 analyses.

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 value for that scenario. As shown in Exhibit ROB-5, these CPVRR savings values represent CPVRR breakeven capital costs. In addition, these CPVRR breakeven costs are translated into overnight construction $/kW breakeven costs in 2015$. 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 2029, 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 $570 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 do 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 $47 billion (nominal) assuming a 40 year life of the Turkey Point 6 & 7 units. FPL's 2014 annual total system fuel cost was approximately $3.5 billion. Therefore, the projected fuel savings over the life of the Turkey Point 6 & 7 units is equivalent to serving FPL's more than 4.7 million customer accounts (representing approximately 9 million people) for approximately 13 years at zero fuel costs, based on last year's annual fuel costs.

Q. Please discuss the projected fuel diversity benefits for Turkey Point 6 & 7.

A. Regarding system fuel diversity, in 2029 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 75% and 20%, respectively. With Turkey Point 6 & 7, these projected percentages change to approximately 62% for natural gas and 33% for nuclear. Thus FPL is projected to be far less reliant on natural gas, and more reliant upon nuclear energy, by approximately 13% 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 2029. That

amount of energy is projected to be approximately 18.4 million MWh. The current forecasted average annual energy use per residential customer in 2029 is 14,706 kWh. Therefore, the projected output from Turkey Point 6 & 7 in 2029 will serve the equivalent of the total annual electrical usage of approximately 1,251,000 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 18.4 million MWh in 2029 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 184,000,000 mmBTU of natural gas (if all of this energy had been produced by natural gas), or approximately 28,800,000 barrels of oil (if all of this energy had been produced by oil), in 2029.

Q. In regard to fuel diversity, is there another aspect of FPL's projected fuel mix that should be kept in mind when considering the addition of Turkey Point 6 & 7?

A. Yes. FPL's fuel mix currently consists of coal-based energy contributions from several sources including FPL's partial ownership of coal units at the Scherer and St. John's sites, plus coal-based power purchase agreements (PPAs) with Cedar Bay, Indiantown, and St. John's. A substantial amount of

this coal-based capacity and energy is projected to end between 2016 and 2025.

FPL anticipates terminating its existing power purchase agreement for 250 MW of coal-fired capacity from the Cedar Bay generating facility at the end of August 2015 as a result of a Purchase and Sale Agreement between FPL and Cedar Bay Generating Company, L.P. FPL would then own the unit starting on September 1, 2015. FPL currently anticipates that it will not need the unit for economic purposes after 2016 and, if that proves to be the case, would retire the unit at that time. FPL filed for FPSC approval of the Purchase and Sale Agreement in the first quarter of 2015.

The St. John's 382 MW PPA is currently projected to effectively end well before the nuclear units come online, due to the cumulative amount of energy that FPL can receive under this agreement. In addition, the current agreement with Indiantown (330 MW) is scheduled to terminate in 2025. It is unknown if future agreements with this facility could be reached, particularly given the current economics of coal versus natural gas and the possibility of new environmental regulations that presumably will be unfavorable to coal energy production. For the same reasons, it is unlikely that any new coal-fired generation will be added in Florida for the foreseeable future.

The projected loss of this coal-based capacity is accounted for in the previously mentioned gas versus nuclear fuel mix percentage values. The important point regarding gas and coal usage is that the contribution of coal generation will decline; not that projected gas usage is increasing while coal usage remains constant. Instead, gas usage is projected to increase, in part, because the usage of one non-gas fuel (coal) is expected to substantially decline in the near future. The role of additional nuclear energy in regard to fuel diversity thus becomes even more important than in the gas vs. nuclear percentage values previously discussed when one recognizes that coal usage will actually be significantly declining in absolute terms.

Q. What is the projected impact of Turkey Point 6 & 7 on FPL's system CO_2 emissions?

A. Turkey Point 6 & 7 is projected to result in a cumulative reduction over the expected life of the two units of approximately 290 million tons of CO_2. This will be a significant reduction in CO_2 emissions, representing approximately 714% of the total CO_2 emissions from all FPL-owned generating units in 2014 (which was approximately 41 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 25,000 MW of generation for approximately 86 months, or approximately 7.2 years, with zero CO_2 emissions.

Q. In regard to the projected fuel cost savings and emission reductions discussed above, does Turkey Point 6 & 7 provide other 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 future environmental (including 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. Are there any other benefits from the addition of Turkey Point 6 & 7 that you would like to discuss?

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 $1.7 billion CPVRR. This savings value is accounted for in FPL's 2015 feasibility analyses of the Turkey Point 6 & 7 project as an additional cost incurred in the Without Turkey Point 6 & 7 resource plan.

Q. Please briefly explain how the Nuclear Cost Recovery process saves money for FPL's customers.

A. The Nuclear Cost Recovery process allows for annual recovery of interest costs incurred during construction, rather than through long-term recovery under the normal Allowance for Funds Used During Construction (AFUDC) approach. This enables FPL's customers to avoid paying significant compounded interest charges they would otherwise incur.

Q. Was an analysis performed regarding the projected capital cost savings for FPL's customers from Florida's Nuclear Cost Recovery process?

A. Yes. Analyses of the projected Turkey Point 6 & 7 capital cost savings for FPL's customers that results from Florida's Nuclear Cost Recovery process were performed. The results of one of these analyses, assuming the high-end of the non-binding capital cost range and a conservative 40-year operating life, are presented in FPL witness Scroggs' Exhibit SDS-11. The result of this analysis is that Florida's Nuclear Cost Recovery process is projected to save FPL's customers approximately $12.3 billion (nominal), or $584 million (CPVRR), in capital cost savings. Another analysis that was performed, assuming the low-end of the non-binding capital cost estimate range, and a 40-year operating life for the units, resulted in a projection that Florida's Nuclear Cost Recovery process will save FPL's customers approximately $8.6 billion (nominal), or $435 million (CPVRR), in capital cost savings.

Q. What conclusions do you draw from the results of the 2015 feasibility analyses of Turkey Point 6 & 7?

A. The Turkey Point 6 & 7 project is projected to be the economic choice in 8 of the 14 scenarios analyzed and the projected breakeven costs were within the

non-binding cost estimate range for Turkey Point 6 & 7 in each of the remaining 6 scenarios. Turkey Point 6 & 7 is also projected to be beneficial for FPL's customers in terms of increased system fuel diversity, reduced system emissions, and as a significant hedge against higher fuel and environmental compliance costs.

Thus, the results of the 2015 feasibility analyses strongly support the feasibility of continuing the Turkey Point 6 & 7 project.

Q. Does this conclude your testimony?

A. Yes.

Docket No. 150009-EI
Summary of Results from FPL's 2015
Feasibility Analyses of the
Turkey Point 6 & 7 Project
(Plus Results from Additional Analyses)
Exhibit ROB-1 , Page 1 of 1

Summary of Results from FPL's 2015 Feasibility Analyses of the Turkey Point 6 & 7 Project (Plus Results from Additional Analyses)

	Case # 1 Analyses (40-Year Life)	Case # 2 Analyses (60-Year Life)
1) Number of fuel cost/environmental compliance cost scenarios in which the break-even cost is projected to be above the high-end of the non-binding cost estimate range for Turkey Point 6 & 7:	2 of 7	6 of 7
2) Projected fuel savings for FPL's customers in first full year of operation (approximate nominal $):*	570 million	570 million
3) Projected fuel savings for FPL's customers over the life of Turkey Point 6 & 7 (approximate nominal $):	47 billion	101 billion
4) Number of years of equivalent zero system fuel cost for FPL's customers based on projected nominal fuel savings over the life of Turkey Point 6 & 7 compared to FPL's 2014 annual system fuel cost (approximate years):	13 years	29 years
5) Projected percentage of total FPL energy produced from natural gas and nuclear in first full year of operation of the nuclear units (approximate %):*		
- without Turkey Point 6 & 7	75% Gas & 20% Nuclear	75% Gas & 20% Nuclear
- with Turkey Point 6 & 7	62% Gas & 33% Nuclear	62% Gas & 33% Nuclear
6) Equivalent approximate number of residential customers' annual energy use supplied by Turkey Point 6 & 7 in the first full year of operation*	1,251,000	1,251,000
7) Equivalent annual amount of fossil fuel saved by Turkey Point 6 & 7 beginning in the first full year of operation (approximate):*		
- Equivalent mmBTU of natural gas	184 million	184 million
- Equivalent barrels of oil	29 million	29 million
8) Projected amount of CO_2 emissions reduced by Turkey Point 6 & 7 over the life of the units:	290 million tons	481 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 2014 system CO_2 emissions (approximate):	86 (or 7.2 years)	142 (or 11.8 years)

* The first full year of operation for both Turkey Point 6 & 7 units is assumed to be 2029 in both cases.

Docket No. 150009-EI
Comparison of Key Assumptions Utilized in the 2014 and 2015 Feasibility Analyses of the Turkey Point 6 & 7 Project
Exhibit ROB-2 , Page 1 of 4

Comparison of Key Assumptions Utilized in the 2014 and 2015 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)
	Forecasted Natural Gas Cost ($/mmBTU)		
Selected Years	2014 Feasibility Analysis	2015 Feasibility Analysis	Change in 2015 Forecast
2027	$8.26	$6.89	($1.37)
2030	$9.19	$7.53	($1.66)
2040	$13.32	$9.63	($3.69)
2050	$19.31	$12.21	($7.10)
2060	$27.99	$15.47	($12.51)
2070	$40.58	$19.62	($20.96)
2080	$58.85	$24.87	($33.97)

	(1)	(2)	(3) = (2) - (1)
	Forecasted 1% S Oil Cost ($/mmBTU)		
Selected Years	2014 Feasibility Analysis	2015 Feasibility Analysis	Change in 2015 Forecast
2027	$21.78	$22.29	$0.51
2030	$23.08	$25.05	$1.97
2040	$27.07	$31.14	$4.07
2050	$31.78	$36.27	$4.50
2060	$37.31	$42.27	$4.96
2070	$43.82	$49.27	$5.46
2080	$51.47	$57.46	$5.99

	(1)	(2)	(3) = (2) - (1)
	Forecasted Nuclear Fuel Cost ($/mmBTU)		
Selected Years	2014 Feasibility Analysis	2015 Feasibility Analysis	Change in 2015 Forecast
2027	$1.01	$0.99	($0.01)
2030	$1.08	$1.11	$0.02
2040	$1.39	$1.28	($0.11)
2050	$1.77	$1.63	($0.14)
2060	$2.27	$2.09	($0.18)
2070	$2.84	$2.61	($0.23)
2080	$3.63	$3.34	($0.29)

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Comparison of Key Assumptions Utilized in the 2014 and 2015 Feasibility Analyses of the Turkey Point 6 & 7 Project
Exhibit ROB-2, Page 2 of 4

Comparison of Key Assumptions Utilized in the 2014 and 2015 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)
	Forecasted SO_2 Compliance Cost ($/ton)		
Selected Years	2014 Feasibility Analysis	2015 Feasibility Analysis	Change in 2015 Forecast
2027	$76	$0	($76)
2030	$82	$0	($82)
2040	$105	$0	($105)
2050	$134	$0	($134)
2060	$172	$0	($172)
2070	$220	$0	($220)
2080	$282	$0	($282)

	(1)	(2)	(3) = (2) - (1)
	Forecasted NO_x Compliance Cost ($/ton)		
Selected Years	2014 Feasibility Analysis	2015 Feasibility Analysis	Change in 2015 Forecast
2027	$685	$125	($560)
2030	$737	$125	($612)
2040	$944	$125	($819)
2050	$1,208	$125	($1,083)
2060	$1,547	$125	($1,422)
2070	$1,980	$125	($1,855)
2080	$2,534	$125	($2,409)

	(1)	(2)	(3) = (2) - (1)
	Forecasted CO_2 Compliance Cost ($/ton)		
Selected Years	2014 Feasibility Analysis	2015 Feasibility Analysis	Change in 2015 Forecast
2027	$15	$21	$7
2030	$21	$31	$9
2040	$64	$85	$21
2050	$154	$195	$40
2060	$321	$377	$55
2070	$448	$482	$34
2080	$573	$617	$44

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Comparison of Key Assumptions Utilized in the 2014 and 2015
Feasibility Analyses of the Turkey Point 6 & 7 Project
Exhibit ROB-2 , Page 3 of 4

Comparison of Key Assumptions Utilized in the 2014 and 2015
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	2014 Feasibility Analysis	2015 Feasibility Analysis	Change in 2015 Forecast	Annual Growth with 2015 Peak Demand Forecast	Cumulative Growth with 2015 Peak Demand Forecast
2015	23,356	23,286	(70)	---	---
2016	23,778	23,778	1	493	493
2017	24,190	24,252	62	474	967
2018	24,544	24,648	104	395	1,362
2019	24,896	25,045	149	397	1,759
2020	25,239	25,369	130	324	2,083
2021	25,439	25,497	58	128	2,211
2022	25,908	25,833	(75)	336	2,547
2023	26,528	26,286	(242)	453	3,000
2024	27,214	26,771	(444)	485	3,485
2025	27,877	27,272	(605)	501	3,986
2026	28,505	27,825	(680)	553	4,539
2027	29,135	28,451	(683)	627	5,166
2028	29,731	29,070	(661)	619	5,784
2029	30,261	29,695	(565)	625	6,410
2030	30,786	30,327	(459)	631	7,041
2035	33,444	33,041	(403)	*	*
2040	35,957	35,646	(311)	*	*

* 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.

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Comparison of Key Assumptions Utilized in the 2014 and 2015
Feasibility Analyses of the Turkey Point 6 & 7 Project
Exhibit ROB-2, Page 4 of 4

Comparison of Key Assumptions Utilized in the 2014 and 2015
Feasibility Analyses of the Turkey Point 6 & 7 Project: Other Assumptions

Assumption	(1) Value for 2014 Feasibility Analysis	(2) Value for 2015 Feasibility Analysis	(3) = (2) - (1) Change in 2015 Forecast
1) Financial/Economic Assumptions (Base Case):			
- Capital Structure (debt/equity)	40.38%/59.62%	40.38%/59.62%	---
- Cost of Debt	5.14%	5.05%	(0.09%)
- Return on Equity	10.50%	10.50%	---
- Discount Rate (after tax)	7.54%	7.51%	(0.03%)
2) CC Generator Capital ($/kW in 2022, w/o AFUDC) for 2014 Analysis ; CC Generator Capital ($/kW in 2027, w/o AFUDC) for 2015 Analysis	$883	$842	---
3) CC Heat Rate (Base 100%, BTU/kWh)	6,334	6,307	(27)
4) Firm Gas Transportation Cost ($/mmBTU in 2023) for 2014 Analysis ; Firm Gas Transportation Cost ($/mmBTU in 2027) for 2015 Analysis	$1.20	$1.37	---
5) Assumed In-Service Dates for Turkey Point Units 6 & 7	2022 & 2023	2027 & 2028	5 years
6) Assumed Operating Lives of Turkey Point Units 6 & 7	40 years or 60 years	40 years or 60 years	---
7) Non-Binding Overnight Cost Estimate for New Nuclear Units ($/kW)	$3,750 to $5,453 in 2014$	$3,844 to $5,589 in 2015$	Change
8) Previously Spent Capital Costs Now Excluded ($ millions, approx.)	$228	$254	$26
9) Cumulative Annual Capital Expenditure Percentage for TP 6 & 7 (assuming 2022 & 2023 in-service dates for the 2014 Analysis; assuming 2027 & 2028 in-service dates for the 2015 Analysis):			
2014	1.6%	1.4%	---
2015	I.7%	1.6%	---
2016	13.6%	1.7%	---
2017	27.1%	1.8%	---
2018	41.9%	2.3%	---
2019	57.6%	2.7%	---
2020	72.1%	6.4%	---
2021	85.4%	14.7%	---
2022	97.2%	26.9%	---
2023	100.0%	41.7%	---
2024	---	57.5%	---
2025	---	72.0%	---
2026	---	85.4%	---
2027	---	97.2%	---
2028	---	100.0%	---

Projection of FPL's Resource Needs Through 2030
(Assuming No Turkey Point 6 & 7 and No Other Generation Additions from 2027 - On)

August of the Year	(1) Projected FPL Unit Capability * (MW)	(2) Projected Firm Capacity Purchases (MW)	(3) Projected Scheduled Maintenance (MW)	(4) = (1) + (2) - (3) Projected Total Capacity (MW)	(5) Projected Peak Load (MW)	(6) Projected Summer DSM Capability ** (MW)	(7) = (5) - (6) Projected Firm Peak Load (MW)	(8) = (4) - (7) Projected Summer Reserves (MW)	(9) = (8) / (7) Projected Summer Total Reserve Margin w/o Additions (%)	(10) = ((7)*1.20)-(4) **Projected MW Needed to Meet 20% Total Reserve Margin*** (MW)**	(11) = ((4)-(5)) / (5) Projected Generation-Only Reserve Margin (GRM) w/o Additions (%)	(12) = ((5)*1.10)-(4) **Projected MW Needed to Meet 10% GRM**** (MW)**
2015	25,008	2,015	0	27,022	23,286	1,951	21,335	5,688	26.7%	**(1,421)**	16.0%	**(1,408)**
2016	25,585	837	0	26,421	23,778	2,000	21,779	4,643	21.3%	**(287)**	11.1%	**(265)**
2017	26,002	837	0	26,838	24,252	2,046	22,207	4,632	20.9%	**(190)**	10.7%	**(161)**
2018	26,230	837	0	27,067	24,648	2,092	22,555	4,512	20.0%	**(1)**	9.8%	**45**
2019	27,666	455	0	28,120	25,045	2,140	22,905	5,216	22.8%	**(635)**	12.3%	**(571)**
2020	27,666	455	0	28,120	25,369	2,188	23,181	4,939	21.3%	**(303)**	10.8%	**(214)**
2021	27,753	635	0	28,388	25,497	2,237	23,260	5,128	22.0%	**(476)**	11.3%	**(341)**
2022	27,839	635	0	28,473	25,833	2,287	23,546	4,927	20.9%	**(218)**	10.2%	**(57)**
2023	29,155	635	0	29,790	26,286	2,338	23,948	5,841	24.4%	**(1,052)**	13.3%	**(875)**
2024	29,155	635	0	29,789	26,771	2,389	24,381	5,408	22.2%	**(532)**	11.3%	**(342)**
2025	30,471	635	0	31,106	27,272	2,440	24,832	6,274	25.3%	**(1,308)**	14.1%	**(1,107)**
2026	30,471	305	0	30,775	27,825	2,490	25,335	5,441	21.5%	**(374)**	10.6%	**(168)**
2027	30,471	290	0	30,761	28,451	2,540	25,911	4,849	18.7%	**333**	8.1%	**536**
2028	30,471	290	0	30,761	29,070	2,590	26,480	4,281	16.2%	**1,015**	5.8%	**1,216**
2029	30,471	290	0	30,761	29,695	2,640	27,055	3,706	13.7%	**1,706**	3.6%	**1,904**
2030	30,471	290	0	30,761	30,327	2,690	27,637	3,124	11.3%	**2,403**	1.4%	**2,598**

* MW values shown in Column (1) include: the completion of the Port Everglades modernization project in 2016, the retirement of 44 of the 48 existing GTs in Broward County in late 2016 & the addition of 5 new CTs at the Lauderdale site and 2 CTs at the Ft.Myers site in late 2016, the upgraded capacity of Ft.Myers 3A&3B, the the addition of a new Okeechobee CC unit in 2019, the addition of firm capacity from the Eco-Gen PPA in 2021, the addition of a one-year 207 MW PPA in 2018, and 116 MW of firm PV in late 2016, and the addition of a new unsited CC in 2023 and 2025. (Note that the 2019 Okeechobee CC addition is a placeholder until a decision regarding FPL's capacity RFP is made.

** The DSM values shown in Column (6) account for incremental DSM additions as per the 2014 DSM Goals docket for 2015 through 2024, for projected annual participant attrition in FPL's existing residential load management program, and for assumed 50 MW/year of new DSM for 2025 through 2030.

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

**** MW values shown in Column (12) represent new generating capacity needed to meet the 10% generation-only reserve margin criterion (GRM).

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Projection of FPL's Resource Needs Through 2030
Exhibit ROB-3, Page 1 of 1

The Two Resource Plans Utilized in FPL's 2015 Feasibility Analyses of the Turkey Point 6 & 7 Project

Resource Plan with TP 6&7	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030 - on
Unit(s)/capacity added	---	Port Everglades Modernization	223 MWs of Solar; 5 new CTs @ Lauderdale; 2 new CTs @ Ft.Myers	---	Okeechobee 3x1 CC Unit	---	---	---	(1) Greenfield 3x1 CC Unit	---	(1) Greenfield 3x1 CC Unit	---	Turkey Point 6	Turkey Point 7	---	*
Projected Summer Total Reserve Margin	26.7%	21.3%	20.9%	20.0%	22.8%	21.3%	22.0%	20.9%	24.4%	22.2%	25.3%	21.5%	23.0%	24.5%	21.8%	(meets criterion in all yrs)
Projected Summer Generation Only Reserve Margin	16.0%	11.1%	10.7%	9.8%	12.3%	10.8%	11.3%	10.2%	13.3%	11.3%	14.1%	10.6%	12.0%	13.4%	11.0%	(meets criterion in all yrs)
Resource Plan without TP 6&7	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030 - on**
Unit(s)/capacity added	---	Port Everglades Modernization	223 MWs of Solar; 5 new CTs @ Lauderdale; 2 new CTs @ Ft.Myers	---	Okeechobee 3x1 CC Unit	---	---	---	(1) Greenfield 3x1 CC Unit	---	(1) Greenfield 3x1 CC Unit	---	(1) Greenfield 3x1 CC Unit	---	(1) Greenfield 3x1 CC Unit	*
Projected Summer Total Reserve Margin	26.7%	21.3%	20.9%	20.0%	22.8%	21.3%	22.0%	20.9%	24.4%	22.2%	25.3%	21.5%	23.8%	21.1%	23.4%	(meets criterion in all yrs)
Projected Summer Generation Only Reserve Margin	16.0%	11.1%	10.7%	9.8%	12.3%	10.8%	11.3%	10.2%	13.3%	11.3%	14.1%	10.6%	12.7%	10.3%	12.5%	(meets criterion in all yrs)

Notes: - FPL's total reserve margin criterion is a minimum of 20.0% and its generation-only reserve margin is a minimum of 10%.
- Reserve margin values shown account for : the completion of the Port Everglades modernization project in 2016, the retirement of 44 of 48 existing GTs in Broward County in late 2016 & the addition of 5 new CTs at the Lauderdale site and 2 CTs at the Ft.Myers site in late 2016, the upgraded capacity of Ft.Myers 3A&3B, the the additiou of a new Okeechobee CC unit in 2019, the addition of firm capacity from the Eco-Gen PPA in 2021, the addition of a one-year 206 MW PPA in 2018, and 223 MW of PV capacity in late 2016 (which equates to 116 MW of firm capacity), and the addition of a new unsited CC in 2023 and 2025. (Note that the 2019 Okeechobee CC addition is a place holder until a final decision regarding FPL's capacity RFP is made.)

* The remaining unit additions starting in the year 2030 are 660 MW Filler Unit additions.

Docket No. 15009-EI
The Two Resource Plans Utilized in
FPL's 2015 Feasibility Analyses of the
Turkey Point 6 & 7 Project
Exhibit ROB-4, Page 1 of 1

Docket No. 150009-EI
2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project:
Case # 1 Analysis - 40-Year Operating Life; Total Costs,
Total Cost Differentials, and Breakeven Costs for All Fuel
and Environmental Compliance Cost Scenarios in 2015$
(millions, CPVRR, 2015 - 2068)
Exhibit ROB-5, Page 1 of 1

2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project: Case # 1 Analysis - 40-Year Operating Life; Total Costs, Total Cost Differentials, and Breakeven Costs for All Fuel and Environmental Compliance Cost Scenarios in 2015$ (millions, CPVRR, 2015 - 2068)

(1)	(2)	(3)	(4)	(5) = (3) - (4)	(6)
Fuel Cost Forecast	Environmental Compliance Cost Forecast	Total Costs for Plans		Total Cost Difference Plan with TP 6 & 7 minus Plan without TP 6 & 7 *	Breakeven Nuclear Capital Costs ($/kW in 2015$)
		Resource Plan w/ TP 6 & 7	Resource Plan w/o TP 6 & 7		
High Fuel Cost	Env I	140,810	151,571	(10,762)	5,254
High Fuel Cost	Env II	148,047	159,595	(11,548)	5,639
High Fuel Cost	Env III	155,298	167,645	(12,348)	6,031
Medium Fuel Cost	Env I	125,989	135,525	(9,536)	4,654
Medium Fuel Cost	Env II	133,186	143,498	(10,312)	5,034
Medium Fuel Cost	Env III	140,393	151,496	(11,103)	5,421
Low Fuel Cost	Env I	110,950	119,248	(8,298)	4,049

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

Note: The TP 6 & 7 non-binding cost estimate range to which the breakeven cost is compared is $3,844/kW to $5,589/kW in 2015$.

Docket No. 150009-EI
2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project:
Case # 2 Analysis - 60-Year Operating Life; Total Costs,
Total Cost Differentials, and Breakeven Costs for All Fuel
and Environmental Compliance Cost Scenarios in 2015$
(millions, CPVRR, 2015 - 2088)
Exhibit ROB-6, Page 1 of 1

2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project: Case # 2 Analysis - 60-Year Operating Life; Total Costs, Total Cost Differentials, and Breakeven Costs for All Fuel and Environmental Compliance Cost Scenarios in 2015$ (millions, CPVRR, 2015 - 2088)

(1)	(2)	(3)	(4)	(5) = (3) - (4)	(6)
Fuel Cost Forecast	Environmental Compliance Cost Forecast	Total Costs for Plans: Resource Plan w/ TP 6 & 7	Total Costs for Plans: Resource Plan w/o TP 6 & 7	Total Cost Difference Plan with TP 6 & 7 minus Plan without TP 6 & 7 *	Breakeven Nuclear Capital Costs ($/kW in 2015$)
High Fuel Cost	Env I	165,666	178,785	(13,119)	6,408
High Fuel Cost	Env II	177,061	191,427	(14,366)	7,018
High Fuel Cost	Env III	188,470	204,108	(15,638)	7,640
Medium Fuel Cost	Env I	149,624	161,367	(11,743)	5,734
Medium Fuel Cost	Env II	160,969	173,950	(12,982)	6,341
Medium Fuel Cost	Env III	172,319	186,565	(14,246)	6,959
Low Fuel Cost	Env I	133,349	143,709	(10,360)	5,058

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

Note: The TP 6 & 7 non-binding cost estimate range to which the breakeven cost is compared is $3,844/kW to $5,589/kW in 2015$.

CERTIFICATE OF SERVICE
DOCKET NO. 150009-EI

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

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Second Quarter 2017 Survey of Professional Forecasters

Release Date: May 12, 2017

Forecasters Predict Slightly Brighter Outlook for Growth and Labor Markets over the Next Four Quarters

The U.S. economy over the next four quarters looks slightly stronger now than it did three months ago, according to 37 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The forecasters predict real GDP will grow at an annual rate of 3.1 percent this quarter, up from the previous estimate of 2.3 percent. Quarterly growth over the following three quarters also looks improved. On an annual-average over annual-average basis, the forecasters predict real GDP will grow 2.1 percent in 2017, 2.5 percent in 2018, 2.1 percent in 2019, and 2.3 percent in 2020.

An improved outlook for the unemployment rate accompanies the outlook for growth. The forecasters predict that the unemployment rate will average 4.5 percent in the current quarter, before falling to 4.4 percent in the next two quarters, and 4.3 percent in the first two quarters of 2018. The projections for the next four quarters (and the next four years) are below those of the last survey, indicating a brighter outlook for unemployment.

The panelists also predict an improvement in near-term employment. The forecasters see nonfarm payroll employment growing at a rate of 177,300 jobs per month this quarter, up from the previous estimate of 167,000. The projections for the following three quarters are also higher than those of the last survey. The forecasters' projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 182,600 in 2017 and 162,800 in 2018. (These annual-average estimates are computed as the year-to-year change in the annual-average level of nonfarm payroll employment, converted to a monthly rate.)

Median Forecasts for Selected Variables in the Current and Previous Surveys

	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2017:Q2	2.3	3.1	4.6	4.5	167.0	177.3
2017:Q3	2.4	2.5	4.6	4.4	168.9	170.7
2017:Q4	2.4	2.4	4.5	4.4	160.3	165.2
2018:Q1	2.2	2.4	4.5	4.3	157.6	166.7

2018:Q2	N.A.	2.7	N.A.	4.3	N.A.	152.8
Annual data (projections are based on annual-average levels):						
2017	2.3	2.1	4.6	4.5	180.3	182.6
2018	2.4	2.5	4.5	4.3	164.5	162.8
2019	2.6	2.1	4.5	4.4	N.A.	N.A.
2020	2.1	2.3	4.6	4.5	N.A.	N.A.

The charts below provide some insight into the degree of uncertainty the forecasters have about their projections for the rate of growth in the annual-average level of real GDP. Each chart presents the forecasters' previous and current estimates of the probability that growth will fall into each of 11 ranges. The charts show the forecasters are holding steady their estimates of uncertainty about growth in the next four years.

- Mean Probabilities for Real GDP Growth in 2017 (chart)
- Mean Probabilities for Real GDP Growth in 2018 (chart)
- Mean Probabilities for Real GDP Growth in 2019 (chart)
- Mean Probabilities for Real GDP Growth in 2020 (chart)

The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' current estimates of the probability that unemployment will fall into each of 10 ranges. The charts show the panelists are raising their density estimates for unemployment less than 4.9 percent over the next four years.

- Mean Probabilities for Unemployment Rate in 2017 (chart)
- Mean Probabilities for Unemployment Rate in 2018 (chart)
- Mean Probabilities for Unemployment Rate in 2019 (chart)
- Mean Probabilities for Unemployment Rate in 2020 (chart)

Forecasters Expect Lower Headline Inflation in 2017

The forecasters have revised downward their projections for headline CPI and PCE inflation over the next three quarters in 2017. The forecasters expect current-quarter headline CPI inflation to average 1.6 percent, lower than the last survey's estimate of 2.3 percent. Similarly, the forecasters predict current-quarter headline PCE inflation of 1.2 percent, also lower than the 2.0 percent predicted three months ago.

Measured on a fourth-quarter over fourth-quarter basis, headline CPI inflation is expected to average about 2.3 percent in each of the next three years, little changed from the last survey. The forecasters have revised downward their projections for headline PCE inflation in 2017 to 1.8 percent, but they pegged the rates for 2018 and 2019 at 2.0 percent, unchanged from the last survey.

Over the next 10 years, 2017 to 2026, the forecasters expect headline CPI inflation to average 2.30 percent at an annual rate, unchanged from the last survey. The corresponding estimate for 10-year

annual-average headline PCE inflation is 2.09 percent, little changed from the 2.10 percent predicted in the previous survey.

Median Short-Run and Long-Run Projections for Inflation (Annualized Percentage Points)								
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
Quarterly								
2017:Q2	2.3	1.6	2.2	1.9	2.0	1.2	1.9	1.7
2017:Q3	2.3	2.2	2.1	2.2	2.0	1.9	1.9	1.9
2017:Q4	2.5	2.3	2.2	2.2	2.1	2.0	1.9	1.9
2018:Q1	2.4	2.4	2.3	2.3	2.1	2.1	2.0	1.9
2018:Q2	N.A.	2.2	N.A.	2.2	N.A.	2.0	N.A.	2.0
Q4/Q4 Annual Averages								
2017	2.4	2.3	2.2	2.2	2.0	1.8	1.9	1.9
2018	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.0
2019	2.3	2.4	2.2	2.4	2.0	2.0	2.0	2.0
Long-Term Annual Averages								
2017-2021	2.30	2.35	N.A.	N.A.	2.03	2.06	N.A.	N.A.
2017-2026	2.30	2.30	N.A.	N.A.	2.10	2.09	N.A.	N.A.

The charts below show the median projections (the red line) and the associated interquartile ranges (gray areas around the red line) for the projections for 10-year annual-average CPI and PCE inflation. The top panel shows an unchanged level of the long-term projection for CPI inflation, at 2.30 percent. The bottom panel depicts the little changed 10-year forecast for PCE inflation, at 2.09 percent.

- Projections for the 10-Year Annual-Average Rate of CPI Inflation (chart)
- Projections for the 10-Year Annual-Average Rate of PCE Inflation (chart)

The figures below show the probabilities that the forecasters are assigning to the possibility that fourth-quarter over fourth-quarter core PCE inflation in 2017 and 2018 will fall into each of 10 ranges. For both years, the forecasters have increased the probability that core PCE inflation will be between 1.5 percent to 1.9 percent, compared with their estimates in the survey of three months ago.

- Mean Probabilities for Core PCE Inflation in 2017 (chart)
- Mean Probabilities for Core PCE Inflation in 2018 (chart)

Low and Reduced Risk of a Negative Quarter

The forecasters see a lower chance of a contraction in real GDP in any of the next four quarters. For the current quarter, the forecasters predict an 8.4 percent chance of negative growth, down from 11.2

percent in the last survey.

Risk of a Negative Quarter (%) Survey Means		
Quarterly data:	**Previous**	**New**
2017:Q2	11.2	8.4
2017:Q3	14.6	10.9
2017:Q4	16.2	14.0
2018:Q1	17.7	17.1
2018:Q2	N.A.	17.2

Technical Notes

Moody's Aaa and Baa Historical Rates

The historical values of Moody's Aaa and Baa rates are proprietary and, therefore, not available in the data files on the Bank's website or on the tables that accompany the survey's complete write-up in the PDF.

New File Format

On May 12, 2017, the survey's data files on the Bank's website were changed to a .xlsx extension instead of .xls.

The Federal Reserve Bank of Philadelphia thanks the following forecasters for their participation in recent surveys:

Lewis Alexander, Nomura Securities; **Scott Anderson**, Bank of the West (BNP Paribas Group); **Robert J. Barbera**, Johns Hopkins University Center for Financial Economics; **Peter Bernstein**, RCF Economic and Financial Consulting, Inc.; **Christine Chmura**, **Ph.D.**, and **Xiaobing Shuai**, **Ph.D.**, Chmura Economics & Analytics; **Gary Ciminero**, **CFA**, GLC Financial Economics; **Nathaniel Curtis**, Navigant Consulting; **Gregory Daco**, Oxford Economics USA, Inc.; **Rajeev Dhawan**, Georgia State University; **Robert Dietz**, National Association of Home Builders; **Gabriel Ehrlich**, **Daniil Manaenkov**, **Ben Meiselman**, **Owen Nie**, and **Aditi Thapar**, RSQE, University of Michigan; **Michael R. Englund**, Action Economics, LLC; **J.D. Foster**, U.S. Chamber of Commerce; **Michael Gapen**, Barclays Capital; **Sacha Gelfer**, Bentley University; **James Glassman**, JPMorgan Chase & Co.; **Jan Hatzius**, Goldman Sachs; **Keith Hembre**, Nuveen Asset Management; **Peter Hooper**, Deutsche Bank Securities, Inc.; **IHS Markit**; **Sam Kahan**, Kahan Consulting Ltd. (ACT Research LLC); **N. Karp**, BBVA Research USA; **Walter Kemmsies**, Jones Lang LaSalle; **Jack Kleinhenz**, Kleinhenz & Associates, Inc.; **Thomas Lam**; **L. Douglas Lee**, Economics from Washington; **John Lonski**, Moody's Capital Markets Group; **Macroeconomic Advisers**, **LLC**; **R. Anthony Metz**, Pareto Optimal Economics; **Michael Moran**, Daiwa Capital Markets America; **Joel L. Naroff**, Naroff Economic Advisors; **Mark Nielson, Ph.D.**, MacroEcon

Global Advisors; **Luca Noto**, Anima Sgr; **Brendon Ogmundson**, BC Real Estate Association; **Amir Raha** and **Maira Trimble**, Eaton Corporation; **Philip Rothman**, East Carolina University; **Chris Rupkey**, MUFG Union Bank; **John Silvia**, Wells Fargo; **Sean M. Snaith**, **Ph.D.**, University of Central Florida; **Constantine G. Soras, Ph.D.**, CGS Economic Consulting; **Stephen Stanley**, Amherst Pierpont Securities; **Charles Steindel**, Ramapo College of New Jersey; **Susan M. Sterne**, Economic Analysis Associates, Inc.; **James Sweeney**, Credit Suisse; **Thomas Kevin Swift**, American Chemistry Council; **Richard Yamarone**, Bloomberg, LP; **Ellen Zentner**, Morgan Stanley.

This is a partial list of participants. We also thank those who wish to remain anonymous.

Return to the main page for the Survey of Professional Forecasters.

View Complete Writeup

A complete writeup of this survey, including all tables, is available in PDF format.

Second Quarter 2017

Next Survey Release

The survey for 2017 Q3 will be released on **August 11, 2017**.

For more up-to-date information, please view the SPF release schedule.

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 150009-EI

THE CITY OF MIAMI

JUNE 22, 2015

IN RE: NUCLEAR POWER PLANT COST RECOVERY

FOR THE YEAR ENDING

DECEMBER 2016

TESTIMONY & EXHIBITS OF:

EUGENE T. MEEHAN

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

THE CITY OF MIAMI

DIRECT TESTIMONY OF EUGENE T. MEEHAN

DOCKET NO. 150009-EI

June 22, 2015

1. Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A. My name is Eugene T. Meehan. I am an independent energy and utility consultant. My address is 7042 Powderhorn Ct., Park City, Utah, 84098. I have prepared pre-filed testimony on behalf of the City of Miami ("the City").

2. Q. PLEASE SUMMARIZE YOUR PROFESSIONAL QUALIFICATIONS.

A. I have over thirty five years of experience consulting with electric and gas utilities. That work has involved examination and advice on many issues related to power markets, power contract design, long term generation expansion planning, competitive bidding and contract evaluation. For the past fifteen years, I have been extensively involved in advising clients on restructuring-related issues, including risk analysis, risk management, power plant and power contract

valuation, and post-transition regulatory issues. In recent years, I also have advised several utilities with respect to the acquisition of power from third parties. These assignments have involved the review of power contract offers made by competitive power marketers and owners of generation assets. I have testified several times with respect to the prudence of utility planning and power procurement and the economic implications of specific generation investment decisions, primarily in regard to investment in nuclear facilities**.** I have performed these assignments as a Senior Vice President with NERA Economic Consulting ("NERA") (a position I retired from in November 2014), as a Principal at Deloitte Consulting, and a Vice President at Energy Management Associates ("EMA"). Exhibit ETM - 1 contains a more detailed statement of my qualifications.

3. Q. PLEASE BRIEFLY SUMMARIZE YOUR EXPERIENCE AS A CONSULTANT PROVIDING ADVICE AND TESTIMONY RELATED TO THE ECONOMIC ANALYSES OF NUCLEAR INVESTMENTS.

A. In the early 1980s, I advised the owners of the Nine Mile Point 2 on the economics of continuing with construction of the Nine Mile Point 2 nuclear unit. This analysis examined the costs and benefits of continuing with construction of the unit versus abandoning the unit and recovering the investment to date. I

testified on the topic before the New York Public Service Commission. In the same general time frame, I worked on similar analyses for the owners of the Allen's Creek and Black Fox nuclear plants. In the mid and late 1980s, I analyzed and testified as to the prudence of the Nine Mile Point 2 nuclear unit and to the prudence of the decision to complete unit 2 at the South Texas Project nuclear plant. In the 1990s, I directed projects for the Public Service Company of Colorado examining the retirement of the Fort St. Vrain nuclear unit, for Central Maine Power Company examining the potential retirement of the Maine Yankee nuclear plant and for Niagara Mohawk Power Company examining the potential retirement of unit 1 at the Nine Mile Point nuclear facility. In 2012, I testified before a Nuclear Regulatory Commission ("NRC") atomic safety and licensing board with respect to the implications of the NRC taking no action regarding the extension of the operating license for the Indian Point nuclear facility. I am currently retained by the Ontario Independent Electricity System Operator to provide a Fairness Opinion with respect to a long term (through the early 2060s) contract for securing the refurbishment and operation of the 6300 MW Bruce nuclear facility.

4. Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION ("COMMISSION")?

A. Yes. In 1987, I testified before the Commission on behalf of the investor-owned and larger non investor-owned electric utilities in peninsular Florida on the subject of electric system generation planning and the appropriateness of the model used by those entities in the context of calculating avoided costs.

5. Q. PLEASE PROVIDE AN OVERVIEW OF YOUR TESTIMONY.

A. I have been asked by the City to examine the evidence provided by Florida Power & Light Company ("FP&L"), and the consequences for ratepayers, concerning the continued development of Turkey Point units 6 and 7. The purpose of my testimony is to present to the Commission the results of that examination.

6. Q. PLEASE EXPLAIN THE FEASIBILITY ANALYSIS CONDUCTED BY FP&L WITH RESPECT TO CONTINUING LICENSING AND CONSTRUCTION OF UNITS 6 AND 7 AT TURKEY POINT.

A. FP&L has presented the Commission with a lifetime Net Present Value ("NPV") analyses of the economic implications for ratepayers of continuing to develop Turkey Point units 6 and 7. The need for the first of those units has been delayed

until 2027. The analyses presented by FP&L to the Commission in support of the economic case for continued development of the units are based on 40 and 60 year operating lives for the units and show the break even capital cost in 2015 dollars. If a unit is completed below the break even capital cost, customers benefit on an NPV basis from completion. If a unit is completed at a cost above the break even capital cost, customers will pay more on an NPV basis from completion. In addition to examining 40 and 60 year operating periods, FP&L's analyses also examine several cases with alternate assumptions for items such as natural gas prices and alternate environmental cost assumptions. FP&L's interpretation of its analyses alleges that completing Turkey Point units 6 and 7 is the clear economic choice for customers because in 8 of the 14 scenarios examined the break even costs are above the range of the non-binding construction cost estimate. Similarly, FP&L alleges that in 6 of the 14 scenarios examined, the break even cost is within the range of non-binding construction costs estimates. For those 6 cases, FP&L's position is that the units may be economic. As expected, the results for Turkey Point units 6 and 7 are more favorable when a 60 year operating life is assumed. FP&L's analyses only consider going forward capital costs for the units since the sunk, or already

invested, costs will be recovered from customers whether or not construction is completed.

7. Q. WHY IS IT PARTICULARLY IMPORTANT TO REVIEW CAREFULLY FP&L'S FEASIBILITY ANALYSIS THIS YEAR?

A. The economic analysis of continued construction is very important. While it is true that FP&L has spent approximately $250 million on Turkey Point units 6 and 7 to date and will not be spending very large sums in 2016 given that the date of initial operation has been deferred to 2027, the framework for analyzing the economics of Turkey Point units 6 and 7 ignores sunk costs and considers only costs not yet spent or pledged. This is the correct way to analyze the economics of the investment, but requires that at some points a very hard look be taken at the outlook for the feasibility of the investment. By feasibility I mean the prospect that the investment will be beneficial for ratepayers. There is a danger that an investment such as Turkey Point units 6 and 7 is initially approved, that gradual investments are made over time, that despite changing circumstances continued creeping investments are made without a fundamental re-examination, that sunk costs build up, and that ultimately the plant is justifiably completed based on going forward cost analysis but results in much higher costs for customers than

the alternative because sunk costs that are ignored in the economic analysis are reflected in the rate base. The only protection against this situation is periodic, in-depth analyses of completion before significant additional costs are expended or pledged and become sunk costs.

8. Q. ARE YOU AWARE OF ANY CURRENT SITUATIONS WHERE SUNK COSTS HAVE GROWN TO A VERY HIGH LEVEL AND THE CIRCUMSTANCES JUSTIFYING THE INVESTMENT HAVE CHANGED?

A. Yes. A recent press report describes claims by a group that allege that that the expansion of Plant Vogtle, which is currently underway in Georgia, has become unnecessary and notes that over $ 6 billion has been spent. This is an example of a case where plant economics appear to have radically changed since the initial approval to proceed was granted and where there may be a possibility that billions of dollars of investment will be required to be paid for by ratepayers for an investment that could be abandoned or is only viable on a going forward basis because sunk costs are not relevant to decisions concerning future investment. This is a position that the Commission would not want to be in. A very hard look now, before the sunk costs of Turkey Point units 6 and 7 related costs grow to

very high levels, could avoid this situation. While it is true that sunk costs are not relevant to going forward economic decisions, it is hard to be objective when sunk costs are significant and it could be difficult to abandon an investment with billions of dollars in sunk costs despite the prospect that returns on future investment would be negative. I do not have any view as to whether the investment in the units in Georgia remains economic, but do believe it is correct that sunk costs have reached high levels and that assumptions have changed with respect to the cost of alternatives.

9. Q. IN YOUR OPINION IS THE FEASIBILITY ANALYSIS SUBMITTED BY FP&L A REASONABLE BASIS FOR CONCLUDING THAT TURKEY POINT UNITS 6 AND 7 REMAIN COST-EFFECTIVE FOR RATEPAYERS?

A. No. While I recognize that the analysis continues a process of presenting the feasibility of Turkey Point units 6 and 7 by comparing NPV break even costs to the non-binding construction costs range, I do not believe it is reasonable at this time. The Turkey Point units 6 and 7 project is at a critical point in its life cycle. First, there have been major changes in the long term outlook for the primary alternative, which is natural gas. Second, the need for Turkey Point units 6 and 7

has been delayed to the latter half of the next decade and environmental regulations on alternatives that are still speculative may be known with more certainty in a short time. Third, new nuclear units that have progressed more rapidly than Turkey Point have been experiencing construction delays and costs increases. Fourth, new nuclear units that were not supported by ratepayer backing that were planned around the same time as Turkey Point have been essentially abandoned. Finally, the economic justification for Turkey Point units 6 and 7 is increasingly dependent upon a 60 year life assumption, with that 60 year life starting twelve years from now. In FP&L's analysis in 5 of the 7 cases assuming a 40 year life, Turkey Point falls in the category that FP&L categorizes as "may" be economic. That is a weak endorsement of an investment that according to FP&L witness Steven Scroggs will range from $13.7 to $20 billion. All signs clearly point to the need for a thorough, in-depth evaluation of the Turkey Point units 6 and 7 investment at this time, when it is clear that the circumstances under which the investment was approved have changed radically. Additionally, the time is opportune. Sunk costs are still relatively low and the need for the capacity is well into the future. At this juncture, the impact on customers of terminating the project and having the sunk costs reflected in rates would be manageable. A thorough investigation at this time could avoid two potentially bad outcomes.

The first would be an outcome where several years down the road such an examination reveals the plant is not viable and sunk costs have grown to the point where they are a much larger burden on ratepayers. The second is an outcome where several years down the road such an examination reveals the plant is viable on a going forward basis but will be more costly on a total costs basis than the alternative. The point is that the circumstances at the current time both require and facilitate a more in depth examination of the Turkey Point units 6 and 7 investment than FP&L has conducted. Projects can take on a life of their own and the simple facts that, first, the natural gas price outlook has changed radically from when Turkey Point units 6 and 7 were initially approved and, second, the need for capacity has moved far enough into the future to raises concerns over how the project can maintain economic feasibility.

10. Q. ARE THERE SPECIFIC FACTORS THAT SHOULD BE CONSIDERED BUT THAT ARE NOT CONSIDERED IN FP&L'S FEASIBILITY ANALYSIS?

A. Yes. The FP&L feasibility analysis in this case does not sufficiently consider or explain the following factors:

- The consequences of assuming that natural gas-fired alternatives will add $ 1.7 billion in the NPV of revenue requirements.
- The consequences of the assumptions with respect to carbon ("CO^2") costs.
- The time pattern of rate impacts and the risks associated with benefits that take so long to materialize.
- The uncertainty of the construction schedule and costs assumptions.

At a minimum, these issues need to be fully explored.

11. Q. WHAT FLAWS DO YOU SEE WITH THE ASSUMPTIONS MADE FOR THE TRANSMISSION COSTS AND THE CARBON ("CO^2") COST BENEFITS OF TURKEY POINT UNITS 6 AND 7?

A. The units only appear economic because of these two assumptions. Absent these projected savings in transmission and CO^2 costs, the breakeven cost would be at least 20% below the bottom end of the non-binding cost range in all seven scenarios that FP&L examined assuming a forty year life of the reactors. Assuming a 60 year life, the breakeven cost would be below the bottom end of the non-binding cost range in five of the seven scenarios that FP&L examined and would be below the midpoint of the non-binding cost range in two of the seven

scenarios that FP&L examined. In no scenario would the breakeven cost exceed the midpoint of the non-binding cost range. I believe it is fair to say that given these economics, the project could not be viewed as viable. Hence, it is also fair to say that the feasibility of the project depends upon the assumptions made with respect to the transmission costs associated with the gas-fired alternative to Turkey Point units 6 and 7 and with respect to the carbon cost assumptions.

12. Q. WHAT CONCERNS DO YOU HAVE WITH RESPECT TO THE ASSUMPTION MADE IN FP&L'S SUBMISSION CONCERNING THE TRANSMISSION COMPONENT OF THE ALTERNATIVE TO THE PROJECT?

A. It is my understanding that FP&L's analysis assumed that if gas-fired combined cycle units ("CCs") are constructed as an alternative to Turkey Point units 6 and 7, they will not be able to be constructed in southeast Florida. Hence, an alternative will require a transmission investment with a NPV of revenue requirements of $ 1.7 billion in excess of that transmission investment associated with Turkey Point units 6 and 7 to import the power from the north. This one assumption increases the breakeven cost by over $ 800 per KW. Prior to the Commission accepting, as reasonable, FP&L's feasibility analysis, which would

result in substantial commitments and investment costs, it should require FP&L to fully examine and support this assumption. To do otherwise would be imprudent.

13. Q. WHAT CONCERNS DO YOU HAVE WITH RESPECT TO THE CARBON ("CO^2") COST ASSUMPTION IN FP&L'S FEASIBILITY ANALYSIS?

A. This assumption is even more critical. I estimate that carbon costs, depending upon the environmental case, add from just over $ 1400 per KW to over $ 2600 per KW to the breakeven cost. I do not think it is unreasonable to attach a monetary value to carbon as over the 2027 to 2088 period during which Turkey Point units 6 and 7 would operate, some type of carbon limit and associated costs would appear more likely than not. At a minimum, however, the Commission should be fully informed of the importance of this assumption and the very large contribution of this factor to the economic feasibility of Turkey Point units 6 and 7. With carbon costs adding between $ 1400 per KW and $ 2600 per KW to breakeven costs, it is reasonable to say that the economic feasibility of Turkey Point units 6 and 7 hinges on the avoided carbon costs. However, the carbon price assumptions made by FP&L do not pass a common sense test. The carbon price assumed in 2026 rises over a 43 year period by a factor of over 20 times reaching up to eight times that which would result from inflation alone. In

comparison, over a 43 year period from 1972 to the present, the cost of tuition at Harvard rose by three times that which would result from inflation alone. I use this example because the cost of college tuition is a primary example of a cost that is out of control and rising rapidly in real terms. A price forecast that predicts a price will be 8 times the increase resulting from inflation is not consistent with common sense. I would also note that FP&L forecasts sulfur dioxide allowance prices to be zero. This is in line with consensus. But it does raise a concern that if over time market prices for sulfur dioxide allowances, which reached as high as $ 800 a ton, have fallen to zero in just over 20 years, does it make any sense that CO^2 prices in 54 years from the present will be at level 8 times that which would result from just inflation? Because the assumption is so critical to the feasibility of the plant, it would be imprudent to not thoroughly examine this assumption before making a commitment of investment that ratepayers will bear whether or not the plant is completed. The current forecast used by FP&L was developed by one outside consultant and is not supported by testimony in this proceeding, but is critical to the conclusion that the Turkey Point units 6 and 7 project is reasonable and viable. I calculated carbon impacts by ratably spreading the 290 million tons of carbon that is claimed to be avoided by the addition of Turkey Point units 6 and 7 (see page 26, line 14 of testimony of Richard O. Brown) over the units'

operating life and then valuing each year's ratable reduction by the annual carbon price assumption for the relevant environmental scenario. Carbon reductions should be more or less ratable as Turkey Point is replaced with very efficient capacity in the alternate scenario. In any case given the pattern of carbon price escalation variations in annual carbon reductions from a ratable pattern would not have a material impact on results. I discounted the aggregate carbon values to the beginning of 2015, while FP&L discounts these values to year end 2015, thereby conservatively underestimating somewhat the impact of FP&L's extreme carbon assumption. Additionally, I calibrated the reasonableness of the estimates I made of the carbon costs impact assumption on breakeven costs by comparing the breakeven cost differences between FP&L's Environmental 1 and Environmental 2 cases. The primary difference between those two cases is the cost of carbon.

14. Q. ASSUME HYPOTHETICALLY THAT FP&L'S CARBON ("CO^2") COST FORECAST WAS REASONABLE. WOULD THE FP&L FEASIBILITY ANALYSIS THEN BE A REASONABLE BASIS FOR CONCLUDING THAT TURKEY POINT UNITS 6 AND 7 WAS COST-EFFECTIVE FOR RATEPAYERS?

A. No, the FP&L analyses would still be seriously deficient. In any planning analysis, simplifications are required to perform reasonable analysis without examining every possible option. These simplifications must be examined to understand what assumptions have been made and their effects on the resulting analysis. One simplification that FP&L has made is to not look at timing options. By this I mean that FP&L has not looked at deferring new nuclear in service dates until, for example, 2047 and meeting interim needs with gas plants. FP&L has not looked at other non-carbon emitting technologies that are, in the long run, potentially more economic than new nuclear plants. The extremely high emission costs assumed by FP&L could result in radical changes to the level and to the seasonal and hourly pattern of demand and there is no indication that FP&L has examined these potential changes. Normally, judgments must be made to keep the analysis tractable. Even given the scope of investment, $ 13 to $ 20 billion, such judgments that limit scope can be reasonable. However, FP&L's judgments

fail to be reasonable because the future assumed is radically different from the present. FP&L assumes that carbon prices will rise by eight times inflation. A scenario where the cost of carbon rises by eight times inflation qualifies as radically different. In such a case, an experienced planner would recognize that the typical analyses and typical simplifications are not reasonable in the context of a radically different carbon cost scenario. Hence, even if FP&L's carbon assumptions, as posited in the hypothetical, were reasonable, FP&L's analysis cannot be relied on by an experienced planner to produce a reasonable result with respect to the costs effectiveness of Turkey Point units 6 and 7.

15. Q. CAN YOU PROVIDE AN ADDITIONAL EXAMPLE OF WHY YOU CONSIDER FP&L'S CARBON COST ASSUMPTIONS EXTREME?

A. Yes. In reviewing data that FP&L provided in a request for a production of documents, I observed that in the high fuel cost scenario for Environmental Case 3 without Turkey Point units 6 and 7, total system fuel costs in 2067 are $ 28 billion while total system emission costs are $ 57 billion. Nitric oxide costs are included in emission costs but are constant in real terms and it is carbon costs that drive this result. In my opinion an analysis that shows total system emission costs being double total system fuel costs (and remember this is the high fuel cost

scenario), is extreme and cannot be relied upon to support a finding of feasibility without extensive probing of the reasonableness of the assumption leading to such a result.

16. Q. HAVE YOU PREPARED EXHIBITS THAT WOULD SHOW THE IMPACT ON BREAKEVEN COST OF ALTERNATE ASSUMPTIONS WITH RESPECT TO THE TRANSMISSION ADVANTAGE AND CARBON COST ADVANTAGE?

A. Yes. Exhibits ETM-2 and ETM-3 show the impact of alternate assumptions for several different scenarios with respect to the transmission and carbon cost advantages of Turkey Point units 6 and 7. I have used FP&L's assumptions for all other factors and FP&L's methodology. In the vast majority of scenarios assuming a forty year life, breakeven costs are below the bottom end of the non-binding cost range. In the vast majority of scenarios assuming a sixty year life, breakeven costs are within the non-binding cost range – the zone that FP&L characterizes as "may" be economic. These exhibits clearly illustrate that economic feasibility comes from a single source: the extreme assumptions made with respect to carbon value.

17. Q. WHAT CONCERNS DO YOU HAVE WITH THE NUMBER OF YEARS REQUIRED FOR THE INVESTMENT TO PRODUCE A NET PRESENT VALUE ("NPV") BENEFIT?

A. The difference between the 40 year and the 60 year projections raise significant concerns in this regard. The time pattern of costs and benefits is difficult to visualize as the cases with Turkey Point and without Turkey Point have radically different rate impacts over time. Even assuming that costs and schedule are as planned, FP&L customers will pay over $2 billion toward Turkey Point units 6 and 7 before a single KWH is produced. With the gas alternative, the amounts paid before the plant produces would be an order of magnitude lower as the plants are much less capital intensive and have a much shorter construction period. I do not question the likelihood that Turkey Point, if built would operate for 60 years. However, the economic feasibility seems to rely on the 60 year case and in my opinion, the fact the plant will likely operate for 60 years is not the largest issue. The largest issue is: if an investment is not feasible over 40 years and requires 60 years to attain feasibility on a present value basis, does the investment present an acceptable risk profile? In this case, we have an investment that will not produce power until 2027, will require ratepayer funding of at least $ 2 billion through 2027 and will only begin to breakeven on a present value basis 40 years after it

enters service, in the late 2060s or 50 years from today. Only a minority of ratepayers who pay the $ 2 billion in pre operation funding will ever receive a present value payback and even they will have to wait over 50 years from today to break even. That is a very long term view. A legitimate question for the Commission to address is whether the time pattern of costs and benefits is reasonable even if it finds that over a 60 year life or over 70 years from today the investment is likely to eventually result in a present value benefit. A very different set of ratepayers will pay than the set that will benefit.

18. Q. WHAT CONCERNS DO YOU HAVE WITH THE COST AND SCHEDULE ASSUMPTIONS?

A. Cost and schedule are always a concern with a major construction project. It is likely that if the Commission were to require a thorough examination of the transmission and carbon advantage of Turkey Point 6 and 7, that achieving ultimate construction on schedule and near the low end of the non-binding cost range will be critical to feasibility. FP&L's economic feasibility analyses make it appear that the project is robust to the final cost. I do not believe this is correct. If a thorough examination were to confirm feasibility through breakeven costs in the range of the non-binding costs estimate, the finding of feasibility would be

contingent on the plant coming in on schedule and on budget. Hence, in my opinion a more complete review of construction costs and schedule is needed.

19. Q. DO YOU BELIEVE IT IS LIKELY THAT THE VALUE OF FUEL DIVERSITY PROVIDED BY TURKEY POINT UNITS 6 AND 7 COULD OUTWEIGH POTENTIAL SHORTCOMINGS IN THE ANALYSIS WITH RESPECT TO CARBON COST ASSUMPTIONS?

A. In my opinion, that would be unlikely. If feasibility is to be justified based on fuel diversity, the value of that diversity should be quantified. FP&L has not quantified the value to ratepayers of increased fuel diversity.

20. Q. PLEASE SUMMARIZE YOUR FINDINGS.

A. The investment in Turkey Point units 6 and 7 was approved at a time when the natural gas supply and price outlook was much less optimistic than it is today. Since the time that the investment in Turkey Point units 6 and 7 was approved, the need for capacity from the units has slipped to 2027. FP&L's analyses in this proceeding show that there is an alternative plan that would and could be implemented if Turkey Point units 6 and 7 were cancelled. FP&L's analyses also provide data that clearly demonstrates that Turkey Point units 6 and 7 are only

economically feasible at the current time because of FP&L's assumptions with respect to the incremental transmission costs associated with the alternative and the carbon costs savings alleged by FP&L from Turkey Point units 6 and 7. Believing those assumptions requires believing that, in 2067, FP&L's total system emission costs will be twice FP&L's total system fuel costs in a high fuel cost scenario. Nuclear plants that were planned on a merchant basis around the time that Turkey Point units 6 and 7 were approved are not moving forward. The Plant Vogtle expansion in Georgia that was also approved in a similar time frame is well behind schedule and is being challenged after having expended over $ 2 billion. Even assuming that FP&L's assumptions and analyses were all perfect, present value benefits in many cases are not achieved until 50 years from now, while customers pay $ 2 billion toward construction financing over the next 12 years. This constitutes a very long payback period and many current customers will never be paid back. Currently, only $ 250 million has been invested in Turkey Point units 6 and 7. Prior to approving any significant additional expenditures or commitments it would be prudent for the Commission to require an in-depth investigation that, at a minimum, examines the reasonableness of the transmission costs advantage attributed to Turkey Point units 6 and 7, the reasonableness of the magnitude of the carbon cost advantage attributed to Turkey

Point units 6 and 7, the degree of confidence in the non-binding construction cost range and the construction schedule and the reasonableness of proceeding with an investment that may only achieve a present value breakeven over 50 years from today. The time is opportune for such an investigation because the level of sunk investment that would need to be recovered is manageable. While the record and schedule in this proceeding does not allow for such in depth examinations, FP&L is not intending to make significant additional investments or commitments over the next year. The Commission would be prudent to require a more in depth examination of Turkey Point units 6 and 7 before any such investments or commitments are made.

21. Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes.

EUGENE T. MEEHAN
INDEPENDENT CONSULTANT

Mr. Meehan is an Independent Consultant specializing in regulatory economics and electricity markets, power procurement, electric planning and asset and corporate transaction involving electric marketing, production, transmission and distribution. He has over thirty-five years of experience consulting with electric and gas utilities, regulators and governments and has testified as an expert witness before numerous state and federal regulatory agencies, as well as appeared in federal court and arbitration proceedings.

Mr. Meehan's practice concentrates on serving energy industry clients, with a focus on helping clients manage the transition from regulatory to more competitive environments. He has performed consulting assignments for over fifty large electric, gas, and combination utilities in the areas of retail access, regulatory strategy, strategic planning, financial and economic analysis, merger and acquisition advisory services, power contract analysis, market power and market definition, stranded cost analysis, power pooling, power markets and risk management, ISO and PX development, and costing and pricing. In addition, he has advised numerous utilities on power procurement issues and administered power procurements on behalf of utilities and regulators.

Mr. Meehan has experience leading advisory work on several major restructuring and unbundling assignments. These assignments were multi-year projects that involved integration of regulatory and business strategy, as well as development of regulatory filings associated with the recovery of stranded cost and rate unbundling.

Education

Boston College, BA, Economics, *cum laude*
New York University (NYU), Graduate School of Business, completed core courses for the doctoral program.

Professional Experience

2015 - **Independent Consultant**

NERA Economic Consulting

1999-2014 Senior Vice President

1996-1999 Vice President

1973-1980 Senior Economic Analyst; Research Assistant

Deloitte & Touche Consulting Group

1994-1996 Principal

Energy Management Associates, Inc.

1980-1994 Vice President

Areas of Expertise

Restructuring/Stranded Cost Recovery

Mr. Meehan has directed several multi-year projects associated with restructuring and stranded cost recovery. These projects involved facilitating the development of an integrated regulatory and business strategy and formulating regulatory filings to accomplish strategy. As part of these assignments, Mr. Meehan facilitated sessions with senior management to set and track filing strategy. Clients include Public Service Gas & Electric and Baltimore Gas and Electric.

Unbundling/Generation Pricing

Mr. Meehan has formulated unbundling strategies, with a specialization in generation pricing. He has advised several utilities in standard offer pricing and has testified on shopping credits on behalf of First Energy and Baltimore Gas and Electric.

Power Procurement

Mr. Meehan has been involved in power procurement activities for a variety of utilities and regulatory agencies. He has advised utilities in developing and implementing evaluation processes for new generation, with the objective of achieving the best portfolio evaluation. He has helped regulators in Ireland and Canada design and implement portfolio evaluation processes. He has testified before FERC and state regulatory agencies on competitive power procurement. In addition, Mr. Meehan helped to design and implement the New Jersey BGS auction process.

Power Contracts

Mr. Meehan has extensive experience with power contracts and power contract issues. He has reviewed and testified on the three principal types of power contracts: integrated utility to integrated utility contracts, IPP to utility contract, and integrated or wholesale utility to distribution utility contracts. He has testified in power contracts disputes on behalf of Carolina Power and Light, Duke Power Company, Southern Company, Orange and Rockland Utilities, and Tucson Electric Power. He has also advised Oglethorpe Power Corporation in the reform of its wholesale contracts with its distributor cooperative members.

Retail and Wholesale Settlements

In addition to his expertise on power pooling issues, Mr. Meehan has significant experience with assignments related to the settlement process. He has focused on the issues of credit management as new entrants appear in retail and wholesale markets and has designed efficient specifications for retail settlement systems, including the use of load profiling, and examined the risk and cost allocation issues of alternative settlement systems.

Risk Management

Mr. Meehan has advised several large utilities on price risk management. These assignments have included evaluation of price management service offers solicited from power marketers in association with management of assets and entitlements, as well as provision of price managed service for various terms.

Marginal Costs

Mr. Meehan has provided comprehensive marginal cost analyses for over 25 North American Utilities. These assignments required detailed knowledge of utility operations and planning.

Power Supply and Transmission Planning

Mr. Meehan has advised electric utilities on economic evaluations of generation and transmission expansion. He has testified on the economics of particular investments, the prudence of planning processes, and the prudence of particular investment decisions. He has reviewed the economic and rate implications of several large nuclear plants and has testified before state and federal regulators with respect to nuclear economics and the prudence of nuclear investments.

Generation Strategy

Mr. Meehan has led NERA efforts on a client task force charged with developing an integrated generation asset/power marketing strategy.

Power Pooling

Mr. Meehan has in-depth working knowledge of the operating, accounting, and settlement processes of all United States power pools and representative international power pools. He has provided consulting services for New York Power Pool members on a continuous basis since 1980, advising the Pool and its members on production cost modeling, transmission expansion, competitive bidding and reliability, and marginal generating capacity cost quantification. In NEPOOL, he has quantified the benefits of continued utility membership in the Pool and the impact of the Pool settlement process on marginal cost. He has worked with a major PJM utility to explore the impact of PJM restructuring proposals upon generating asset valuation and examine the implications of alternative restructuring proposals. He has consulted for Central and Southwest Corporation, Entergy, and Southern Company on issues that involved the internal pooling arrangements of the utility operating companies of those holding companies, as well as for various utilities on the impact of pooling arrangements on strategic alternatives.

Representative Assignments

Worked with Public Service Electric & Gas Company (PSE&G) to direct a three year NERA advisory effort on restructuring. Facilitated a two-day senior management meeting to set regulatory strategy in 1997. Throughout 1997 and 1998, worked over half time at PSE&G to help implement that strategy and advised on testimony preparation, cross-examination, and briefing. Also advised PSE&G on business issues related to securitization, energy settlement and credit requirements for third party suppliers. During 1999, advised PSE&G during settlement negotiations and litigation of the settlement. PSE&G achieved a restructuring outcome that involved continued ownership of generation by an affiliate and the securitization of $2.5 billion in stranded costs.

Worked on separate assignments for a large utility in the Northeast and a large utility in the Southeast, advising on the evaluation of risk management offers from power marketers. The assignments included reviewing proposals, attending interviews with marketers and providing advice on these, and the developing analytical software to evaluate offers.

Worked with government of Ontario beginning in 2004 to help design the RFP and economic evaluation process for the solicitation of 2500 Mw of new generating capacity. Supervising NERA's portfolio-based economic evaluation on behalf of the Ontario Ministry of Energy.

Testified on behalf of Pacific Gas & Electric Company before the FERC in a case benchmarking the PSA between the distribution utility and a soon-to-be-created generating company. This effort involved developing detailed expertise in applying the Edgar standard and a detailed review of DWR procurement during the western power crisis. In addition, this effort involved the review of more than 100 power contracts in the WECC.

Directed NERA's efforts, on behalf of the electricity regulator in Ireland, to design an RFP and implementation process for the purchase of 500 Mw of new generating capacity in 2003. NERA advised on the RFP, the portfolio evaluation method, and the power contract and also conducted the economic evaluation.

Reviewed the economic evaluation conducted by Southern Company Service for affiliated operating companies in connection with an RFP for over 2000 Mw of new generating capacity. Submitted testimony before FERC on behalf of Southern Company Service.

Worked with Baltimore Gas and Electric (BG&E) to conduct a one and one-half year consulting assignment that involved providing restructuring advice. The project began in March/April 1998 with senior management discussions and workshops on plan development and filing strategy. Advised BG&E in the development of testimony, rebuttal testimony, and public information dissemination. Worked to review and coordinate testimony from all witnesses and offered testimony on shopping credits and in defense of the case settlement. BG&E achieved a restructuring outcome enabling it to retain generation ownership. As part of this assignment, advised BG&E on generation valuation and unregulated generation business strategy.

Directed the efforts of a large Southeastern utility to develop a short-term power contract portfolio and to evaluate the relative value of power options, forwards, and unit contracts to determine the optimal mix of instruments to manage price risk.

Testified for XCEL Energy on the use of competitive bids for new generation needs. Examined whether XCEL was prudent not to explore a self-build plan and the reasonableness of relying on ten-year or shorter contracts as opposed to life-of-facility contracts, in order to meet needs and facilitate a possible future transition to competition. This project addressed the comparability of fixed bids to rate base plant additions.

Advised and testified on behalf of First Energy in the Ohio restructuring proceeding on the issues of generation unbundling and stranded cost. Defended the First Energy shopping credit proposal.

Advised Consolidated Edison and Northeast Utilities on merger issues and testified in Connecticut and New Hampshire merger proceedings. Testimony focused on retail competition in gas and electric commodity markets.

Directed NERA's effort to train selected representatives of a major European power company in American power marketing and risk management practices. The project involved numerous meetings and interviews with power marketing firms.

Led NERA's effort to advise the New England ISO on the development of an RTO filing. Examined performance-based ratemaking for transmission and market operator functions.

Examined ERCOT power market conditions during the period of time from 1997 to 1999 and testified on behalf of Texas New Mexico Power Company for the prudence of its power purchase activity.

Advised a Midwestern utility on restructuring of a wholesale contract with an affiliate. Involved forecasting of the unbundled wholesale cost-of-service and market prices, as well as development of a regulatory strategy for gaining approval of contract restructuring and the transfer of generation from regulated to EWG states.

Performed market price forecasts for numerous utility clients. These forecasts have employed both traditional modeling and newly developed statistical approaches.

Examined the credit issues associated with the entry of new entities into retail and wholesale settlement market. These assignments involved a review of current Pool credit procedures, examination of commodity and security trading credit requirements, coordination with financial institutions, and recommendations concerning credit exposure monitoring, credit evaluation processes, and credit requirements.

Oversight of EMA's consulting and software team in designing and implementing the LOLP capacity payment, a portion of the UK wholesale settlement system.

Advised Oglethorpe Power Corporation in the reform of its contracts with its distribution cooperative members and the evolution of full requirement power wholesale power contracts into contracts that preserve Oglethorpe's financial integrity and are suitable for a competitive environment.

Developed long run marginal and avoided costs of natural gas service, as well as avoided cost methods and procedures. These costs have been used primarily for the analysis of gas DSM opportunities. Clients include Consolidated Edison Company, Southern California Edison Company, Niagara Mohawk Power Corporation, and Elizabethtown Gas Company.

Review of power contracts and testimony in numerous power contract disputes

Development of long run avoided costs of electricity service and avoided cost methods and procedures. These costs have been used to assess DSM and cogeneration, as well as to develop integrated resource plans. Clients include Public Service Company of Oklahoma, Central Maine Power Company, Duquesne Light Company, and the New York investor-owned utilities.

Advised Central Maine Power Company (CMP) on the development of a competitive bidding framework. This framework was implemented in 1984 and was the first of its kind in the nation. CMP adopted the framework outlined in EMA's report and won prompt regulatory approval.

Advised a utility in the development of an incentive ratemaking plan for a new nuclear facility. This assignment involved strategic analysis of alternate proposals and quantification of the financial impact of various ratemaking alternatives. Presented strategic and financial results in order to convince senior management to initiate negotiations for the incentive plan.

Advised and testified on behalf of the New York Power Pool utilities on the methodology for measuring pool marginal capacity costs. This work included development of the methodology and implementation of the system for quantifying LOLP-based marginal capacity costs.

Provided testimony on behalf of the investor-owned electric utilities in New York State, concerning the proper methodology to use when analyzing the cost-effectiveness of conservation programs. This methodology was adopted by the Commission and used as the basis for DSM evaluation in New York from 1982 through 1988.

Developed the functional design of a retail access settlement system and business processes for a major PJM combination utility. This design is being used to construct a software system and develop business procedures that will be used for retail settlements beginning January 1999.

Reviewed the power pool operating and interchange accounting procedure of the New York Power Pool, the Pennsylvania, New Jersey, Maryland Interconnection, Allegheny Power System, Southern Company, and the New England Power Pool as part of various consulting assignments and in connection with the development of production simulation software.

Summarized and analyzed the operational NEPOOL to examine the feasibility of incorporating NEPOOL interchange impacts with Central Maine and accounting procedure of the New England Power Pool Power Company's buy-back tariffs.

Developed and presented a two-day seminar delivered to electric industry participants in the UK (prior to privatization), outlining the structure and operation of power pools and bulk power market transactions in North America.

Benchmark analysis and FERC testimony of PGE's proposed twelve-year contract between PG&E and Electric Gen LLC (contract value in excess of $15 billion).

Responsible for NERA's overall efforts in advising New Jersey's Electric Distribution Companies on the structuring and conduct of the Basic Generation Service auctions (the 2002 auction involved $3.5 billion, and the 2003 and 2004 auctions involved over $4.0 billion).

Publications, Speeches, Presentations, and Reports

Capacity Adequacy in New Zealand's Electricity Market, published in *Asian Power*, September 18, 2003

Central Resource Adequacy Markets For PJM, NY-ISO AND NE-ISO, a report written February 2004

Ex Ante or *Ex Post*? Risk, Hedging and Prudence in the Restructured Power Business, The Electricity Journal, April 2006

Distributed Resources: Incentives, a white paper prepared for Edison Electric Institute, May 2006

Restructuring Expectations and Outcomes, a presentation presented at the Saul Ewing Annual Utility Conference: The Post Rate Cap and 2007 State Regulatory Environment, Philadelphia, PA, May 21, 2007

Making a Business of Energy Efficiency: Sustainable Business Models for Utilities, prepared for Edison Electric Institute, August 2007

Perspectives on Ownership Issues for Traditional Generating & Alternative Resources: Should we allow utilities back in the market or limit ownership to merchants? A presentation presented at the Energy in the Northeast Conference sponsored by Law Seminars Intl., October 18, 2007

Restructuring at a Crossroads, presented at Empowering Consumers Through Competitive Markets: The Choice Is Yours, Sponsored by COMPETE and the Electric Power Supply Association, Washington, DC, November 5, 2007

*Competitive Electricity Markets: The Benefits for Customers and the Environmen*t, a white paper prepared for COMPETE Collation, February 2008

The Continuing Rationale for Full and Timely Recovery of Fuel Price Levels in Fuel Adjustment Clauses, The Electricity Journal, July 2008

Impact of EU Electricity Competition Directives on Nuclear Financing presented to: SMI – Financing Nuclear Power Conference, London, UK, May 20, 2009

Using History As A Guide, a presentation presented at the Electric Power Research Institute (EPRI) Conference: Electricity Pricing Structures for the 21st Century, July 14 – 15, 2011, Nashville, TN

Testimony

Forums

Arkansas Public Service Commission

Federal Energy Regulatory Commission

Florida Public Service Commission

Maine Public Utilities Commission

Minnesota Public Service Commission

Nevada Public Service Commission

New York Public Service Commission

Nuclear Regulatory Commission – Atomic Safety and Licensing Board

Oklahoma Public Service Commission

Public Service Commission of Indiana

Public Utilities Commission of Ohio

Public Utilities Commission of Nevada

Public Utilities Commission of Texas

Public Utilities Commission of New Hampshire

United States District Court

United States Senate Committee on Energy and Natural Resources

Various arbitration proceedings

Clients

American Electric Power Company

Arkansas Power & Light Company

Baltimore Gas & Electric

Carolina Power & Light Company

Central Maine Power

Consolidated Edison Company of New York, Inc.

Dayton Power and Light Company

Florida Coordinating Group

Houston Lighting & Power Company

Minnesota Power and Light Company

Nevada Power Company

Niagara Mohawk Power Corporation

Northern Indiana Public Service Company

Oglethorpe Power Corporation

Pacific Gas and Electric Company

Power Authority of the State of New York

Public Service and Electric Company

Public Service Company of Oklahoma

Sierra Pacific Power Company

Southern Company Services, Inc.

Tucson Electric Power Company

Texas-New Mexico Power Company

Recent Expert Testimony and Expert Reports

Supplemental Testimony on behalf of Texas-New Mexico Power Company, Docket No. 15660, September 5, 1996.

Direct Testimony on behalf of Long Island Lighting Company before the Federal Energy Regulatory Commission, September 29, 1997.

Rebuttal Testimony on behalf of Texas-New Mexico Power Company, SOAH Docket No. 473-97-1561, PUC Docket No. 17751, March 2, 1998.

Prepared Testimony and deposition testimony on behalf of Central Maine Power Company, United Stated District Court Southern District of New York, 98-civ-8162 (JSM), March 5, 1999.

Prepared Direct Testimony Before the Public Service Commission of Maryland on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, June 1999.

Rebuttal Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, March 22, 1999.

NORCON Power Partners LP v. Niagara Mohawk Energy Marketing, before the United States District Court, Southern District of New York, June 1999.

Prepared Supplemental Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, July 23, 1999.

Prepared Supplemental Reply Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, August 3, 1999.

Direct Testimony on behalf of Niagara Mohawk, Before the New York State Public Service Commission, PSC Case No. 99-E-0681, September 3, 1999.

Rebuttal Testimony on behalf of Niagara Mohawk, PSC Case No. 99-E-0681 Before the New York State Public Service Commission, November 10, 1999.

Arbitration deposition on behalf of Oglethorpe Power Corporation, last quarter of 1999.

Direct Testimony Before the Public Utilities Commission of Ohio on behalf of FirstEnergy Corporation, Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company, Case No. 99-1212-EL-ETP re: Shopping Credits.

Direct Testimony on behalf of Niagara Mohawk, Before the New York State Public Service Commission, PSC Case No. 99-E-0990, February 25, 2000.

Testimony on behalf of Consolidated Edison Company of New York, Inc., State of Connecticut, Department of Public Utility Control, Docket No.: 00-01-11, April 28, 2000 and June 30, 2000.

Testimony on behalf of Texas-New Mexico Power Company, Fuel Reconciliation Proceeding before the Texas PUC, June 30, 2000.

Testimony on behalf of Consolidated Edison Company of New York, Inc., Before the New Hampshire Public Service Commission, Docket No.: DE 00-009, June 30, 2000.

Rebuttal Testimony Before the Public Utilities Commission of the State of Colorado, Docket No. 99A-549E, November 22, 2000.

Testimony Before the Public Utilities Commission of the State of Colorado, Docket No. 99A-549E, January 19, 2001.

DETM Management, Inc. Duke Energy Services Canada Ltd., And DTMSI Management Ltd., Claimants vs. Mobil Natural Gas Inc., And Mobil Canada Products, Ltd., Respondents. American Arbitration Association Cause No. 50 T 198 00485 00, August 27, 2001.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution

Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv) Docket No.: EX01050303, October 4, 2001.

Direct Testimony Before the Federal Energy Regulatory Commission on behalf of Pacific Gas and Electric Company, Docket No.: ER02-456-000, November 30, 2001.

Fourth Branch Associates/Mechanicville vs. Niagara Mohawk Power Corporation, January 2002 (Expert Report).

Arbitration Deposition on behalf of Oglethorpe Power Corporation, March 2002.

Direct Testimony and Deposition Testimony Before the Federal Energy Regulatory Commission on behalf of Electric Generation LLC in Response to June 12 Commission Order, Docket No.: ER02-456-000, July 16, 2002.

Rebuttal Testimony Before the Federal Energy Regulatory Commission on behalf of Electric Generation LLC in Response to June 12 Commission Order, Docket No.: ER02-456-000, August 13, 2002.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company, in the matter of the Application of Nevada Power Company to Reduce Fuel and Purchased Power Rates, PUCN Docket No. 02-11021, November 8, 2002 and subsequent Deposition Testimony.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, Docket No. 03-1014, January 10, 2003.

Direct Testimony Before the Public Utility Commission Of Texas on behalf of Texas-New Mexico Power Company, Application Of Texas-New Mexico Power Company For Reconciliation Of Fuel Costs, April 1, 2003.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company, PUCN Docket No. 02-11021, April 1, 2003.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company, Docket No. 03-1014, May 5, 2003.

Testimony Before the Public Service Commission of New York on behalf of Consolidated Edison Company of New York, Inc., Case No.: 00-E-0612, September 19, 2003.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv), September 2003.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Deferred Energy Case, November 12, 2003.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, January 12, 2004.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, May 28, 2004.

Direct Testimony on behalf of Texas-New Mexico Power Company, First Choice Power Inc. and Texas Generating Company LP to Finalize Stranded Cost under PURA § 39.262, January 22, 2004.

Rebuttal Testimony on behalf of Texas-New Mexico Power Company, First Choice Power Inc. and Texas Generating Company LP to Finalize Stranded Cost under PURA § 39.262, April, 2004.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv), September 2004.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Deferred Energy Case, November 9, 2004.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, January 7, 2005.

Expert Report on behalf of Oglethorpe Power Corporation, March 23, 2005.

Arbitration deposition on behalf of Oglethorpe Power Corporation, April 1, 2005.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's December 2005 Deferred Energy Case.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2006 Deferred Energy Case, January 13, 2006.

Remand Rebuttal for Public Service Company of Oklahoma before the Corporation Commission of the State of Oklahoma, Cause No. PUD 200200038, **Confidential**, March 17, 2006

Answer Testimony on behalf of the Colorado Independent energy Association, AES Corporation and LS Power Associates, LP, Docket No. 05A-543E, April 18, 2006.

Cross-Answer Testimony on behalf of the Colorado Independent energy Association, AES Corporation and LS Power Associates, LP, Docket No. 05A-543E, May 22, 2006.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2006 Deferred Energy Case, Docket No. 06-01016, June 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, December 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Application for Recovery of Costs of Achieving Final Resolution of Claims Associated with Contracts Executed During the Western Energy Crisis, December 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Application for Recovery of Costs of Achieving Final Resolution of Claims Associated with Contracts Executed During the Western Energy Crisis, December 2006.

Direct Testimony Before the Public Utilities Commission of the State of Hawaii, on behalf of Hawaiian Electric Company, Inc., Docket No. 2006-0386, December 22, 2006.

Direct Testimony Before the Public Utilities Commission of the State of Hawaii, on behalf of Hawaiian Electric Company, Inc., Docket No. 05-0315, December 29, 2006.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2007 Deferred Energy Case, January 2007.

Declaration Before the State of New York Public Service Commission, on behalf of Consolidated Edison Company of New York, Inc.'s Long Island City Electric Network, Case 06-E-0894 – Proceeding on Motion of the Commission to Investigate the Electric Power Outage and Case 06-E-1158 – In the Matter of Staff's Investigation of Consolidated Edison Company of New York, Inc.'s Performance During and Following the July and September Electric Utility Outages. July 24, 2007.

Direct Testimony Before The Public Utilities Commission of Colorado, In The Matter of the Application of Public Service Company of Colorado for Approval of its 2007 Colorado Resource Plan, April 2008.

Answer Testimony Before the Public Utilities Commission of the State of Colorado on behalf of Trans-Elect Development Company, LLC, and The Wyoming Infrastructure Authority, Docket No. 07A-447E, April 28, 2008.

Rebuttal Testimony Before the Public Utilities Commission of Nevada, Application of Sierra Pacific Power Company d/b/a/ NV Energy Seeking Acceptance of its Eight Amendment to its 2008-2007 Integrated Resource Plan, Docket No. 10-02023.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's 2008 Deferred Energy Case, February 2009.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2008 Deferred Energy Case, February 2009.

Direct Testimony Before the Public Utilities Commission of Texas, on behalf of Entergy Texas, Inc. Docket No. 33687, April 29, 2009.

Direct Testimony Before The Public Utilities Commission Of Nevada On Behalf of Nevada Power Company D/B/A Nevada Energy, 2010 – 2029 Integrated Resource Plan, June 26, 2009.

Before the Public Service Commission of New York, Case 09-E-0428 Consolidated Edison Company of New York, Inc. Rate Case, Rebuttal Testimony, September 2009.

Direct Testimony Before the Public Utilities Commission of Nevada on Behalf of Sierra Pacific Power Company's 2009 Deferred Energy Case, February 2010.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2009 Deferred Energy Case, February 2010.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2010 – 2029 Integrated Resource Plan, Docket No. 09-07003, July 2010.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Eighth Amendment to its 2008 – 2027 Integrated Resource Plan, Docket No. 10-03023, July 2010.

Rebuttal Testimony Before the Public Utilities Commission of Nevada, Application of Nevada power Company d/b/a NV Energy Seeking Acceptance of its Triennial Integrated Resource Plan covering the period 2010-2029, including authority to proceed with the permitting and construction of the ON Line transmission project, Docket No. 10-02009.

Rebuttal Testimony Before the Public Utilities Commission of Nevada, Petition of Nevada Power Company d/b/a NV Energy requesting a determination under NRS 704.7821 that the terms and conditions of five renewable power purchase agreements are just and reasonable and allowing limited deviation from the requirements of NAC 704.8885, Docket No. 10-03022.

Rebuttal Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company d/b/a NV Energy, 2010 Deferred Energy Case, Docket No. 10-03003, filed August 3, 2010

Rebuttal Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company d/b/a NV Energy Electric Department, 2010 Deferred Energy Case, Docket No. 10-03004, filed August 3, 2010

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company, d/b/a NV Energy, Docket No. 11-03 __ 2011 Electric Deferred Energy Proceeding, February 2011.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company, d/b/a NV Energy, Docket No. 11-03 __ 2011 Electric Deferred Energy Proceeding, February 2011.

Testimony Before the Atomic Safety and Licensing Board, Nuclear Regulatory Commission, In the Matter of Entergy Nuclear Operations, Inc., Dockets Nos. 50-247-LR and 50-286-LR, March 30, 2012.

Rebuttal Testimony Before the Public Utilities Commission of Ohio, In Support of AEP Ohio's Modified Electric Security Plan, Case No. 10-2929, May 11, 2012.

Prefiled Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company, d/b/a NV Energy, Docket No. 12-03 __ 2012 Electric Deferred Energy Proceeding, February 2012.

Prefiled Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company, d/b/a NV Energy, Docket No. 12-03 __ 2012 Electric Deferred Energy Proceeding, February 2012.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company, d/b/a NV Energy, Docket No. 13-03 __ 2013 Electric Deferred Energy Proceeding, February 2013.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company, d/b/a NV Energy, Docket No. 13-03 __ 2013 Electric Deferred Energy Proceeding, February 2013.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Sierra Pacific Power Company, d/b/a NV Energy, Docket No. 14-02 __ 2014 Electric Deferred Energy Proceeding, February 2014.

Direct Testimony Before the Public Utilities Commission of Nevada, on behalf of Nevada Power Company, d/b/a NV Energy, Docket No. 14-02 __ 2014 Electric Deferred Energy Proceeding, February 2014.

January 2015

Docket No. 150009-EI
2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project:
Case # 1 Analysis - 40-Year Operating Life; Total Costs,
Total Cost Differentials, and Breakeven Costs for All Fuel
and Environmental Compliance Cost Scenarios in 2015$
(millions, CPVRR, 2015 - 2068)
Exhibit ETM-2, Page 1 of 1

2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project:
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(millions, CPVRR, 2015 - 2068)

(1)	(2)	(3)	(4)	(5) = (3) - (4)	(6)				
Fuel Cost Forecast	Environmental Compliance Cost Forecast	Total Costs for Plans		Total Cost Difference Plan without TP 6 & 7 minus Plan with TP 6 & 7	Breakeven Nuclear Capital Costs ($/kW in 2015$) Per Exhbit ROB-5	Breakeven Nuclear Capital Costs ($/kW in 2015$) No Transmission Advantage	Breakeven Nuclear Capital Costs ($/kW in 2015$) No Transmission or Carbon Advantage	Breakeven Nuclear Capital Costs ($/kW in 2015$) No Transmission and 50% Carbon Advanatge	Breakeven Nuclear Capital Costs ($/kW in 2015$) 50% Transmission and 50% Carbon Advanatge
		Resource Plan w/ TP 6 & 7	Resource Plan w/o TP 6 & 7						
High Fuel Cost	Env I	140,810	151,571	10,762	5,254	4,424	3,001	3,712	4,127
High Fuel Cost	Env II	148,047	159,595	11,548	5,639	4,809	3,029	3,919	4,334
High Fuel Cost	Env III	155,298	167,645	12,348	6,031	5,201	3,064	4,132	4,548
Medium Fuel Cost	Env I	125,989	135,525	9,536	4,654	3,824	2,402	3,113	3,528
Medium Fuel Cost	Env II	133,186	143,498	10,312	5,034	4,204	2,425	3,314	3,729
Medium Fuel Cost	Env III	140,393	151,496	11,103	5,421	4,591	2,455	3,523	3,938
Low Fuel Cost	Env I	110,950	119,248	8,298	4,049	3,220	1,797	2,508	2,923

Note: The TP 6 & 7 non-binding cost estimate range to which the breakeven cost is compared is $3,844/kW to $5,589/kW in 2015$.

Docket No. 150009-EI
2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project:
Case # 2 Analysis - 60-Year Operating Life; Total Costs,
Total Cost Differentials, and Breakeven Costs for All Fuel
and Environmental Compliance Cost Scenarios in 2015$
(millions, CPVRR, 2015 - 2088)
Exhibit ETM-3, Page 1 of 1

2015 Feasibility Analyses Results for the Turkey Point 6 & 7 Project:
Case # 2 Analysis - 60-Year Operating Life; Total Costs,
Total Cost Differentials, and Breakeven Costs for All Fuel
and Environmental Compliance Cost Scenarios in 2015$
(millions, CPVRR, 2015 - 2088)

(1)	(2)	(3)	(4)	(5) = (3) - (4)	(6)				
Fuel Cost Forecast	Environmental Compliance Cost Forecast	Total Costs for Plans: Resource Plan w/ TP 6 & 7	Total Costs for Plans: Resource Plan w/o TP 6 & 7	Total Cost Difference Plan without TP 6 & 7 minus Plan with TP 6 & 7 *	Breakeven Nuclear Capital Costs ($/kW in 2015$) Per Exhibit ROB-6	Breakeven Nuclear Capital Costs ($/kW in 2015$) No Transmission Advantage	Breakeven Nuclear Capital Costs ($/kW in 2015$) No Transmission or Carbon Advantage	Breakeven Nuclear Capital Costs ($/kW in 2015$) No Transmission and 50% Carbon Advanatge	Breakeven Nuclear Capital Costs ($/kW in 2015$) 50% Transmission and 50% Carbon Advanatge
High Fuel Cost	Env I	165,666	178,785	13,119	6,408	5,578	3,815	4,696	5,111
High Fuel Cost	Env II	177,061	191,427	14,366	7,018	6,188	3,984	5,086	5,501
High Fuel Cost	Env III	188,470	204,108	15,638	7,640	6,809	4,165	5,487	5,902
Medium Fuel Cost	Env I	149,624	161,367	11,743	5,734	4,904	3,142	4,023	4,438
Medium Fuel Cost	Env II	160,969	173,950	12,982	6,341	5,511	3,307	4,409	4,824
Medium Fuel Cost	Env III	172,319	186,565	14,246	6,959	6,129	3,484	4,806	5,222
Low Fuel Cost	Env I	133,349	143,709	10,360	5,058	4,228	2,466	3,347	3,762

Note: The TP 6 & 7 non-binding cost estimate range to which the breakeven cost is compared is $3,844/kW to $5,589/kW in 2015$.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on the 22nd day of June, 2015, I served the foregoing document on all parties list in the attached Service List by e-mail.

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