BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 070650-EI

In the Matter of:

PETITION TO DETERMINE NEED FOR TURKEY POINT NUCLEAR UNITS 6 AND 7 ELECTRICAL POWER PLANT, BY FLORIDA POWER & LIGHT COMPANY.

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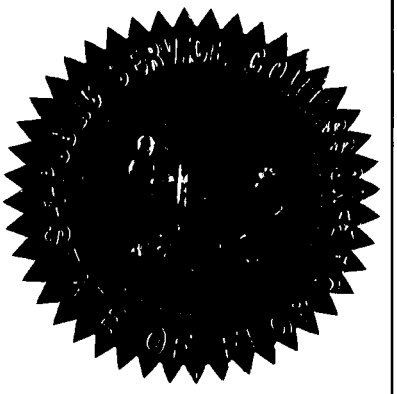

VOLUME 6

Pages 577 through 807

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PROCEEDINGS:	HEARING
BEFORE:	CHAIRMAN MATTHEW M. CARTER, II COMMISSIONER LISA POLAK EDGAR COMMISSIONER KATRINA J. McMURRIAN COMMISSIONER NANCY ARGENZIANO COMMISSIONER NATHAN A. SKOP
DATE:	Thursday, January 31, 2008
TIME:	Commenced at 9:30 a.m. Recessed at 6:10 p.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	MARY ALLEN NEEL, RPR, FPR
APPEARANCES:	(As heretofore noted.)

DOCUMENT NUMBER-DATE
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FPSC-COMMISSION CLERK

I N D E X

WITNESSES

EXHIBITS

NUMBER		ID.	ADMTD.
40 through 51			588
52 and 53			649
54 through 57			694
58 and 59			720
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97	Excerpts from U.S./ Emission and Fuel Markets Outlook 2006	788	
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99	(Late-filed) Recalculated Appendix F	802	
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PROCEEDINGS

(Transcript follows in sequence from Volume 5.)

Thereupon,

LEONARDO F. GREEN

called as a witness on behalf of Florida Power & Light Company, continued his sworn testimony as follows:

CROSS-EXAMINATION

BY MS. KRASOWSKI:

Q. Good afternoon, Dr. Green.

A. Good afternoon.

Q. It's nice to see you again, by the way.

A. Thank you. The same here.

Q. You're welcome. Thank you.

On page 6, on lines 10 through -- of your testimony, excuse me, on lines 10 through 14, you speak about the projected growth in real personal income for Florida being overly optimistic and incremental needs in capacity that may not be realistic, and I see that you have -- I see that you have changed your projections here. But I was wondering, how does the slowing of personal income in Florida affect commercial construction growth?

A. Okay. We adjusted -- as you just mentioned, we adjusted the outlook for the economy that was

provided to us by Global Insight. We thought it was overly optimistic, so we lowered that forecast. Looking back now, I think we should not have done it, because they had projected 4.6 percent for 2007. I lowered it to 3.2, and it came in closer to 4.6 percent.

So, yes, there is a slowing down of the economy. I will not disagree with that. However, that's the way the economy works. It works in cycles. There's a hot period and there's a slow period, a high period and a slow period. In putting together our forecast, we do not try to pinpoint those cycles. We try to give a trend. We try to give a trend as to what the growth in this economy is going to be.

The fundamentals of the Florida economy has not been affected by the slowdown. And when I say the fundamentals, I'll say this. Construction and manufacturing is not the basis of this economy. Tourism did great last year. Tourism boomed. We have good growth in health services. We have good growth in professional services. In Florida, even with the slowdown, we're the second state in creation of jobs, just behind Texas.

The question -- and that's a long answer to the question that you asked. She asked how the slowdown is going to affect construction of commercial activity.

A curious fact: Last year, residential customers in FPL's service territory grew by just over 1 percent. Commercial customer growth was 2.7 percent. There has been a slowdown in the residential sector, but the commercial sector has not experienced that slowdown.

Q. Is it generally accepted that there's a year lag between residential and commercial slowdown in construction?

A. That's a good assumption, yes.

Q. You said that you use the University of Florida for your population report. Could you tell me which year BEBR report you were using for the population?

A. Yes. The population projections were based on a forecast that was done in 2006.

Q. Is this the same population projection that you used for the Glades County coal plant?

A. That's correct.

Q. Do you know when the new BEBR is supposed to come out?

A. There was one that came out in -- there's two that came out in 2007, and in April of this year, the University of Florida will release another forecast of population.

Q. Let's see. On page 7 in your testimony, in

lines 4 and 5 -- wait. Actually, it's 5 and 6. You say that Florida's population and economy are expanding at levels well above the national average. And I do agree with you on certain levels about the economy as far as the economy staying pretty much where it is and jobs being added, although they're in the lower sectors, but they're added. Sorry.

But my question is, do you know what position the State of Florida is in now as far as population growth goes compared to the other 50 states?

A. Yes. Florida is now the fourth fastest in absolute number of customers growth. And it's important to make that distinction. You have states like Arizona and New Mexico. The higher percentages in growth of population, percentages mean nothing. The absolute number of customers is the amount of megawatts that you're going to have to serve. And in absolute numbers, Florida is fourth currently.

Q. And it's fourth fastest in terms of customers. I guess with the customers, that would also include the commercial and business also?

A. That's correct. That is a general average. Customers include all categories.

Q. Are you familiar with the latest U.S. Census figures for Florida?

A. Yes, I am.

Q. What do the trends suggest based on the latest U.S. Census figures?

A. The latest figures suggest a slowing down in customer growth and population growth for the State of Florida.

I would like to add to that that just 10 years ago in the '90s, Florida Power & Light was averaging approximately 65,000 customers per year. Last year we added 87,000. Coming out of the 1990s, where we were adding 65,000 to 70,000 customers per year, in the early part of the 2000s, we went, for example, in 2004, over 100,000. Right now we're at 87,000. It goes in cycles. It goes in cycles. This year the Baby Boomers turn 62 years. There's going to be quite of influx of retirees into the State of Florida starting with this year.

Q. Would you say that that is your opinion, or have you heard other opinions about the Baby Boomers coming to Florida?

A. The opinions that I've heard suggest that we will not get as much as we used to get. However, based on the volume, there's 70-something million Baby Boomers out there. If we get a small percentage of them, it's going to be a significant growth in our population base.

Now, I would like to say that even the

University of Florida that suggests that we might see a slowing down in the population growth, still it puts us with tremendous growth in population. It's just not of the magnitude that we saw in the last four or five years. But, yes, they still are suggesting tremendous growth in Florida. And I would like to repeat, it goes in cycles. Right now we're in one of those low points.

And I would like to add one more observation. I've been doing this forecast for FP&L for 21 years. In 21 years, the University of Florida always revised their population estimates upward, 21 out of 21 years.

Q. Since you have made your observations based upon the 2006 BEBR report, have you seen the 2007 BEBR report, and did they increase the population estimates in that report also?

A. In the 2007 estimates, I'm not certain. I'm not certain were there revisions for 2007. However, I know for the 2006 revision, it was up. That was the last one that I saw.

Q. Would a slowdown -- does the slowdown in -- how am I going to say this? Let's see. Does the slowdown in the population growth make it possible to not need as much base load capacity generation?

A. If there were a continued slowdown in population growth, there would be a need. Maybe it

might not be of the same magnitude, but there would continue to be a need for future generation, yes.

Q. But at a slower level, lower level?

A. That's correct. If we have less population growth, the demand will be less.

Q. And I have a hypothetical question. If the population slows down to the point where there is not any growth and we get a few hurricanes like we did that one year where we had the five, how would that affect the need for a new electrical plant?

A. After the hurricanes in 2004 and 2005, in December of 2006, December over December, Florida Power & Light's customer count was 102,000 new customers, December 2006 over December 2005. So, yes, it affects the psychology, but people continue to come here. People just love the lifestyle.

But I believe the primary reason -- I believe the primary reason why people move to Florida is that people will seek job opportunities. As I said, we're the second state in the creation of jobs. People are going to come for those jobs.

There's a study that was done by the university, Florida State University, the Claude Pepper Aging Institute, and they predict that for every retiree that comes to Florida, they create three jobs. Three

jobs are created by every retiree into Florida. That predicts quite a growth, quite a growth in more employment. If we get that employment, whatever slowdown that you see currently in our population growth will disappear real fast.

Q. When was that Claude Pepper study made?

A. I think it was 2004, 2005.

MS. KRASOWSKI: Thank you, Dr. Green.

CHAIRMAN CARTER: Thank you. Commissioners, any questions? We'll go to staff, and then we'll come back to the Commissioners if you think of any. Staff, you're recognized.

MS. FLEMING: We have no questions. Thank you.

CHAIRMAN CARTER: That was quicker than I thought. Commissioners?

Okay. Let's do this. Mr. Huntoon, do you have redirect?

MR. HUNTOON: No, I do not, Mr. Chair.

CHAIRMAN CARTER: Okay. Well, let's deal with these exhibits then.

MR. HUNTOON: We would like to move Exhibits 40 through 51, please.

CHAIRMAN CARTER: Forty through 51. Any objections? Without objection, show it done.

(Exhibits Number 40 through 51 were admitted into the record.)

CHAIRMAN CARTER: Now, Dr. Green, now that you're released from your stint on the stand, you left us.

THE WITNESS: I did.

CHAIRMAN CARTER: Have a good time in Texas.

THE WITNESS: Thanks.

CHAIRMAN CARTER: Keep up the good work.

Let's do this, Commissioners. We've been at it for well over an hour plus, and, you know, the mind can't handle more than the body can stand, so why don't we take a recreational break, a brief break so we can kind of do a stretch break and come back. I'm looking at 2:44. I'm saying this because I want you guys to be on my time. I'm looking at 2:44, so let's come back at about -- I started to say 2:54, but that's so close to three o'clock, let's come back at three o'clock. We're in recess.

(Short recess.)

CHAIRMAN CARTER: We are back on the record, and just before we call our next witness, Commissioner Skop, you're recognized.

COMMISSIONER SKOP: No, Mr. Chair. I'm prepared to go forward with the witnesses.

CHAIRMAN CARTER: Okay. Thank you, sir. Thank you, sir. Call your next witness.

MR. HUNTOON: Thank you, Mr. Chairman. The company calls Mr. Dennis Brandt. Mr. Chairman, Mr. Brandt has not been sworn, and we also have another FPL witness, Henrietta McBee, who is in the room, who could be sworn at this time as well, if it's your pleasure.

CHAIRMAN CARTER: Okay. Let's do it. They say it's cheaper by the dozen, so we'll do them by two. Would you please stand and just raise your right hand.

(Witnesses collectively sworn.)

CHAIRMAN CARTER: Thank you very much. You're recognized, sir.

MR. HUNTOON: Thank you, Mr. Chairman.

Thereupon,

C. DENNIS BRANDT

was called as a witness on behalf of Florida Power & Light Company and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HUNTOON:

Q. Mr. Brandt, would you please state your name and business address?

A. My name is C. Dennis Brandt. My business

address is 9250 West Flagler Street, Miami, Florida.

Q. By whom are you employed, and in what capacity?

A. I'm employed by Florida Power & Light. I'm the Director of Product Management and Operations.

Q. Have you prepared and caused to be filed 30 pages of prefiled direct testimony in this proceeding?

A. Yes, I have.

Q. Do you have any changes or revisions to your prefiled direct testimony?

A. Yes, I do.

Q. Please provide that.

A. On pages 3 and 7 of my prefiled testimony, I discuss the effectiveness of FPL's DSM efforts based on data from the U.S. Department of Energy for the year 2005. Based on this 2005 data, FPL was ranked number one for cumulative conservation achievement and number four in load management. In November 2007, the Department of Energy published updated data for 2006. Based on this most current data, FPL is still ranked number one cumulatively for conservation, but has moved up to third in load management.

The resulting changes to my testimony are on pages 3, line 14, where you need to change four to three, and on line 15, change 2005 to 2006. Also, on

page 7, line 18, change 2005 to 2006. And on line 20, change four to three.

Q. Mr. Brandt, with that update, if I asked you the same questions contained in your prefiled direct testimony today, would your answers be the same?

A. Yes, they would.

MR. HUNTOON: Mr. Chairman, FPL requests that the prefiled direct testimony of Mr. Brandt be inserted into the record as though read.

CHAIRMAN CARTER: The prefiled testimony will be inserted into the record as though read.

BY MR. BUTLER:

Q. Mr. Brandt, are you also sponsoring any exhibits to your direct testimony?

A. Yes, I am.

Q. Do the exhibits consist of documents DB-1 and DB-2?

A. Yes.

MR. HUNTOON: Mr. Chairman, I would note that Mr. Brandt's exhibits have been premarked for identification as Exhibits 52 and 53 in this proceeding.

CHAIRMAN CARTER: Thank you.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF C. DENNIS BRANDT

DOCKET NO. 07_____ - EI

OCTOBER 16, 2007

Q. Please state your name and business address.

A. My name is C. Dennis Brandt, and my business address is 9250 West Flagler Street, Miami, Florida 33174.

Q. By whom are you employed and what position do you hold?

A. I am employed by Florida Power & Light Company (FPL) as Director of Product Management and Operations.

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

A. I am responsible for the life cycle management of FPL's products and services. This includes overseeing the implementation and tracking of the various Demand Side Management (DSM) programs offered to residential and business customers.

Q. Please describe your education and professional experience.

A. I received a Bachelor of Science Degree in Industrial Engineering from the University of Miami in 1978. I received my Masters Degree in Industrial Engineering from the University of Miami in 1984. I am a certified Professional Engineer in the State of Florida. I was hired by FPL in 1979 in the Materials Management Department and have

worked in positions of increasing responsibility in the areas of Load Management, Commercial and Industrial Marketing, Residential and General Business Marketing and Sales & Marketing Product Support. In 1991, I was promoted to the position of Manager of Residential and General Business Marketing Support. I held this position until 1993, when I became the Manager of Commercial/Industrial Marketing Support. In late 1996, I became the Manager of Sales & Marketing Product Support and, in 1999, I assumed my current position.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits DB-1 and DB-2, which are attached to my direct testimony:

Exhibit DB-1 FPL's Current FPSC DSM Goals

Exhibit DB-2 FPL's DSM Programs & Measures

Q. Are you sponsoring any part of the Need Study in this proceeding?

A. Yes. I am sponsoring Section VIII, Non-Generating Alternatives of the Need Study. In addition, I am sponsoring Appendix K of the Need Study.

Q. What is the purpose of your testimony?

A. My testimony has six main points. First, I will advise whether there are any available demand-side options that could eliminate the 2018 and 2020 capacity needs. Second, I will provide a historical overview of FPL's DSM initiatives. Third, I will discuss the current maturity of FPL's DSM programs and their potential on FPL's system. Fourth, I

will outline the process used for setting DSM Goals. Fifth, I will provide an overview of FPL's current DSM and demand-side renewable efforts, including recent Commission-approved modifications to FPL's DSM programs that have the effect of substantially increasing demand and energy savings going forward. Sixth, I will discuss FPL's demand-side management projection through 2020.

Q. Please summarize your testimony.

A. FPL has been very successful in cost-effectively avoiding or deferring new power plant construction using DSM. In fact, the U.S. Department of Energy, which reports on the effectiveness of utility DSM efforts through its Energy Information Administration, ranks FPL number one nationally for cumulative conservation achievement and number ~~four~~ three in load management based on the most current data available (~~2005~~ 2006 data). When you consider that FPL serves about three percent of the total United States consumers but has achieved thirteen percent of the total U.S. conservation and six percent of the total load management, it is clear that FPL's success is not attributed just to its size relative to other utilities, but to its commitment to achieving the maximum amount of cost-effective DSM.

Through year-end 2006, FPL has implemented 3,659 MW (at the generator) of DSM – or the equivalent of 11 medium-sized power

plants. In 2004, FPL received Commission approval of DSM goals that will add 802 MW (at the generator) of additional DSM from 2006 through 2014.

FPL continually investigates additional cost-effective DSM opportunities and requests Commission approval of revisions to its DSM plan as appropriate. FPL recently received Commission approval of significant changes to its DSM plan offerings

In addition, FPL's estimate is that it plans to achieve additional MW of demand reduction for the post DSM goals time frame of 2015 through 2020, such that it will implement a total of 1,899 MW at the generator of summer DSM demand reduction from August, 2006 through August, 2020.

FPL's accomplishments and future commitments to DSM are significant. With 3,588 MW of DSM implemented through July, 2006 and an additional 1,899 MW of DSM being added in the August, 2006 through August, 2020 time frame, FPL will have avoided approximately 6,584 MW of generation capacity (including the impacts for FPL's 20 percent reserve margin requirements) by 2020. This is three times the size of the two 1,100 MW power plants being considered. However, despite these outstanding accomplishments,

there is still not enough additional cost-effective DSM to eliminate FPL's capacity needs through 2020.

I. Historical Overview of FPL's DSM Initiatives

Q. What is Demand Side Management?

A. Demand Side Management, as used in my testimony, is the planning, implementation and monitoring of utility programs designed to reduce customer usage of electricity, particularly during peak demand periods, in a cost-effective manner. Utility programs falling under the umbrella of DSM include load management, conservation, energy audits for all classes of customers and research and development (R&D).

FPL uses both of the Commission-approved cost-effectiveness tests to determine which DSM programs to offer to its customers – the Rate Impact Measure (RIM) test and the Participant test. By offering only those programs that are cost-effective, as measured by the RIM test, all customers benefit by avoiding or deferring the need for new capacity that result in lower electric rates than they would otherwise have had in absence of the programs. In addition, DSM programs that are cost-effective as measured by the Participant test ensure that the program makes economic sense for customers who choose to participate in it.

Q. When did FPL begin its DSM efforts?

A. FPL has a long history of identifying, developing and implementing DSM resources to cost-effectively avoid or defer the construction of new power plants. FPL first began offering DSM programs in the late 1970s with the introduction of its Watt-Wise Home Program. FPL has continued to develop and offer additional DSM programs to its customers. These programs have included both conservation and load management programs, targeting the residential and business markets.

Q. Have FPL's DSM efforts progressed over time?

A. Yes. FPL's portfolio of DSM programs has evolved over time. FPL continually looks for new DSM opportunities as part of its research and development activities. When a new DSM opportunity is identified and projected to be cost-effective, FPL attempts to either implement a new DSM program or incorporate this DSM opportunity into one or more of its existing DSM programs. In addition, FPL has modified DSM programs over time in order to maintain their cost-effectiveness. This allows FPL to continue to offer the most cost-effective programs available.

Q. How effective has FPL been in implementing DSM, and what are the resulting impacts of these efforts?

A. FPL has been very successful in cost-effectively avoiding or deferring new power plant construction using DSM. Since the inception of its programs, through the end of 2006, FPL has achieved 3,659 MW (at

the generator) of summer peak demand reduction, 2,816 MW (at the generator) of winter peak demand reduction, 38,169 GWh (at the generator) of energy savings and completed over 2,360,000 energy audits of its customers' homes and businesses.

This amount of peak demand reduction is equivalent to eliminating the need for eleven additional power plants of 400 MW summer capacity each (after accounting for the impacts of FPL's 20 percent reserve margin requirements). Most importantly, FPL has achieved this level of demand reduction without penalizing customers who are non-participants in its DSM programs. FPL has been able to avoid penalizing non-participating customers by offering only DSM programs that minimize electric rates for all customers, DSM participants and non-participants alike.

Q. How do FPL's DSM efforts compare to those of other utilities?

A. The U.S. Department of Energy reports on the effectiveness of utility DSM efforts through its Energy Information Administration. Based on the most current national data available, which is for the year ~~2005~~ 2006, FPL is ranked number one nationally for cumulative conservation achievement and number ~~four~~ three in load management. To put this further in perspective, FPL serves about 3 percent of the total United States consumers but has achieved 13 percent of the total U.S. conservation and 6 percent of the total load management. Therefore, FPL's success

is not attributed just to its size relative to other utilities, but to its commitment to achieving the maximum amount of cost-effective DSM.

II. Current Maturity of DSM and Its Potential on FPL's System

Q. Of the potential markets available to FPL for DSM initiatives, are there technologies or market segments that have limited potential?

A. Yes. There are several areas where DSM-related technologies are reaching market saturation and this directly impacts FPL's ability to increase participation in many of its DSM programs. For FPL's load management programs, it is critical to determine how much load management is actually "usable" for an individual utility. Consideration must be given to the system peak day load shapes when load management is most likely to be used and characteristics of load management measures, including control strategies, length of the control periods and the payback effects once load control is released. Based on analysis using these factors, FPL's projected amount of annual load management capability is very close to the maximum usable amount.

Another area reaching saturation is installation of ceiling insulation for residential customers. FPL's research has found that for the vast

majority of its customers, ceiling insulation levels above R-19 provide minimal additional energy savings. In 1982, the State of Florida Energy Code was changed to require all new homes to have at least R-19 levels of ceiling insulation. FPL's residential building envelope program has focused on that finite market of homes built prior to this code change. As a consequence, the eligible market shrinks as more pre-1982-built homes participate in the program.

Lastly, FPL's heating, ventilating and air conditioning (HVAC) programs for residential and business customers are designed to encourage customers to install equipment that is more efficient than the State Energy Code. The goal of a utility HVAC program should be to encourage customers to install more efficient equipment than they would without the program. When the Code minimum efficiency level becomes the same as the utility's program, then the impact of the utility program is greatly diminished because the baseline energy efficiency level is raised. This results in smaller impacts for incremental efficiency gains for the utility program at a relative increased cost. In 2006, the minimum efficiency standards for HVAC equipment were increased significantly. For instance, the minimum seasonal energy efficiency rating (SEER) for residential type air conditioners increased from 10 to 13. This change in the minimum

SEER has had a significant impact, reducing the number of air conditioning units that qualify for FPL's air conditioning programs.

Q. Has FPL continued to look for new DSM opportunities?

A. Yes. FPL performs extensive DSM research and development. FPL uses its Conservation Research and Development program as the primary vehicle to examine a wide variety of technologies. From that research, FPL has been able to develop new programs that help further the objectives of the Florida Energy Efficiency Conservation Act (FEECA) by cost-effectively reducing the growth rate of weather sensitive peak demand, reducing and controlling the growth rate of energy consumption, increasing the conservation of expensive resources and increasing the efficiency of the electrical system. Several of the new programs that have emerged as a result of FPL's Conservation Research and Development program include Residential New Construction, Business Building Envelope and Business On Call.

III. FPL/FPSC DSM Goals-Setting Process

Q. Why are DSM goals established?

A. FPL establishes annual DSM goals pursuant to the requirements of FEECA and the Florida Administrative Code. Further, DSM goals are established for use in planning to cost-effectively meet the future capacity needs of its customers. FPL's DSM goals are key inputs into

FPL's annual Integrated Resource Planning (IRP) process, which is discussed in the testimony of FPL witness Sim.

Q. How frequently are FPL's DSM goals established?

A. Every five years, each utility submits DSM goals for Commission approval. These are goals for a ten year period that address overall residential kW and kWh goals and overall business kW and kWh goals. FPL currently has Commission-approved goals for the years 2005 through 2014.

Q. When were FPL's current Commission-approved DSM goals established?

A. FPL's current goals were approved on August 9, 2004, in FPSC Order No. PSC-04-0763-PAA-EG issued in Docket No. 040029-EG (Consummating Order 04-0850-CO-EG, issued September 1, 2004).

Q. What are FPL's current DSM goals and how is the Company performing?

A. Exhibit DB-1 shows FPL's current Commission-approved DSM goals and actual cumulative performance through 2006 (at the meter). In 2006, FPL was successful in meeting all of its goals.

Q. How were FPL's current Commission-approved DSM goals developed?

A. FPL used a multi-step process to develop DSM goals. The first step was to determine which measures should be evaluated for cost-effectiveness. A total of 329 separate DSM measures were identified

for screening. In the next step of the process, all selected measures were then screened utilizing the RIM test for cost-effectiveness with an assumption of no incentives. The assumption of no incentives gives each measure the highest probability of passing the RIM test. The RIM passing incentive level was next determined for each measure, and cost-effectiveness was then determined using the Participant test. For those measures that were found to be cost-effective as determined by the RIM and Participant tests, annual market acceptance rates, or the achievable potential, was identified based on cost-effective incentive levels. The results obtained in this phase of the process were further analyzed to identify the most cost-effective DSM portfolio for FPL's customers as part of FPL's IRP process.

In summary, the goals FPL developed reflected the cost-effective achievable potential projected by FPL for utility program measures analyzed under the RIM and Participant tests.

Q. What is the timing for the next FPSC DSM goals-setting process?

A. Although there has not been any formal communication from the Commission in regard to a new goals-setting procedure, the Florida Statutes and the Florida Administrative Code require goals to be re-assessed every five years. FPL's current goals cover the time period 2005 through 2014, with 2009 being the fifth year.

IV. FPL's Current DSM and Renewables Initiatives

Q. How has the Company endeavored to achieve the Commission-approved DSM goals?

A. As part of the goals-setting process just discussed, FPL found 92 measures to be cost-effective under the RIM and Participant tests. Those measures were packaged into comprehensive FPL programs as part of the Company's DSM plan, which was also approved by the Commission. FPL's DSM plan to meet its 2005-2014 goals was approved by the Commission in Order Nos. PSC-05-0162-PAA-EG, issued February 9, 2005 (Consummating Order No. PSC-05-0323-CO-EG, issued March 21, 2005) and PSC-06-0025-FOF-EG, issued January 10, 2006, in Docket No. 040029-EG.

Q. Has FPL made any significant changes to its DSM plan that was approved in Order Nos. PSC-05-0162-PAA-EG and PSC-06-0025-FOF-EG?

A. Yes. As previously discussed, FPL continually investigates additional cost-effective DSM opportunities and requests Commission approval of revisions to FPL's DSM plan as appropriate. In 2005, FPL's forecast of customer demand increased significantly. There were also changes to minimum equipment efficiency standards and changing market conditions. As a result of these changes, FPL performed a

comprehensive review of all its DSM programs, as well as other potential measures.

Q. What were the results of FPL's comprehensive review of its DSM programs?

A. Due primarily to the unexpectedly large summer 2005 peak load, and the possibility of future similar increases, FPL identified an average of approximately 60 MW of additional summer demand reduction impact per year for the time period from January 2006 through December 2014.

To produce these savings, FPL requested Commission approval of modifications to eight of FPL's existing DSM programs. These modifications included changing the minimum qualifying SEER for air conditioners to reflect minimum mandated levels by the U.S. Department of Energy, modifying incentive levels for numerous program measures, enhancing program operating parameters and adding new measures to existing programs. FPL's R&D initiatives resulted in adding demand control ventilation, light colored roof membranes and refrigeration technologies to these DSM offerings. In addition, FPL requested Commission approval of two new DSM programs -- Business Water Heating and Business Refrigeration.

Q. Did the Commission approve FPL's request for approval of these modifications?

A. Yes. On June 26, 2006, the Commission issued Order No. PSC-06-0535-PAA-EG in Docket No. 060286-EG (Consummating Order No. PSC-06-0624-CO-EG issued July 20, 2006), approving changes to FPL's residential and business HVAC programs. On September 1, 2006, the Commission issued Order No. PSC-06-0740-TRF-EI in Docket No. 060408-EI (Consummating Order No. PSC-06-0801-CO-EI, issued September 26, 2006) approving the remaining modifications to FPL's DSM plan. The Commission found that approval of the proposed modifications to FPL's DSM plan was expected to increase FPL's system demand and energy savings, and would enable FPL's DSM Plan to continue to meet the policy objectives of FEECA and continue to be monitorable and cost-effective. My Exhibit DB-2 shows FPL's current Commission-approved DSM programs and their corresponding measures.

Q. Has FPL identified any other non-firm load that could help avoid future capacity needs?

A. Yes. FPL has several curtailable rate schedules. Historically, these rate schedules required only a one-year commitment from a customer who elected to receive service under their terms. With only a one-year commitment, the peak load reduction from this group of customers could not be used for capacity deferral because there was not adequate

time to plan for meeting the capacity needs of customers discontinuing this non-firm service option. In 2006, the Commission approved FPL's request to increase the minimum term under these rates to three years in Order No. PSC-06-0660-TRF-EI issued August 7, 2006 in Docket No. 060407-EI (Consummating Order PSC-06-0736-CO-EI, issued August 31, 2006). The Commission found that increasing the minimum term to three years would allow the demand reduction capability of this group of customers to be treated as non-firm load for capacity resource planning because FPL would have the ability to plan and respond when non-firm load that was being deferred by the avoided unit returns to the FPL system, thus helping to avoid or defer the need for additional new capacity.

Q. Did the change to the minimum term for curtailable rates identify additional non-firm load for FPL's resource planning?

A. Yes. Based on FPL's current projections, curtailable rates will provide an additional 39 MW (at the generator) of peak demand reduction through year end 2014. This 39 MW is included in the 60 MW per year of additional DSM previously discussed.

Q. Has FPL requested any other changes to its load control initiatives?

A. Yes. On June 15, 2007 FPL filed a petition with the Commission for the Residential Thermostat Load Control Pilot Project. A typical barrier to customer acceptance of utility load control programs is

reluctance to surrender control of heating and air conditioning appliances. Consequently, for an initial 24-month period, FPL is proposing to evaluate whether the benefits of the On-Call Program can be expanded through use of a new generation of communication and control technologies that put residential customers in charge of decisions that could lower energy costs, while allowing customers to override FPL control of their heating and air conditioning appliances. The Commission approved FPL's request on August 14, 2007. On the same day, the Commission approved FPL's request to make its residential On-Call Pilot Project a permanent part of FPL's DSM Plan.

Q. Are there any other major initiatives that FPL has taken into account to address energy conservation?

A. Yes. The United States Energy Policy Act of 2005 mandates specific energy efficiency standards that are anticipated to reduce FPL's peak demand by 1,256 MW by 2020. As FPL witness Green describes in his testimony, this reduction was taken into account in determining FPL's capacity needs.

Q. What are FPL's current Commission-approved DSM programs?

A. FPL's current DSM Plan consists of seven residential DSM programs and ten business DSM programs.

The residential DSM programs are as follows:

Residential Conservation Service: This is an energy audit program designed to assist residential customers in understanding how to make their homes more energy-efficient through the installation of conservation measures/practices.

Residential Building Envelope: This program encourages the installation of energy-efficient ceiling insulation, reflective roofs and roof membranes in residential dwellings that utilize whole-house electric air conditioning.

Duct System Testing and Repair: This program encourages demand and energy conservation through the identification of air leaks in whole-house air conditioning duct systems and by the repair of these leaks by qualified contractors.

Residential Air Conditioning: This is a program to encourage customers to purchase higher efficiency central cooling and heating equipment.

Residential Load Management (On-Call): This program offers load control of major appliances/household equipment to residential customers in exchange for monthly electric bill credits.

New Construction (BuildSmart): This program encourages the design and construction of energy-efficient homes that cost-effectively reduce coincident peak demand and energy consumption.

Residential Low Income Weatherization: This program addresses the needs of low-income housing retrofits by providing monetary incentives to various housing authorities, including weatherization agency providers (WAPS), non-weatherization agency providers (non-WAPS) and other providers approved by FPL. The incentives are used by these providers to leverage their funds to increase the overall energy efficiency of the homes they are retrofitting.

FPL's business DSM programs are as follows:

Business Energy Evaluation: This program encourages energy efficiency in both new and existing businesses by identifying DSM opportunities and providing recommendations to business customers.

Business Heating, Ventilating and Air Conditioning: This program encourages the use of high-efficiency HVAC systems for business customers.

Business Efficient Lighting: This program encourages the installation of energy-efficient lighting measures for business customers.

Business Custom Incentive: This program encourages business customers to implement unique energy conservation measures or projects not covered by other FPL programs.

Commercial/Industrial Load Control: This program reduces peak demand by controlling customer loads of 200 kW or greater during periods of extreme demand or capacity shortages in exchange for monthly electric bill credits. (This program was closed to new participants in 2000.)

Commercial Demand Reduction: This program, which started in 2002, is similar to the Commercial/Industrial Load Control program mentioned above. It reduces peak demand by controlling customer loads of 200 kW or greater during periods of extreme demand or capacity shortages in exchange for monthly electric bill credits.

Business Building Envelope: This program encourages the installation of energy-efficient building envelope measures such as roof/ceiling insulation, reflective roof coatings and window treatments for business customers.

Business On Call: This program offers load control of central air conditioning units to both small, non–demand-billed and medium, demand-billed business customers in exchange for monthly electric bill credits.

Business Water Heating: This program encourages the installation of energy-efficient water heating equipment such as heat pump water heaters and heat recovery units for business customers.

Business Refrigeration: This program encourages the installation of qualifying controls and equipment that reduce electric strip heater

usage in refrigeration equipment for business customers.

Q. Has FPL engaged in demand-side activities in support of renewables?

A. Yes. My testimony focuses on demand-side renewables. FPL witnesses Silva's and McBee's testimonies discuss FPL's supply-side renewables activities. In the area of demand-side renewables, FPL has a long history of programs and research and development addressing the needs of its customers. The following is a discussion of FPL's efforts in this area.

FPL's Conservation Water Heating Program, first implemented in 1982, offered incentive payments to customers choosing solar water heaters. Before the program was ended (due to the fact that it was no longer cost-effective), FPL paid incentives to approximately 48,000 customers who installed solar water heaters.

In the mid-1980s, FPL introduced another renewable energy program. FPL's Passive Home Program was created in order to broadly disseminate information about passive solar building design techniques which are most applicable in Florida's climate. During its existence, this program was popular and received a U.S. Department of Energy award for innovation. The program was eventually phased out due to the revisions of the Florida Model Energy Building Code.

The revision was brought about in part by FPL's Passive Home Program.

In early 1991, FPL received approval from the Commission to conduct a research project to evaluate the feasibility of using photovoltaic (PV) systems to directly power residential swimming pool pumps. This research project was completed with mixed results. However, the high cost of PV, the significant percentage of sites with unacceptable shading and various customer satisfaction issues remain as barriers to wide acceptance and use of this particular solar application.

FPL has analyzed the feasibility of encouraging utilization of PV in another, potentially much larger way. FPL's basic approach did not require all of its customers to bear PV's high cost, but allowed customers who were interested in facilitating the use of renewable energy the means to do so. FPL's initial effort to implement this approach allowed customers to make voluntary contributions into a separate fund that FPL used to make PV purchases in bulk quantities. FPL began the effort in 1998 and received approximately $89,000 in contributions (that significantly exceeded the goal of $70,000). FPL purchased PV modules and installed them at FPL's Martin Plant site.

In 2000, FPL launched the Photovoltaic Research, Development and Education Project. This demonstration project's objectives were to: increase the public awareness of roof tile PV technologies, provide data to determine the durability of this technology and its impact on FPL's electric system, collect demand and energy data to better understand the coincidence between PV roof tile system output and FPL's system peaks (as well as the total annual energy capabilities of roof tile PV systems) and assess the homeowner's financial benefits and costs of PV roof tile systems. This project, which was completed in 2003, provided valuable data to assess the cost-effectiveness of this technology for FPL and its customers.

In November of 2004, FPL launched its Green Power Pricing Research Project (GPPRP) that was marketed as the Sunshine Energy® program. The objective of the project was to allow residential customers to sign up voluntarily and pay for energy produced by renewable resources, thus fostering the development of supplies of renewable energy that would not otherwise be developed. GPPRP participants paid a monthly premium of $9.75 per month for a 1,000 kWh block of renewable energy attributes. To supply the renewable energy for the GPPRP, FPL entered into a contract with a supplier for the purchase of tradable renewable energy credits (TRECs). In addition, for every 10,000 participants, FPL agreed to have built 150

kW of photovoltaic capacity in Florida. A summary of the new photovoltaic sites is discussed below.

In its short history, the GPPRP became one of the top programs in the country with 28,742 customers enrolled by the end of 2006. The GPPRP purchased 1,894 GWhs of TRECs as of year end 2006 making it the third largest renewable energy program in the country. It also received the 2005 Green Power Leadership Award from the U.S. Department of Environmental Protection and the Department of Energy. The program has continued to grow, with 34,000 participants as of June, 2007.

On September 17, 2006, FPL filed a petition with the Commission to convert the GPPRP to a permanent program and to extend the program to business customers. On December 1, 2006, the Commission issued Order No. PSC-06-0924-TRF-EI in Docket No. 060577-EI approving this request.

Q. How does the Sunshine Energy® program support the development of renewable energy?

A. The Sunshine Energy program promotes the development of renewable energy by creating an additional revenue stream for renewable energy project developers. Typically, when a renewable energy project is being developed, there are at least two potential

revenue streams that a developer can use to ensure the project is viable. The first revenue stream is to sell the energy and/or capacity to a utility. Typically the price paid by the utility is based on its avoided cost. The cost of developing these types of projects, in certain cases, is greater than the utility's avoided cost and, as a result, this revenue stream may be insufficient. A second revenue stream is created through the sale, to third parties, of the tradable renewable energy certificates associated with the project. When this revenue stream is combined with the revenues associated with sale of the energy and/or capacity, the financial viability of these projects improves.

As discussed above, the Sunshine Energy program has two major components – the development of solar sites and the purchase of TRECs. This purchase of TRECs by Sunshine Energy is specifically targeted to encourage the development of additional renewable energy projects.

Q. Has the Sunshine Energy program encouraged renewable energy development in Florida?

A. Yes. The Sunshine Energy program has supported the development of the following solar projects:

- 8 kW of solar installed in cooperation with the SunSmart Schools - 2 kW each at Palm City Elementary, MAST Academy, South Miami Senior High School and Edgewood High School

- A 2 kW solar array installed at the Miami Science Museum
- 54 kW of rooftop solar installed on homes at "The Quarry" subdivision by Centex Homes in Naples.
- Construction of a 250 kW site in Sarasota is currently underway and is expected to be completed and dedicated in October of 2007.

These projects are for the Sunshine Energy program's commitment for solar resources.

The Program is also purchasing TRECs from several biomass and wood waste facilities in Florida. The Program's TREC supplier has also responded to a request for proposal to purchase TRECs from another new renewable facility in Florida. As the Program continues to grow in participation, the objectives of developing additional solar facilities through the Program and creating a Florida market for TRECs will continue to be advanced.

Q. Is the Sunshine Energy program the only way FPL encourages development of sources of renewable energy supplies in Florida?

A. No. As addressed in the testimony of FPL witness Silva, FPL recently issued a request for proposals for renewable energy supplies and has also filed a renewable standard offer contract with the Commission. Also, as addressed in FPL witness McBee's testimony, FPL has investigated and continues to explore development of FPL-owned renewable energy projects. Thus, the Sunshine Energy program is just

one prong of FPL's multi-pronged effort to encourage the development of renewable energy supplies in Florida and elsewhere.

V. Projected DSM Savings through 2020

Q. Has FPL estimated additional DSM peak demand reduction capability for the time period 2015-2020, after the Commission's approved goals end?

A. The next goals-setting docket, which will include the time period 2015-2019, will occur in 2009. While FPL does not have approved DSM goals for 2015 though 2019, FPL estimates that it will implement a total of approximately 1,899 MW of additional DSM programs at the generator from August, 2006 through August, 2020.

Q. How was the demand reduction estimated for the 2015 through 2020 time frame?

A. FPL has estimated for this time frame it will continue to implement DSM at a rate that is consistent with its plans and accomplishments through 2014.

Q. Can FPL, at this time, say with certainty what its DSM goals through 2020 will be?

A. No. However, FPL's estimate for this time period is reasonable and actual savings would need to be almost three (5,130 / 1,899) times higher in order to meet FPL's projected capacity needs through 2020.

Under even the most dramatic improvements in technology, building codes and customer receptivity to energy efficiency, it would be unrealistic to conclude that FPL could achieve this level of savings.

VI. Conclusion - Ability to satisfy capacity need through DSM

Q. Has FPL identified all of the cost-effective demand-side option potential for the 2007 through 2020 time frame?

A. Yes. As discussed above, FPL recently completed a comprehensive review of its DSM programs. This has resulted in Commission approval of extensive modifications to eight DSM programs, as well as two new programs. In addition, the Commission has approved modifications to FPL's curtailable rates so that they can now be considered in FPL's IRP process, thus helping to avoid or defer the need for additional new capacity. In addition, FPL has included a reasonable projection of FPL's industry-leading efforts of additional demand reduction capability for the 2015 through 2020 time period. Combined, the result is 1,899 MW of summer DSM demand reduction at the generator from August of 2006 through August of 2020.

Q. Has FPL identified any conservation, load management or demand-side renewables options that would lead to a significant increase in demand-side options potential in sufficient time to defer capacity needs through 2020 identified in this determination of need?

A. No. FPL has already identified all of its reasonably achievable cost-effective DSM potential and used this as input to its system reliability assessment. FPL has also implemented changes to non-DSM rate options to increase the potential of the demand-side options. While there has been a small increase in the penetration of demand-side renewables, the economics of the various technologies have not yet reached the level necessary to make any significant impact on FPL's summer peak. FPL's analysis and determination that it still needs additional capacity resources already takes into account all the cost-effective demand-side potential available on FPL's system. In order to meet FPL's projected capacity needs through 2020, 5,130 MW (at the generator) of demand-side resources would have to be identified. FPL witness Sim's testimony addresses this issue further.

As discussed above, even if there were some modest potential for additional non-generation potential on FPL's system, it is unrealistic to conclude that FPL could add significant incremental quantities in time to eliminate all of FPL's capacity needs through 2020. Therefore, there is not now, nor is there projected to be, sufficient available additional cost-effective demand-side potential that could eliminate FPL's capacity needs through 2020.

Q. Does this conclude your testimony?

A. Yes.

BY MR. HUNTOON:

Q. Mr. Brandt, have you prepared a summary of your direct testimony?

A. Yes, I have.

Q. Would you please provide it to the Commission?

A. Good afternoon, Chairman Carter and Commissioners. My testimony details FPL's efforts to ensure that it has identified all cost-effective demand-side potential for the 2007 through 2020 time frame. In spite of the implementation of substantial amounts of DSM and the projection of additional DSM, there still exists a need for additional capacity as identified in this proceeding.

FPL has been very successful in cost-effectively avoiding new power plant construction using DSM. The U.S. Department of Energy ranks FPL number one nationally for cumulative conservation achievement and number three in load management. FPL serves about 3 percent of the U.S. consumers, but has achieved 13 percent of the total U.S. conservation and 6 percent of the total load management. FPL's success should be attributed not just to its size relative to other utilities, but to its commitment to achieve the maximum cost-effective amount of DSM.

FPL recently completed a comprehensive review

of its DSM programs. This is a result of the Commission approving modifications to eight of its existing programs and two new programs. While they're not Commission-approved DSM goals beyond 2014, FPL has included a reasonable projection of its industry-leading efforts of additional demand reduction capability for the 2015 through 2020 time frame. Combined with the program modifications I just discussed, the result is 1,899 megawatts of additional DSM through 2020. Even if there were a potential for more DSM on FPL's system, it would require almost three times the identified potential, or 5,130 megawatts, in order to meet FPL's projected capacity needs through 2020. Even under the most dramatic improvement in technology, building codes, and customer receptivity, it's not realistic that FPL could achieve this level of peak demand reduction.

Finally, there was a discussion earlier about the potential for solar water heating. We have done an analysis, and based on our estimates of .4 kW of peak demand reduction per customer, it would take over 4.5 million solar water heaters to eliminate the two 1,100-megawatt nuclear power plants we're talking about here today. This is -- 4.5 is more than all of our residential customers, many who couldn't even install such a system.

Further, despite federal and state incentives, there's still a significant upfront capital investment for customers to install these types of systems, and the payback is probably over eight years. It's not realistic to expect that even a fraction of these systems would be installed based on those economics.

Thank you.

MR. HUNTOON: Mr. Chairman, Mr. Brandt is available for cross-examination.

CHAIRMAN CARTER: Thank you. Mr. Beck.

MR. BECK: I have no questions.

CHAIRMAN CARTER: Mr. Krasowski.

MR. KRASOWSKI: Thank you, Mr. Chair.

CROSS-EXAMINATION

BY MR. KRASOWSKI:

Q. Hello, Mr. Brandt.

A. Hello.

Q. I'm Bob Krasowski, with my wife, Jan, and we have some questions to ask of you, if you would help us out to understand your testimony.

A. Sure.

Q. And your DSM programs.

Mr. Brandt, I noticed through reading through your documents here that you are the person who oversees the implementation and tracking of various DSM programs,

but I don't see any mention of your participation in the Florida Energy Commission's -- one of their subcommittees that is addressing DSM as an issue.

A. That's correct. I am -- was on the subcommittee for the Florida Energy Commission.

Q. And also as part of your work, are you involved with the Governor's Action Team that's analyzing the future energy policy for the State of Florida?

A. I'm not a member of the Governor's Action Team. I have helped in analysis for the company.

Q. Have you been involved with the Public Service Commission in their numerous workshops on demand-side management and rulemaking efforts?

A. Yes, I have.

Q. Have you been involved with the Public Service Commission in their numerous meetings and efforts to identify renewable portfolio standards as they apply to energy savings in the State of Florida?

A. No, I have not been directly involved in the portfolio standards workshops.

Q. Has someone from FP&L been represented during those workshops?

A. Yes, they have.

Q. Okay. Thanks. Let's see. Are you aware of

the Public Service Commission's almost amazing effort at efficiency and conservation analysis for the State of Florida?

A. Yes, I am.

Q. It's quite elaborate, wouldn't you say?

A. Yes, sir.

Q. And extensive. And when I say this, I'm talking about not only the PSC board, but the staff, the technical staff. Do you understand that to be true?

A. Yes, sir.

Q. Okay. Good. Okay. So you've certainly been participating in addressing the efforts, comprehensive efforts at energy efficiency, conservation, demand-side management. Across the board, you're involved?

A. That's correct.

Q. Okay. Thank you. At this time, I would like to say I think you've done a great job. And I'm not friendly crossing here. This is just stating fact, you know. But we hear other things from other people about how we could do more, so I would like to ask you a few questions about the programs you have.

First of all, aren't these all voluntary programs?

A. Yes, sir, they all are voluntary programs.

Q. Okay. And I have the material in front of me.

On page 19 and 20 of your testimony, you identify all of the residential programs that you're working with and the business programs in terms of your efforts to manage DSM as we know it, as it exists today. And what I kind of want to -- would like to do is, in your -- in this other document I have in front of me, it's Interrogatory Number 76, page 1 of 1. Do you have that with you?

A. Yes, I do.

Q. What I would like to do is go down this list and compare it and ask you kind of the same question about each one of these programs. For example, you have a business energy evaluation -- excuse me. Let me get to the right place here.

Okay. Page 18. I'm sorry. Could you go to page 18?

A. Sure. Okay.

Q. Okay. Now, let me ask you for the record, you determine what programs are viable or prudent or good or bad based on your analysis that -- you use the RIM standard and the Participant standard; is that correct?

A. That is correct for most of the programs.

Q. Okay. Are there other standards that you use in some of the programs that go beyond the RIM, or could you --

A. Actually, two of our programs, the residential

conservation service program and the business energy evaluation program, are required to be offered by the Florida Administrative Code, so they are not judged to be cost-effective using the RIM or Participant, or for that matter, any other cost-effectiveness test.

Q. Okay. Thank you. So if I come to those and ask again about it, just remind me. Okay?

A. Yes, sir.

Q. If you would. Thank you.

Residential conservation service, is that the one that's required, one of them?

A. Yes, sir.

Q. Okay. The duct system testing and repair, you've identified this on page 18. Now, here we have in the other document, your interrogatory, duct system testing and repair. It shows that 12 percent of the eligible customers participated in that as a voluntary program.

So pretty much what I'll ask of you on all of these -- and maybe by doing this now, I can simplify and accelerate the process -- would be, is there some way you can establish how much, how many megawatts or that portion of a megawatt that program provides to us in savings, in deferred need? Like I understand through your testimony, we've saved a number of -- the need for

a number of power plants when you add all of this stuff up together. But I'm trying to get an estimation of, if we were to go from voluntary to mandatory on these things, how much more could we save, or if we could figure some way of improving the participation, how much could we save?

MR. HUNTOON: Mr. Chairman, I think we would ask if Mr. Krasowski could possibly follow a little bit more of a question and answer format.

MR. KRASOWSKI: Sure, sure. No problem, sir. I'll do that.

BY MR. KRASOWSKI:

Q. So, Mr. Brandt, page 1, I'll refer to it as page 1 on this interrogatory. In your duct system testing and repair, it shows a participation rate of 12 percent. Do you have any idea how many megawatts or fraction thereof that would represent as far as savings?

A. Yes. That's 209 megawatts.

Q. 290?

A. Nine.

Q. 109. Is that every year, or is that the cumulative?

A. That's the cumulative.

Q. How would I evaluate that on an annual basis?

A. Well, that program actually has been around

for probably about 15 years, so simplistically, we could divide 209 by 15.

Q. Thank you. I like the simplistic answer. So if I were to divide that by 15 years, the 209 megawatts, I could get an approximation. Okay.

So would I be correct in thinking that -- let's see. Let me do a little figuring here. That that might apply to all the other situations as far as just how much years it has been around divided by -- just to get a ballpark figure?

A. That would be somewhat of a crude estimate.

Q. Okay.

A. I mean, you have to remember some of these programs, when you initially launch them, you have time to ramp up the market and get people aware and participating, so you build momentum in the program, those types of things.

Q. Okay. Yes, that makes a lot of sense. Thank you. I appreciate the answer.

But let's say 15 into 209, that's 20 -- let's just say as an estimate -- I don't have my calculator here. It didn't help in the Glades case either. But let's just estimate that its 10 megawatts. Could I say 10 megawatts of -- and this is a crude estimate, Mr. Brandt. I'm not holding you to this. But could I

say 10 megawatts of power were diverted this year because of the 12 percent participation of your customers in the duct system testing and repair program?

A. Assuming your assumptions are correct and your math is correct, that would be okay.

Q. Okay. And I'm going to accept like just general ballpark type figures on this. I'm not going to hold you to it, you know, as far as any kind of details, but my interest is trying to get an estimate of this. And my point -- well, I can't make a point. Okay. That's interesting.

So what is the most successful -- okay. Number three, number three here is the residential air conditioning program. Okay. The residential air conditioning program, I understand from reading your testimony, has kind of maxed out as far as an opportunity to make great efficiency increases in that program, because the standard has been raised so high that hardly -- in the old houses that you used to work on, their air conditioners have been replaced, so you don't have much room for improvement at this time.

A. Well, actually, what has changed is, the minimum efficiency of an air conditioner that is available to a customer basically went from a SEER 10 to a SEER 13, so there's a significant jump in the minimum

standard. So for our program, we try to incent customers to go above the minimum. And obviously, when the code was at 10, you know, we had a lot of leeway to get customers to upgrade from 12 to 13 or 14, whatever. Now with the minimum at 13, you know, there's less opportunity to get customers to increase their efficiency. And likewise, when they do, you typically get smaller demand reductions than you would have gotten prior to that code change.

Q. So how to would that impact what is identified here in the document at page 1 again, the fact that 32 percent of the participating or eligible customers -- participation of eligible customers, that 31 percent of those eligible customers have participated in that? Can that be an indication -- I mean, how does that affect that fact? You say 32 percent of the people eligible have participated.

MR. HUNTOON: Your Honor, there's four questions that were sort of, I think, strung together here, and I think the record -- I don't know how Mr. Brandt can answer four questions at once. It's kind of a problem.

MR. KRASOWSKI: I'm sorry, Your Honor. I will go step by step by step.

CHAIRMAN CARTER: Okay.

BY MR. KRASOWSKI:

Q. Mr. Brandt, this shows a 32 percent participation rate in your residential air conditioner program?

A. That's correct.

Q. How does what you just told me about the availability of the efficiency of air conditioners affect your future ability to save energy in that program?

A. Well, because of the code change, we would expect fewer participation over the short term. As the market gets built up with higher efficiency units and the supply chain gets stocked with those units -- because obviously, if you live in Florida, if your air conditioner breaks, if the guy you call to put your air conditioner in doesn't have the high efficiency unit in stock, you probably don't want to wait a week to get one. So a real driver of these types of programs is making sure the supply chain has sufficient units available to meet our program. Since the code changed, slowly the supply chain is getting built up with these higher efficiency units. So I would say short term, I would expect a slowdown in the number of participants per year, but over time, we would hope that would go back up.

Q. Okay. Thank you, Mr. Brandt. Now, let me jump down to your BuildSmart program. Now, I see 2 percent of the eligible participants are participating in BuildSmart. How much energy might we estimate as being saved by the BuildSmart program?

A. Probably 15 megawatts.

Q. Okay. And would that be annual, or that's --

A. That's program to date.

Q. And when did that program start?

A. In the late 1990s.

Q. So would you agree that if the standards of the BuildSmart program were set as the minimum standard, we would increase substantially the use of energy saved? I'll rephrase that if it's a little convoluted.

A. Thank you.

Q. You show 2 percent participation in your BuildSmart program. What if we were to get that participation rate up to 90 percent? How much more would we save? That's two questions; right?

If we were to bring it up to 90 percent -- could we bring it up to 90 percent? That's one question. Two percent, could we bring it up to 90 percent?

A. As a voluntary program, I don't believe you could get to 90 percent.

Q. Thank you. And what if it was a mandatory program?

A. Well, I think over time, you'll see -- once again, BuildSmart is another example where the building code changed over time, so things that in the past we would incent customers to do in BuildSmart now become part of code. So the analogy to the air conditioner, the high efficiency change is very, very similar.

Q. And there is a -- well, do you see that happening right now in the State of Florida, the standards being increased as far as building?

A. Well, there's a normal code cycle that the building code goes through for normal upgrades. There has also been some discussions at both, I think, the Florida Energy Commission and the Governor's Action Team about trying to increase the code to be more efficient.

Q. In what program do you see the greatest opportunity for efficiencies as you have the programs listed here in the residential category?

A. Of the programs listed, I think the one that has the highest ability to defer peak demand is our On-Call program, which is our residential load management program.

Q. Do you see any changes in the rules regarding the use of electricity in the State of Florida that will

impact your On-Call program?

A. No, I'm not aware of any.

Q. Okay. So the On-Call. What would be the next one after the On-Call program that you perceive to be the greatest -- have the greatest potential for giving us more energy efficiency into the immediate future?

A. Probably our business air conditioning program.

Q. Okay. I see you have a 3 percent participation rate. Would you say there's a lot of room for improvement in that?

A. Yes. The 3 percent is a little bit misleading, in that it's 3 percent of our business customers. But if you think about customers who participate in that program, it's primarily our largest customers, office buildings, schools, institutional customers, those types of customers. So they're skewed a little bit from, you know, the strip shopping centers, where in many cases the customer doesn't own the facility. You know, those are more difficult to get customers to participate in these types of programs.

Q. Yes, understandably. Thank you for clarifying that.

Now, is there a separate category for institutional participants?

A. Those are addressed by our business programs.

Q. Right. Do you separate those out? Do you have information that identifies a distinction between the institutional and other businesses?

A. We track that information. I don't have it with me.

Q. Okay. But that's available, right, if we --

A. Yes.

Q. Okay. Recently the State of Florida, the government has taken up analysis of what the Florida state can do, as you know.

MR. HUNTOON: Your Honor, I think I need to object to statements of fact and statements that the witness knows something. If Mr. Krasowski wants to inquire whether the witness does know something, I think that would be an appropriate question.

MR. KRASOWSKI: Excuse me. I'll try to avoid doing that and ask --

CHAIRMAN CARTER: Just ask a question.

MR. KRASOWSKI: Okay. Yes, yes.

CHAIRMAN CARTER: Thank you.

BY MR. KRASOWSKI:

Q. Okay. What's the next program in line that you think offers great opportunities for energy savings?

A. I would probably say one of our business load

management programs, which is the commercial demand reduction program, for instance.

Q. Is that the program where businesses volunteer to reduce usage when you need it, when you need energy?

A. That's correct.

Q. Okay. That's great. Were you listening in at the public portion at the beginning of the hearing?

A. I heard parts of it.

Q. Did you hear Mr. Gordon Hansen's presentation on some mathematical -- well, did you hear Mr. Gordon Hansen's presentation?

A. I don't recognize the name.

Q. Okay. Let me mention essentially what he said. First, he provided this for the record, and it's his computations that look at hot water heater --

MR. HUNTOON: Your Honor, I need to object again. I think Mr. Krasowski should simply ask a question.

CHAIRMAN CARTER: Yes, Mr. Krasowski. He said he's not familiar with Mr. Hansen, so it would be improper to try to impeach him with Mr. Hansen's document.

MR. KRASOWSKI: Okay. Can I give him a copy just so he can see it?

CHAIRMAN CARTER: Well, he said he didn't hear

it, so I don't think it would be appropriate.

MR. KRASOWSKI: Okay. Thank you, Your Honor. My apologies.

CHAIRMAN CARTER: No problem.

MR. KRASOWSKI: Okay.

CHAIRMAN CARTER: You can ask him his opinion.

MR. KRASOWSKI: About what? I'm scared. I'm too scared.

Okay. I'll just move on. Mr. Brandt is very cooperative, and if I ask the question right, he's going to tell me.

CHAIRMAN CARTER: There you go.

MR. KRASOWSKI: I'm sorry.

CHAIRMAN CARTER: Okay.

MR. KRASOWSKI: I apologize for all my flaws.

CHAIRMAN CARTER: You're okay.

BY MR. KRASOWSKI:

Q. Okay. Mr. Brandt, now, we've already established that your efforts have achieved substantial efficiencies and reductions in demand. And what I would like to try to do now -- let me ask you, do you understand the cost, or do you understand what has been projected as the potential range of costs for the proposed nuclear units?

A. Yes.

Q. Okay. Am I correct in my understanding that that would be between 12 and $24 billion, depending on what technology we go towards?

A. I believe that's what was spoken earlier today, yes.

Q. Do you have any estimate on what you might achieve if you had 12 to $24 billion to spend over the next 10 years implementing demand-side management programs?

A. I have not done that analysis.

Q. All right. Do you think that making these programs mandatory would provide efficiencies in our electrical use that would be multiples of what is represented here?

Let me rephrase that, if I may. If the voluntary programs that you show here that have been so successful, if the participation was increased, do you think we would realize a very large savings of electricity?

A. I think you would realize more savings than we currently have. I'm not sure I can tell you how big that would be.

Q. Okay. Well, I appreciate that, Mr. Brandt. If you'll give me a minute, maybe we might be done here.

Mr. Brandt, are you familiar with the solar --

well, do you deal with solar energy, or is that Ms. McBee's realm?

A. I think you need to be more specific about what you're asking.

Q. What I wanted to ask is if in your range of analysis you consider solar programs in other countries.

A. No, I have not.

MR. KRASOWSKI: You don't. Okay. Well, thank you, Mr. Brandt. Thank you for everything you do. I think you're doing a great job. Nice seeing you again, and it was great to talk to you.

THE WITNESS: Thank you very much.

MR. KRASOWSKI: I'm done with questions of Mr. Brandt. Thank you.

CHAIRMAN CARTER: Thank you. In the line of questioning about the mandatory DSM and those things, obviously, you said you didn't have any idea, but -- so I guess I shouldn't even ask. I was going to ask if you have any idea what you think it would cost the ratepayers and what it would cost the individual homeowners, because a lot of your volume would have to come -- I notice you had a discussion about the air conditioners and all like that, so it's probably an unfair question. But when you start thinking about things like that, you start thinking about how much is

it going cost, and those costs, particularly if the government starts to mandate things, people tend to be a little -- you know, we pride ourselves on property rights in Florida, so that may be a problematic thing.

I did want to ask, though -- and I think you've already said this. I think you said that based upon the fact that the programs are voluntary, you've probably maxed out on them. Was that not what you said pretty much?

THE WITNESS: Could you clarify which program?

CHAIRMAN CARTER: I think you went down with the -- do you want me to go down each one of them, or do you want to just tell me which ones they are that you think are maxed out?

THE WITNESS: I'll be more than happy to.

CHAIRMAN CARTER: Okay.

THE WITNESS: I think the issue that we probably talked about kind of maxing out was more in the residential HVAC program. And the issue there was I think temporarily maxed out, because we need to, as I talked about earlier, get the supply chain built up with those high efficiency units. I suspect we'll see a drop in participation short term, and then long term, you'll see participation ramp back up.

We saw a similar situation when the SEER was

changed to 10, so this process went -- it was probably 10 years ago where we kind of went through the same wave. So it's kind of playing itself out, just as we saw before, and we expect, you know, over time people will be replacing air conditioners in Florida. And this program -- high efficiency air conditioners makes sense for customers to do, have good economics, and provide good demand reduction for us. You know, I think we're just going through a little downturn due to the supply chain, but we expect it to go back up.

CHAIRMAN CARTER: And you think it's probably during the -- it may take about 10 years for the cycle to run its course? Has that been your experience?

THE WITNESS: My thought is -- I mean, we'll be back up in -- my suspicion is, you know, in a year or two, we'll see those participation numbers start picking up again. When we go through this cycle again will depend when the minimum SEER level is decided to be upgraded. And as I said, it was probably at least 10 years since it was done before. I suspect with all the interest in energy efficiency that we're now facing, it won't take 10 years for that to happen again.

CHAIRMAN CARTER: Good deal. Commissioners, before I go to staff, I want to see if you have any. Commissioner Skop, you're recognized.

COMMISSIONER SKOP: Thank you, Chairman Carter. Good afternoon, Mr. Brandt.

THE WITNESS: Good afternoon.

COMMISSIONER SKOP: I'm going to proceed cautiously. Although -- I want to draw your attention to the Sunshine Energy program for a second, because although that program is the subject of a separate docketed matter, FPL close to highlight the program in the course of this proceeding, and it did so by offering your prefiled direct testimony, your deposition, as well as late-filed exhibits. And that puts me in a difficult situation.

Starting on a positive note, I generally support the concept of the program and the recent completion of the Rothenbach project, for which I commend your efforts. Based on your testimony in the matter, however, I cannot allow FPL to showcase the Sunshine Energy program in this proceeding without commenting upon the significant concerns that I have.

Specifically, I'm disappointed in the manner in which this program is being portrayed, the management of this program, the performance of your vendor under the existing contract to date, directions in which the program is heading, and the utilization of the revenue stream from this program, which could be better used to

serve your customers and the needs of this state.

Based on the above, again, that's not really relevant to the proceeding, but I do have one question for you, and I would appreciate a very direct yes or no answer to this question. I'll even afford you the opportunity of conferring with counsel should you wish to do so. But my question is, at the time FPL sought permanent approval of the Sunshine Energy program, did FPL disclose to the Commission that FPL or its vendor was not meeting the solar buildout requirements in 2005 and 2006?

THE WITNESS: I don't believe that was a question at the time, so I would say no.

COMMISSIONER SKOP: Are you sure about that?

MR. HUNTOON: Commissioner, I'm not sure I understood the question.

COMMISSIONER SKOP: Okay. Let me reframe the question. And again, I'm looking to the witness based on his deposition testimony to answer it. And again, I apologize, but please recognize I have a job to do. And again, you know, I can't allow testimony to be, you know, brought before this Commission without, you know, subjecting it to appropriate fact checking.

My question is, at the time FPL sought permanent approval of the Sunshine Energy program, did

FPL disclose to the Commission that FPL or its vendor was not current or actually was not meeting its solar buildout requirements in 2005 and 2006?

MR. HUNTOON: Commissioner, again, I must apologize. I actually was representing the company at Mr. Brandt's deposition, and I don't recall that coming up, that particular question. And maybe I'm missing something entirely.

COMMISSIONER SKOP: Again, I don't want to go down a line of questioning that would result in impeachment, but I do want to make one quick point, and then we'll get out this.

Mr. Brandt, do you remember the deposition that you took on January 18th, 2008?

THE WITNESS: Yes, I do.

COMMISSIONER SKOP: And you were there?

THE WITNESS: Yes, I was.

COMMISSIONER SKOP: Your attorney was there, OPC was there, and PSC staff was there. On page 25 of your deposition, line 19, I believe you stated that we were not current during 2005 and 2006; correct?

THE WITNESS: That is correct.

COMMISSIONER SKOP: And that's in relation to the buildout requirements?

THE WITNESS: That is correct.

COMMISSIONER SKOP: And that's the requirements that you represent to your customers when you sign them up for this program?

THE WITNESS: That's our target, yes, that's correct.

COMMISSIONER SKOP: Thank you. I've made my point. No further questions.

CHAIRMAN CARTER: I better push the button first. Commissioners, any further questions?

Staff, you're recognized.

MS. FLEMING: We have no questions.

CHAIRMAN CARTER: Commissioner Argenziano, do you have any questions?

COMMISSIONER ARGENZIANO: No, not at this time.

CHAIRMAN CARTER: Thank you. Mr. Huntoon. Mr. Huntoon.

MR. HUNTOON: Huntoon. That's fine. Just don't call me late for dinner, as they say; right?

CHAIRMAN CARTER: Mr. H. You're recognized, sir.

MR. HUNTOON: Thank you, Mr. Chairman. Mr. Chairman, it's my understanding that the depositions have been admitted into the record and the entire scope of questions and answers of Mr. Brandt at the deposition

are part of the record at this point. I think that's right. Okay.

REDIRECT EXAMINATION

BY MR. HUNTOON:

Q. I just wanted to ask you, Mr. Brandt, whether the need analysis that the company has submitted in this case includes significant amounts of DSM in addition to existing DSM benefits.

A. Absolutely. We're estimating 1,899 additional megawatts of DSM to be done during this -- between now and 2020.

Q. And also, just one last question. Does FPL do all of the cost-effective DSM that it can identify?

A. Absolutely. You know, our charge, as directed by the Commission, is to make sure we identify and implement all cost-effective DSM.

MR. HUNTOON: I don't have any further questions.

CHAIRMAN CARTER: Commissioner Skop.

COMMISSIONER SKOP: Thank you, Mr. Chairman. And again, I want to emphasize for the record and as a point of clarification again, my line of questioning had absolutely nothing to do with the testimony with respect to FPL's DSM efforts. Thank you.

CHAIRMAN CARTER: Let's deal with our

exhibits.

MR. HUNTOON: Thank you, Mr. Chairman. We would like to move into the record Exhibits 52 and 53.

CHAIRMAN CARTER: Any objections? Hearing none, show it done.

(Exhibits Number 52 and 53 were admitted into the record.)

CHAIRMAN CARTER: Any further questions for Mr. Brandt?

Thank you, sir.

THE WITNESS: Thank very much.

CHAIRMAN CARTER: Do you want to take a moment before you call your next witness?

MR. BUTLER: That would be good if we could.

CHAIRMAN CARTER: Let's do that. Okay, everybody. Let's kind of -- let's take -- I'm looking at 3:55. We'll come back at 4:10.

MR. BUTLER: Thank you.

CHAIRMAN CARTER: We're in recess.

(Short recess.)

CHAIRMAN CARTER: Okay. We are back on the record, and we were in the process of getting ready to call the next witness. You're recognized.

MR. ANDERSON: Thank you, Chairman Carter. My name is Bryan Anderson appearing for Florida Power &

Light Company. Good afternoon, Ms. McBee.

THE WITNESS: Good afternoon.

CHAIRMAN CARTER: Whoa.

MR. ANDERSON: The witness -- I'm sorry.

CHAIRMAN CARTER: You're recognized. Go ahead.

MR. ANDERSON: Thank you very much.

Thereupon,

HENRIETTA G. McBEE

was called as a witness on behalf of Florida Power & Light Company and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. ANDERSON:

Q. Have you been sworn as a witness?

A. Yes, I have.

Q. Would you please tell us your name and your business address?

A. My name is Henrietta Gurri McBee, and my address is 700 Universe Boulevard, Juno Beach, Florida, 33408.

Q. By whom are you employed, and in what capacity?

A. I'm employed by FPL as Director of Project Development for Renewable Energy.

Q. Have you prepared and caused to be filed 24 pages of prefiled direct testimony in this proceeding?

A. Yes.

Q. Did you also cause to be filed an errata to your testimony?

A. Yes.

Q. Do you have any further changes or revisions to your prefiled direct testimony other than the errata sheet?

A. No.

Q. If I asked you the same questions contained in your prefiled direct testimony, would your answers be the same here today?

A. Yes.

MR. ANDERSON: Chairman Carter, FPL requests that the prefiled direct testimony Ms. McBee be inserted into the record as though read.

CHAIRMAN CARTER: The prefiled testimony will be inserted into the record as though read.

BY MR. ANDERSON:

Q. Are you sponsoring any exhibits to your direct testimony?

A. Yes, I am.

Q. Are they documents HGM-1 through HGM-4 attached to your direct testimony?

A. Yes.

MR. ANDERSON: Chairman Carter, I would note that Ms. McBee's exhibits have been premarked on the staff exhibit list for identification as Exhibits 54 to 57.

In re: Florida Power & Light Company's Petition to Determine Need for Determine Need for Turkey Point Nuclear Units 6 and 7 Electrical Power Plant	))))	Docket No: 070650-EI

ERRATA SHEET

DIRECT TESTIMONY OF H.M. GURRI MCBEE

PAGE #	LINE #	CORRECTION
9	20-22	Replace "In June 2007, FPL announced the St. Lucie Wind Project, a 3 to 4.5 MW project, which FPL hopes to site near its St. Lucie nuclear generating plant." with "On September 28, 2007, FPL submitted applications to St. Lucie County for zoning, conditional and height amendment for up to 9 wind turbine generators. The range of MW would be up to approximately 20 MW."

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF HENRIETTA G. MCBEE

DOCKET NO. 07_____-EI

OCTOBER 16, 2007

Q. Please state your name and business address.

A. My name is Henrietta G. McBee. My business address is 700 Universe Boulevard, Juno Beach, Florida 33408.

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

A. I am employed by Florida Power & Light Company (FPL or the Company) as Director, Project Development for Renewable Energy.

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

A. I am responsible for developing renewable energy projects to provide electricity for FPL's customers.

Q. Please describe your educational background and professional experience.

A. I have worked in the electric power generation industry for 24 years. Prior to joining FPL's Project Development group, I managed FPL Energy, LLC's (FPL Energy) wind and biomass renewable energy portfolio east of the Mississippi River. FPL Energy is the largest U.S. generator of solar and wind power, as well as a major producer of energy from other clean sources. My experience includes all aspects of project development and project

management. This includes developing and managing project budgets, costs, financings, and schedules; negotiating with suppliers and partners; arranging land leases and easements with landowners; working with local and state government officials, and third party investors; and coordinating construction, communications, legal, customer requirements, tax, accounting, risk, finance, operations and consultants.

I graduated from the University of Miami with a Bachelor of Science degree in Industrial Engineering; a Master of Science degree in Industrial Engineering; and a Masters in Business Administration with a concentration in finance.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits HGM-1 through HGM-4, which are attached to my direct testimony.

Exhibit HGM-1	Renewable Energy Production by State
Exhibit HGM-2	Renewable Energy Production by State Excluding Hydro and Geothermal
Exhibit HGM-3	NREL United States Classes of Wind Power Density Map
Exhibit HGM-4	NREL United States Solar Energy Potential Map

Q. Are you sponsoring any sections of the Need Study?

A. Yes. I am sponsoring Section III.F titled Renewable Energy.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe FPL's history of providing energy from renewable energy sources to its customers, some of FPL's programs and development work relating to renewable energy, the results of FPL's recent request for proposals for new renewable energy in Florida, and FPL's assessment of Florida's renewable energy resources.

Q. Please summarize your testimony.

A. U.S. Department of Energy (DOE) data released in July 2007 shows that Florida does a very good job producing energy from its renewable resources. This information shows that Florida ranks second in the nation in renewable energy production when one considers that Florida does not have the abundant hydroelectric and geothermal resources that the highest ranking states have. This is shown in Exhibit HGM-2 to my testimony.

FPL has been providing a portion of its customers' energy needs from renewable resources since 1980. Currently, FPL provides more than 300 MW of power from renewable resources yearly. This energy is purchased from owners of waste-to-energy, biomass and landfill gas power plants located in Florida. From 2001 to 2006, FPL has provided customers with about 1.5% of net energy for load from renewable sources. During 2006, FPL provided its customers with a total of 1,652,258 MWh of electricity from renewable sources.

FPL is working to extract as much energy as technically and economically possible from renewable resources and continues to explore the use of emerging technologies. Today, FPL purchases more than 300 MW of firm and non-firm capacity and energy from renewable resources yearly and has asked for proposals to add even more.

In July 2007, FPL concluded a renewable energy Request for Proposals (2007 Renewable RFP). The 2007 Renewable RFP sought proposals for new renewable energy with expected in-service dates prior to June 2015. The 2007 Renewable RFP also sought information regarding new renewable firm capacity and/or energy sources with expected in-service dates beyond 2015. The 2007 Renewable RFP contained no restriction on price and provided maximum flexibility for potential suppliers of renewable energy in order to encourage as much participation as possible. The 2007 Renewable RFP was available to potential bidders in Florida, across the country and beyond for their consideration and response. As a result of the 2007 Renewable RFP, FPL received proposals from five bidders totaling 144 MW of firm capacity. FPL's incorporation of these potential resources in its Integrated Resource Planning (IRP) analysis underlying this petition is discussed in greater detail in the testimony of FPL witness Sim. In addition, FPL received a proposal for the supply of 100 MW of non-firm capacity and energy from technology under development based on harnessing ocean current energy.

FPL will continue to promote renewable generation in Florida through RFPs and other purchase power agreements, and is exploring direct development of renewable generation projects, including solar and wind. FPL is presently in the process of considering and supporting development of wind and other renewable energy sources in the State of Florida. Additionally, FPL recently announced a major solar energy initiative in Florida which is expected to result in installation of up to 300 MW of solar capacity at a cost of up to an estimated $900 million. FPL is committed to developing the maximum cost-effective amount of renewable resources to serve its customers.

FPL agrees with the general conclusions with respect to availability of renewable energy stated in "An Assessment of Renewable Electric Generating Technologies for Florida" issued by the Florida Public Service Commission (FPSC or Commission) and the Florida Department of Environmental Protection (FDEP) in 2003. While the overall expectation of energy production from renewable sources in Florida is modest, FPL supports development of Florida's renewable resources to the maximum extent feasible. There is ample room for all of the good renewable energy ideas that can be brought forward, and FPL is warmly encouraging of their development and Implementation.

I. FPL's Use of Renewable Energy to Serve Customers

Q. Does FPL use renewable energy to serve its customers?

A. Yes. Since 1980, a portion of FPL's customers' electricity requirements have been produced from renewable resources including waste-to-energy, biomass and landfill gas. FPL procured this energy from the owners and operators of renewable energy facilities. To this end, the Commission recently approved a revised and improved Standard Offer Contract for renewable energy which is available for renewable suppliers' use. The Standard Offer Contract implements the FPSC's recent amendments to its rules concerning Standard Offer Contracts. In addition to being willing to purchase renewable energy for its customers using the Standard Offer Contract, FPL is also willing to negotiate special contracts with renewable energy project owners and operators. For example, FPL is willing to negotiate special contracts for renewable energy with pricing based upon fossil units other than the natural gas-fired combined cycle which is the basis for FPL's Standard Offer Contract. In this regard, FPL is willing to negotiate pricing based upon the economics of solid fuel-fired generating plants, if this is desired by owners or operators of renewable energy facilities.

Q. How much renewable energy does FPL provide to its customers?

A. Today, FPL provides more than 300 MW of firm and non-firm capacity and energy from renewable resources yearly. This energy is purchased from owners of waste-to-energy, biomass and landfill gas power plants located in

Florida. From 2001 to 2006, FPL has provided customers with about 1.5% of net energy for load from renewable sources. During 2006, FPL provided its customers with a total of 1,652,258 MWh of electricity from renewable sources.

Q. How does FPL encourage the development of renewable resources?

A. FPL has a multi-pronged approach to encouraging and supporting the development of renewable resources in Florida. For example, as discussed in greater detail in FPL witness Brandt's testimony, FPL's Product Management and Operations Department supports the development of renewable energy projects and the management of renewable programs offered to FPL's customers. FPL's Project Development organization, of which I am a member, supports the development of renewable supply side generation projects. In addition, as addressed in FPL witness Silva's testimony, FPL's Resource Assessment and Planning organization supports the negotiation of renewable purchase power agreements.

Q. Is FPL actively seeking to maintain and increase the amount of renewable energy that it purchases to serve its customers?

A. Yes. FPL's representatives are in frequent contact with people and entities interested in providing renewable energy. FPL is actively working with the representatives of several prospective suppliers of renewable energy representing a total of up to 179 MW of new renewable energy production, from such resources as landfill gas, waste-to-energy, and solar photovoltaic (PV). This is in addition to the possible new resources that have been

proposed in response to FPL's 2007 Renewable RFP, discussed below, which are being evaluated for possible negotiation. Also as discussed below, FPL is actively working to support development of renewable technologies in Florida.

II. FPL's Support for and Development of Renewable Energy Projects.

Q. In addition to achieving more than 300 MW of renewable energy purchases from waste-to-energy, biomass and landfill gas, is FPL involved in other activities to increase the use of renewable energy in Florida?

A. Yes. In addition to its renewable energy procurement activities, FPL is actively involved in developing and performing due diligence with respect to wind energy and solar energy. FPL is also assisting Florida universities and others with the investigation of possible electric generation using ocean currents. In addition, FPL recently issued a 2007 Renewable RFP, and received several responses totaling 144 MW of firm capacity, described below.

Q. Please comment on the investigation of ocean currents as a source of possible electric generation.

A. Florida is one of the few places in the world that has a major ocean current located near electric load centers. The Gulf Stream that flows off of Florida's coast is a potential future source of ocean current energy. The flowing waters

could turn ocean turbine generators in much the same way that wind turns wind turbine generators. While the technology to do this is still in the research stage, FPL is actively involved with Florida Atlantic University's Florida Center of Excellence in Ocean Energy Technology in developing this non-emitting renewable technology. FPL is hopeful that it may be commercially deployed to serve its customers first in experimental and ultimately in commercial amounts in the future. For example, in response to the 2007 Renewable RFP, FPL received a proposal for the provision of 100 MW of non-firm capacity and energy from ocean current energy. The ocean current energy bid is an instance where FPL, due to its relationships with entities developing innovative new technologies, actively encouraged the submission of a bid where, absent such encouragement, no bid would have been forthcoming.

Q. Please describe FPL's consideration of and approach to developing wind energy in Florida.

A. Since 2004, FPL has attempted to site a wind project along Florida's coast, utilizing several potential locations, but has not yet obtained site approval for a project. Concerns raised with respect to the possible siting of the project have included potential radio signal interference, avian concerns, aircraft flight paths, land availability, and other local land use matters. In June 2007, FPL announced the St. Lucie Wind Project, a 3 to 4.5 MW project, which FPL hopes to site near its St. Lucie nuclear generating plant. FPL is pursuing the necessary permits and performing due diligence required for this project. In

addition, FPL will be pursuing additional wind opportunities that would add to its renewable portfolio, which FPL will build, own and operate to provide renewable energy for customers.

Q. Has FPL supported the development and testing of solar technology?

A. Yes. Much of this work has been managed as part of FPL's successful demand side management (DSM) initiatives, and is described in the testimony of FPL witness Brandt in this proceeding.

Q. Is FPL currently supporting deployment of solar energy technology in Florida?

A. Yes. FPL recently announced a major solar energy initiative in Florida which is expected to result in installation of up to 300 MW of solar capacity at a cost of up to an estimated $900 million. This is expected to begin with installation of about 10 MW of capacity at an existing FPL generating site. While this major new initiative is subject to regulatory, land use and other approvals as well as business due diligence, FPL is optimistic about the potential of using a new solar generating technology to provide service to customers in Florida. FPL witness Brandt's testimony describes FPL's activities with PV technology used for DSM purposes. I am responsible for the supply side deployment of PV. On the supply side, for example, FPL has a solar PV project at its Martin plant site that was first energized in the 1990s. Under FPL's Sunshine Energy Program, a 250 kW PV array is being built in Sarasota, Florida that is expected to be in commercial operation around the end of 2007.

Q. Is FPL participating in the investigation of other renewable energy sources?

A. Yes. FPL has established alliances with several Florida academic institutions, as well as the Florida Solar Energy Center, the Electric Power Research Institute and private companies developing technology concerning investigating other possible future renewable energy sources, such as generating electricity from ocean currents. As I previously mentioned, FPL is actively working with Florida Atlantic University exploring ocean current and ocean thermal (utilizing cold water from deep in the ocean for district cooling) energy, and is spearheading a study to further analyze Florida's off-shore wind potential. In addition, FPL is financially supporting meteorological tower research by the University of Florida. The research results should be useful in better understanding the specifics of using renewable resources such as wind in Florida. FPL is also providing information to the Florida Energy Commission's Renewable Energy Task Force which is assessing various aspects of renewable energy in Florida.

Q. You mentioned FPL's 2007 Renewable RFP. Please describe the RFP.

A. FPL has been soliciting proposals for renewable energy for many years, and this is an established part of FPL's business. FPL's 2007 Renewable RFP was issued on April 23, 2007 in order to identify a variety of proposals for new, viable, renewable firm capacity and/or energy with expected in-service dates prior to June 2015. The RFP also sought to obtain information regarding new

renewable firm capacity and/or energy sources with expected in-service dates beyond 2015.

The RFP solicited proposals for New Renewable Generation Facilities (NRGFs). In order to encourage maximum participation, the RFP encouraged creative proposals, and did not place any conditions on pricing or payment structure, terms and conditions, or any other item, except that the facility is a new facility and that the proposals include the sale of renewable energy credits to FPL. The deadline for submission of proposals was July 2, 2007. FPL is currently evaluating the proposals it received. FPL's incorporation of these potential resources in its IRP analysis underlying FPL's petition in this matter is discussed in greater detail in the testimony of FPL witness Sim.

Q. What were the results of the 2007 Renewable RFP?

A. FPL found that there was widespread interest in the 2007 Renewable RFP, with inquiries from throughout the country, from New York to California. But despite the absence of any pricing limits, the great flexibility afforded for proposals, and the wide dissemination of the RFP, FPL received only five proposals, totaling 144 MW of firm capacity in addition to the 100 MW of non-firm ocean current energy.

Q. Were the results of the 2007 Renewable RFP consistent with results of prior RFPs?

A. Yes. The results were consistent in the sense that prior RFPs, including a prior renewable-only RFP, resulted in proposals ranging from zero to very

little renewable energy being proposed. For example, in 2001 FPL issued a renewable energy RFP which resulted in no offers of firm capacity and only about 580,000 MWh of energy, mainly from biomass and landfill gas.

III. Overview of Renewable Energy Resources In Florida

Q. Have any major assessments been performed of renewable energy resources in Florida?

A. Yes. During 2003 the FPSC and the FDEP issued "An Assessment of Renewable Electric Generating Technologies for Florida" (the FPSC/FDEP Renewable Assessment). The FPSC/FDEP Renewable Assessment contained several key conclusions which in FPL's view accurately describe the overall range of technologies and aggregate capability of renewable resources reasonably available in Florida. FPL has done additional work assessing renewable resources and has also recently conducted the 2007 Renewable RFP, described above. FPL's observations based on its own assessments, including consideration of the results of its 2007 Renewable RFP, are consistent with the FPSC/FDEP Renewable Assessment.

Q. What definition of renewable resources does Florida use?

A. The FPSC/FDEP Renewable Assessment acknowledged that the definition of renewable resources varies from state to state. This makes sense because different renewable resources are available in various states. The FPSC/FDEP Renewable Assessment used a definition of renewable resources consistent

with the present definition of renewable energy stated in the Florida Statutes. Section 366.91, Florida Statutes, defines renewable energy as follows:

> ...electrical energy produced from a method that uses one or more of the following fuels or energy sources: hydrogen produced from sources other than fossil fuels, biomass, solar energy, geothermal energy, wind energy, ocean energy, and hydroelectric power. The term includes the alternative energy resource, waste heat, from sulfuric acid manufacturing operations.

Q. Using the definition in Section 366.91, Florida Statutes, of renewable energy, discussed above, what did the FPSC/FDEP Renewable Assessment conclude concerning aggregate availability of renewable energy in Florida?

A. The FPSC/FDEP Renewable Assessment concluded that as of 2003 Florida as a whole had approximately 680 MW of potential renewable capacity, exclusive of waste heat from sulfuric acid manufacturing operations, which the Renewable Assessment estimated as providing an additional 340 MW of potential capacity from renewable resources. The FPSC/FDEP Renewable Assessment also reported, based on anecdotal information, an estimate of 651 MW of "potential and commercially feasible, near term, and new renewable capacity that could be developed in Florida."

The FPSC/FDEP Renewable Assessment noted that nationally the vast majority of renewable energy is provided by hydroelectric sources, of which Florida has very little (about 50 MW in the Panhandle of the state, outside of FPL's service territory, the last electric generator of which was built in 1957). The FPSC/FDEP Renewable Assessment observed that Florida's renewable electric production is largely derived from municipal solid waste-to-energy, biomass materials such as agricultural waste product and wood residues used as fuel in boilers, and waste heat recovered from industrial manufacturing processes. The FPSC/FDEP Renewable Assessment also noted that there are a few photovoltaic installations but that their total generating capacity is not significant because most of these are only a few kilowatts in size. Feasible and commercially mature technologies identified in the FPSC/FDEP Renewable Assessment were biomass derived fuels, municipal solid waste (MSW), landfill and digester gas, hydroelectric, solar PV and cogeneration.

Q. What are some of the major differences between the many types of renewable resources that the FPSC/FDEP Renewable Assessment considered?

A. The FPSC/FDEP Renewable Assessment noted that significant differences exist between renewable technologies in the areas of cost-effectiveness, environmental impact, developmental stage and how they are dispatched as part of an integrated supply system. For example, the report stated as follows:

Cost – effectiveness: Renewable technologies often require significant capital to develop, construct and in many cases operate. This higher capital cost is often offset by lower fuel costs depending on the technology. The lifecycle cost of energy provided must also consider the overall amount of generation that the technology will provide, making low capacity factor technologies less cost-effective.

Environmental Impact: Renewable technologies vary widely in the magnitude and type of environmental impact they may have. Some renewable technologies have poor emission profiles while others have no emissions. However, no emissions does not mean no environmental impact as these technologies require significant land resources for unit placement as well as transmission and distribution infrastructure to deliver widely distributed smaller generation to load centers.

Developmental Stage: Renewable technologies vary widely in the level of technical maturity. For example, wind technology is relatively mature in contrast to emerging technologies such as ocean current energy. Even technologies such as solar PV require significant technological improvement to reduce costs.

System Dispatch: Some renewable technologies are dependent on a natural resource that is intermittent in availability. This presents challenges to system

operators who must have adequate backup generation and spinning reserves to accommodate generation that fluctuates with, for example, wind speed or cloud cover.

Q. Is FPL's view of the availability of renewable energy resources in Florida generally consistent with the FPSC Renewable Assessment that you have described?

A. Yes. Without understating the importance of renewable energy for Florida, nor FPL's interest in utilizing and promoting the use of such resources, FPL's view is that the FPSC/FDEP Renewable Assessment's conclusions remain correct in terms of the comparatively small potential contribution of renewable energy to overall electricity production in Florida. The resources recognized as reasonably available in the FPSC/FDEP's Renewable Assessment on a commercial basis were modest.

Q. How does Florida's renewable energy production compare with the renewable energy production of other states?

A. One needs to recall that the definition of renewable energy varies from state to state. That said, based upon the most recent DOE data released in July 2007, Florida ranked fourteenth in the nation in renewable energy production, despite the fact that Florida does not have the abundant hydroelectric, geothermal and wind resources that higher ranking states have. A chart showing Florida's comparative renewable energy production is attached to my direct testimony as Exhibit HGM-1.

Q. Does Exhibit HGM-1 fairly represent how well Florida is doing overall among states in terms of renewable energy production?

A. No. It is not fair to compare Florida, which has no major rivers that can be dammed and used to generate electricity, with states like Washington, California, Oregon and New York, which all have electricity produced by using dams and hydroelectric generators. In fact, nearly every state that ranked ahead of Florida for renewable energy production, as shown in the most recently issued DOE data, includes extensive use of conventional hydroelectric power. Some states have other resources that Florida simply does not have. As just one example, California utilizes geothermal energy for electricity production.

Q. How does Florida's renewable energy production compare with other states when one takes into account the renewable resources available in-state?

A. A more apples-to-apples comparison shows that Florida is a very successful state in renewable energy production, taking into account available resources. For example, review of the DOE information released in July 2007 shows that Florida ranks second in the nation when one takes into account that Florida does not have the abundant hydroelectric and geothermal resources that the highest ranking states have. Florida has substantially developed its available waste-to-energy, landfill gas, wood, wood waste and other biomass resources. A chart showing Florida's comparative renewable energy production taking into consideration available in-state resources is attached as Exhibit HGM-2.

Q. In addition to the availability of different renewable resources, are there other factors that should be considered in assessing the development of renewable energy resources compared with other energy resources?

A. Yes. There are many important factors to consider, but among the most important is cost, which translates into the price paid by customers. Some renewable resources can be used to produce electricity at costs comparable to other generation, and these resources are the ones that have been most developed. Others can be used to produce electricity but at a higher cost in comparison with other generation, and this factor along with availability of the resource is important in determining the economic viability of a specific technology. For example, conventional hydropower is both renewable and provides very low-cost electricity where it is available. In contrast, the cost of electricity from solar PV is high where there is a great deal of solar energy available.

Q. Please comment on wind as a potential renewable resource in Florida.

A. For several years, FPL has been diligently seeking sites in Florida with wind speeds sufficient to provide net positive generation, and is presently working to develop locations at which the Company can install wind turbine generators. It should be also noted that in locations where wind speed is sufficient for some turbine generators to be installed, that there are other barriers to development. For example, as I previously discussed, FPL's siting efforts in Florida have encountered opposition to installing wind turbine generators based on aesthetic, wildlife preservation and other concerns.

Wind turbine generators can only generate electricity when there is sufficient wind to turn the turbine blades and the generator, producing power. Attached to my testimony as Exhibit HGM-3 is a National Renewable Energy Laboratory (NREL) map showing wind resource potential in the United States. Looking at the map, one sees that Florida has very little wind resource, in contrast to California and areas like West Texas, or the upper Midwest/Great Plains states and portions of the Northeast – all areas where a great deal of U.S. wind development has been successfully implemented. The velocity and consistency of wind in Florida are such as to produce little reliable power and a low capacity factor. Capacity factor is a percentage calculated by dividing how much electricity a generator produces annually compared with how much would be produced if the generator were to operate all of the time during the year (i.e., if the wind were to blow constantly at the wind generator's electric output rating speed at all times and the generator was always available, then the capacity factor would be 100%). This is important because the economic efficiency of wind generation depends very much upon the capacity factor at which wind turbine generators operate.

Capacity factor is also important to consider when comparing wind generation with other kinds of generation that can be installed in Florida. For example, a Florida wind turbine generator might achieve a capacity factor of 15%, while a Florida nuclear plant might achieve a capacity factor of more than 90%. This means that for any assumed installed capacity, the nuclear base load

technology would produce six times the amount of energy as the wind technology.

Also in contrast with a base load generating resource, wind energy provides intermittent electric energy and is not a dependable source of electrical capacity, meaning that wind generation cannot be counted on to provide electricity upon demand when customers require it.

Q. Has FPL commissioned any special studies/reports of wind resources available in Florida?

A. Yes. FPL has been assessing the commercial wind energy potential of the State of Florida for several years. In this regard, FPL commissioned three wind studies of the State of Florida. These studies are much more detailed than information commonly available through government and general industry sources. The first study addressed the state of Florida as a whole. Two more recent studies focused on the Southwest and Northeast Florida geographical regions. The studies all had similar overall findings:

- Florida's wind resource is minimally adequate to produce some power along portions of its coast;
- The wind resources decline significantly inland; and
- Florida's wind resource is seasonal, and is more productive during winter (October through March).

Q. What conclusions does FPL draw from the wind studies from a wind energy development perspective?

A. From these studies, and FPL's other work assessing possible wind energy development in Florida, FPL concludes that (i) the wind energy that may be subject to development is on or near Florida's beaches (including possible offshore wind); and (ii) while wind power might offset some winter energy use, it is not meaningfully available during FPL's Summer load peak and, therefore, cannot contribute to meeting FPL's reserve margin on a reliable basis. As discussed in FPL witness Sim's testimony, FPL's Summer reserve margin is the primary driver of FPL's resource needs.

Q. Please comment on solar energy as a potential renewable resource.

A. Solar PV and large scale solar thermal energy are comparatively expensive sources of electricity. Solar energy is intermittent in nature, as it is dependent on time of day and weather conditions. Solar energy provides intermittent electric energy and is not a dependable source of electrical capacity, meaning that solar energy plants cannot be counted on to provide electricity upon demand when customers require it, unless electricity storage is integrated into the solar facility.

Q. Where is the best solar resource in the U.S.?

A. The best U.S. solar resource is in deserts where there is a great deal of sunlight and heat, low humidity and little cloud cover. An example of this is California's Mojave Desert, where insolation (the amount of solar energy) is among the best available in the United States. Since 1990, FPL's sister company, FPL Energy, has operated the world's largest solar power plant there. The Solar Energy Generating Systems (SEGS) facility in the Mojave

Desert has over 900,000 mirrors and covers 2,400 acres (nearly 10 square kilometers), with just over 300 MW of installed capacity using parabolic trough solar thermal technology and natural gas. Natural gas is necessary in order that the SEGS plant can be relied upon to provide capacity as well as energy. This illustrates that without natural gas or some other supplementary fuel source, solar power plants cannot provide capacity to serve customers when customers require service.

Q. Please describe some of the considerations in utilizing solar energy in Florida.

A. Attached to my testimony as Exhibit HGM-4 is an NREL map showing United States solar energy potential. Looking at the map, one can see that Florida's solar energy potential is not as robust as that in the Mojave Desert where the SEGS facility is located. FPL is commissioning a study to better evaluate the potential solar resource in FPL's service territory. Development of utility scale solar projects in Florida requires extensive land resources, estimated to be in the range of 10 acres/MW. This means that a Florida developer for a facility comparable to the SEGS facility (assuming adequate insolation existed to support a large solar thermal facility), would need to own or acquire the right to use about 3,500 acres. It should be kept in mind that the largest PV installation in the United States is less than 18 MW. Distributed installations of rooftop solar PV generation is feasible, but due to low capacity factor, high cost, and intermittent availability, it is not a substitute for high capacity factor, high reliability base load generation.

Because solar power is an intermittent resource with a low capacity factor, many more MW of solar would need to be installed to equate with the energy production of reliable base load electric generating resources.

Q. Does this conclude your direct testimony?

A. Yes.

BY MR. ANDERSON:

Q. Ms. McBee, have you prepared a summary of your direct testimony?

A. Yes, I have.

Q. Please provide your summary to the Commission.

A. Thank you. Good afternoon, Commissioners. FPL has been providing a portion of its customer energy needs from renewable resources since 1980. Currently, FPL provides more than 300 megawatts and 1.6 million megawatt-hours of power from renewable resources yearly. This energy is purchased from owners of waste-to-energy, biomass, and landfill gas power plants located in Florida. FPL is working to extract as much energy as technically and economically possible from renewable resources and continues to explore the use of emerging technologies.

In July 2007, FPL concluded a renewable energy request for proposals for renewable energy with expected in-service dates prior to June 2015. In the RFP, FPL asked for information regarding new renewables beyond 2015. Importantly, the RFP contained no restriction on price and provided maximum flexibility for potential suppliers in order to encourage as much participation as possible. As a result of the 2007 renewable RFP, FPL received proposals from five bidders totaling 144

megawatts of firm capacity. FPL incorporated these potential resources in its integrated resource planning underlying this petition, as discussed in the testimony of FPL witness Dr. Sim.

FPL will continue to promote renewable generation in Florida through RFPs and other purchased power agreements and is exploring direct development of renewable generation projects, including solar, wind, and other renewable energy sources. This past summer, FPL announced a collaborative initiative with St. Lucie County to work towards developing the first wind project in the state on Hutchinson Island. Additionally, FPL recently announced a major clean energy plan to build up to 300 megawatts of solar generating capacity in Florida. This includes FPL's work with NASA to site a large scale solar photovoltaic facility up to 10 megawatts at the Kennedy Space Center.

My testimony explains that FPL agrees with the general conclusions with respect to availability of renewable energy stated in "An Assessment of Renewable Electric Generating Technologies for Florida" issued by the Florida Public Service Commission and the Florida Department of Environmental Protection in 2003. While the overall expectation of energy production from renewable sources in Florida is modest, FPL supports

development of Florida's renewable resources to the maximum extent feasible. There is ample room for all the good renewable energy ideas that can be brought forward, and FPL warmly encourages their development and implementation. At the same time, it is important to recognize, as explained in Dr. Sim's testimony, that renewable energy is sufficient only to meet a small portion of FPL's customers' needs.

That concludes my summary. Thank you.

MR. ANDERSON: Chairman Carter, Ms. McBee is available for cross-examination.

CHAIRMAN CARTER: Thank you, Mr. Anderson.

Commissioners, just kind of FYI -- sorry I didn't say that this morning. Usually I try to let you know in advance about how long we're going. I know we have people from out of town coming in and making travel arrangements, and I neglected to mention this morning that we will be going until 5:00 today, and we'll pick up again tomorrow and conclude from there. I'm sorry about that. I wanted to take care of all my housekeeping matters this morning, but I was not able to do that.

Mr. Beck.

MR. BECK: Thank you. I have no questions.

CHAIRMAN CARTER: Mr. Krasowski.

MR. KRASOWSKI: Thank you, Commissioner Carter.

CROSS-EXAMINATION

BY MR. KRASOWSKI:

Q. Hello, Ms. McBee.

A. Hello.

Q. My name is Bob Krasowski. I'm here with my wife, Jan, and we're intervenors as ratepayers to FP&L, so we're very interested in the opportunities for solar, efficiency, and renewables, and we're very interested in your work. I have a couple of pages of questions. I would like to move through them as quickly as possible.

I'll mention that this question relates to your testimony on page 2, line 3. As you look for that, maybe I'll ask my question, and it is, what are the factors involved in arranging easements with landowners? That's one of your responsibilities.

A. We have to negotiate the commercial terms with the landowner, and that includes the price as well as the actual area. And you also have to include land utilization issues.

Q. Does FP&L pay for the privilege of going across land based on each individual landowner?

A. I'm sorry. Can you please explain the question?

Q. Is there is a payment involved to the individual landowners?

A. In some cases, that's correct.

Q. Let me ask you about the easement behind my house where my power comes in from. Is that easement provided by government, or how does that work?

MR. ANDERSON: May we please object.

MR. KRASOWSKI: Okay. Too many questions at once.

CHAIRMAN CARTER: She probably doesn't know where you live.

MR. KRASOWSKI: Thank you. I appreciate that.

CHAIRMAN CARTER: Mr. Anderson, state your objection for the record, please.

MR. ANDERSON: Yes. The easements behind Mr. Krasowski's house are irrelevant to any issue in this proceeding.

CHAIRMAN CARTER: I sustain the objection. Mr. Krasowski, move on.

MR. KRASOWSKI: Okay.

CHAIRMAN CARTER: Thank you.

BY MR. KRASOWSKI:

Q. But easements in general -- okay. I'll just move on. Okay. Thanks. That's not that important.

On page 4, line 4, what are you referring to?

What kind of firm and non-firm capacity and energy are purchased yearly?

A. We have power purchase agreements that have been negotiated, and as I mentioned in my summary, they're biomass, landfill gas, those kinds.

Q. And which is firm and which is not firm, non-firm?

A. We have approximately 158 megawatts of firm and 146 megawatts of non-firm, or what we consider as-available.

Q. Can you identify for me what the non-firm is?

A. I cannot.

Q. Okay. Can you define firm?

A. It's capacity that's available at all times.

Q. Okay. Thank you. You mentioned -- at page 5, line 15, you make reference to a study that you -- well, and in your opening statement, you referred to a study that was done in 2003.

A. Yes.

Q. Are there any more recent updates on the issues that that study evaluates?

A. I'm not aware of the Public Service Commission having any recent updates.

Q. Okay. Thank you. What do you mean -- on lines 17 and 18 on the same page, what do you mean when

you refer to -- by feasible?

A. Can you explain your question, please?

Q. Okay. You state that while the overall expectation of energy production from renewable sources in Florida is modest, FPL supports development of Florida's renewable resources to the maximum extent feasible. Can you clarify what you mean by feasible?

A. If the resource is available, we will try to harness it.

Q. On lines 17 and 18 on the same page, same lines, I guess, or line 18, you said there is ample room for all of the good renewable energy ideas that can be brought forward, and FP&L is warmly encouraging the development and implementation. What are some bad renewable energy ideas?

A. I don't understand the question.

Q. Well, you refer to good renewable energy ideas. Are there bad ideas you're aware of?

A. What I was trying to say in my testimony is that ideas that are cost-effective and doable for the customer.

Q. Cost-effective as it's determined by what standard?

A. Cost-effective as determined by what makes sense to our customers.

Q. Is the RIM standard involved in that?

A. I am not -- the RIM standard is not part of my testimony.

Q. Okay. Thank you. On page 6, on lines 7 and 8, I would like to ask you about the Commission recently approved a revised and improvement standard offer contract. What does it pay, the standard offer contract?

A. The standard offer contract is available on our website. I can't tell you exactly what it pays.

Q. But it's available on the website?

A. Yes.

Q. Thank you very much. On page 7, of the 179 megawatts of new renewable energy production, how much is solar voltaic? And that's at line 22. I'm sorry.

A. I'm not able to break that up.

Q. Okay. You identify in your testimony waste-to-energy as a renewable resource. Are you familiar with the greenhouse gas emissions that are emitted from waste energy plants?

A. Generally speaking.

Q. Okay. Can you explain why waste-to-energy plants are considered renewable energy?

A. I'm using the definition per the statute that

I refer to in my testimony.

Q. Okay. Thank you. On page 9, lines 9 through 10, you speak of the potential of ocean current. Could you -- on line 9, could you please explain more about that?

A. We received a bid as part of our request for proposal, and we received a non-firm capacity bid for 100 megawatts, as stated therein, from a supplier that's working to prototype an ocean current device.

Q. By non-firm capacity, do you mean that it's in the abstract, suggest stage now?

A. I don't understand the question.

Q. I don't understand non-firm capacity.

A. It's not available all the time.

Q. Oh, okay. Intermittent, would that --

A. It may be intermittent, but non-firm is just that it's not available for evening and to be able to be relied on by your customers.

Q. How does ocean current -- okay. You're referring to the project that's -- oh, maybe not. Okay. What type of ocean energy are you referring to?

A. In this particular bid? Is that what your question is?

Q. Yes, yes. Thank you.

A. They are trying no harness the potential of

the Gulf Stream.

Q. And the potential for the Gulf Stream is not available 24/7, 365?

A. It may be.

Q. But it isn't right now?

A. It isn't, because the prototype is not completed.

Q. Thank you. Okay. Now I understand that. I appreciate it.

Okay. Page 10, line 1. Where might there be additional wind opportunities that would add to the renewable portfolio in Florida?

A. If I may refer to the Exhibit HGM-3, the United States wind resource map, you will notice that the resource is available on the coast line, so we're looking at the coast line.

Q. Okay. Thank you. That clarifies that.

Page 10, line 21. Is the Sarasota, Florida, solar plant operational now?

A. Yes.

Q. How long has it been operational?

A. I think I will refer that question -- that question would have been better answered by witness Brandt, Dennis Brandt, the gentleman who was just here.

Q. Okay.

A. I can clarify that I have a general time period if you want that. I don't know the exact date, but it was end of October or early November.

Q. That's fine. That's when they initiated operation?

A. I believe so, but I would prefer that that question be referred to perhaps for follow-up.

Q. Okay. Thank very much.

Page 11, line 3. What is FP&L's relationship to the Florida Solar Energy Center?

A. We've developed alliances with them in the past and worked on special projects. And it's actually mentioned in the Public Service Commission report that I discussed in the oral summary.

Q. Okay. So you've had an extensive relationship with them over the years?

A. Yes, we have. Since the late '70s, we've done special projects with them.

Q. Thank you for clearing that up.

On page 15, line 1 through 13, was solar thermal and steam storage -- let me rephrase this. I want to make it more clear. Was the possibility of solar thermal and steam storage included in the analysis of what was available for base load capacity in the FPSC and FDEP renewables assessment?

A. I don't believe so.

Q. And just to clarify that, if you would, would that mean that the solar thermal and steam storage information wasn't available at the time the assessment was made?

A. I can't speak to that.

Q. Okay. Thank you. Line 10 of page 16. Which renewable technologies have poor emission rates?

A. It depends. Some biomass projects.

Q. And essentially, what are the renewable energy technologies we're considering in your testimony?

A. At this time, Florida Power & Light has made announcements that we are considering wind and solar initiatives.

Q. And you have in your -- am I correct in understanding that biofuel projects are ongoing, which include waste energy plants?

A. As we issue requests for proposals, such as the one I mentioned in my oral summary for 2007, we do get those types of proposals, and they do need to adhere to very strict standards.

Q. Okay. Page 21, line 23. Actually, this refers to page 20, line 23, and then goes over to page 21, lines 1 and 2. You speak of how installed capacity of nuclear base load would produce six times the energy

of wind, as compared to wind technology. What I would like to know is, what is the comparison in waste product between wind and nuclear? How much radioactive waste does wind produce?

MR. ANDERSON: FPL objects, because environmental considerations are beyond the scope of this witness's testimony. Mr. Kosky would be the correct witness for that.

MR. KRASOWSKI: We'll withdraw it. Okay. Our question is not environmental. It is economic, because waste is an economic --

CHAIRMAN CARTER: I think you were right to withdraw it with this witness.

MR. KRASOWSKI: Okay. Thank you.

BY MR. KRASOWSKI:

Q. Are there any waste costs associated with wind energy?

A. No.

Q. Thank you. Page 22, line 10. You say that solar PV and large scale solar thermal energy are comparatively expensive sources of electricity. Does this include concentrated solar?

A. Yes.

Q. Okay. And does it include the full cost of managing waste that's associated with nuclear

facilities?

MR. ANDERSON: Same objection as earlier. It's beyond the scope of the witness's testimony.

CHAIRMAN CARTER: Sustained.

MR. KRASOWSKI: Okay. Pardon me.

BY MR. KRASOWSKI:

Q. Does solar -- let me ask you, to the best of your knowledge, what are the waste byproducts of solar energy?

MR. ANDERSON: Objection. Beyond the scope.

MR. KRASOWSKI: Okay. Thank you.

BY MR. KRASOWSKI:

Q. Page 22, line 14. Can you elaborate or explain -- well, let me start over. Could you comment on the newest solar technology developments?

A. There are many solar technologies. Could you be more specific?

Q. Yes. FPL has a project going on now, ongoing with Ausra. I believe you mentioned them in your testimony, A-u-s-r-a, Ausra.

A. I didn't mention Ausra in my testimony.

Q. You don't? Okay. I'm sorry. I'm confusing you with somebody else. I apologize.

A. Do you have a question about Ausra?

Q. Yes. Are you familiar with --

A. Yes, I am.

Q. Okay. Are there any plans to do more than just the 300 megawatts project that's in the works now into the future?

A. Well, we've had numerous meetings with senior executives and technical experts from Ausra, and we've conducted a technical due diligence analysis, and that has included an engineer visit to Australia. Ausra's project has never produced steam in any meaningful quantity or any electricity. Furthermore, the demonstration project won't meet Florida's building codes. Ausra has not demonstrated the steam storage capability. So we have a lot of discussions we need to follow up with them on.

Q. Thank you for that information. Also, along the same lines, are you familiar with the Israeli company, Solel, that FPL's national parent company has hired to do work on their solar operation out west?

A. Generally speaking.

Q. Okay. So do they -- they have a solar thermal product. Is that -- what stage of development is that in? Do you know?

A. I can't speak for Solel.

Q. You're not working on anything with them at the time?

A. There may be people in my company working with Solel, but I'm not.

Q. Okay. Now, one last question in regards to the ocean technology project that you're involved in. Are there concerns about the impact on manatees?

A. I'm sorry. Can you restate that?

Q. Yes. Have you ever testified in front of -- well, I guess that's outside the realm as well, so we'll just forget that, and we're done. Thank your very much for your cooperative answers.

CHAIRMAN CARTER: Thank you very kindly. Commissioners? Commissioner Argenziano, you're still with us; right?

COMMISSIONER ARGENZIANO: No, Mr. Chair. I was just wondering, with all due respect, since we've had a lot of breaks today and people are from out of town, is there any objection to maybe staying until 6:00, trying move on a little quicker, if there are people from out of town?

CHAIRMAN CARTER: Commissioners? Well, we're fine. Is that all right with the parties? Okay.

MR. ANDERSON: Of course, Your Honor.

CHAIRMAN CARTER: Great suggestion, Commissioner Argenziano.

COMMISSIONER ARGENZIANO: Thank you,

Mr. Chair.

CHAIRMAN CARTER: Staff, any questions for Ms. McBee?

MS. FLEMING: We have no questions.

CHAIRMAN CARTER: Commissioners, any questions for Ms. McBee? Any redirect?

MR. ANDERSON: No, sir.

CHAIRMAN CARTER: Okay, Mr. Anderson. Let's deal with the exhibits.

MR. ANDERSON: FPL would offer Exhibits 54 to 57 into evidence.

CHAIRMAN CARTER: Okay. Any objections? Without objection, show it done.

(Exhibits Number 54 through 57 were admitted into the record.)

CHAIRMAN CARTER: Call your next witness. Thank you, Ms. McBee.

THE WITNESS: Thank you very much.

MR. BUTLER: Would he would call Mr. Yupp. I don't believe Mr. Yupp has been sworn.

CHAIRMAN CARTER: Mr. Yupp, would you please stand and raise your right hand.

(Witness sworn.)

CHAIRMAN CARTER: Please be seated.

Thereupon,

GERARD J. YUPP

was called as a witness and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BUTLER:

Q. Would you please state your name and business address for the record?

A. My name is Gerard Yupp. My business address is 700 Universe Boulevard, Juno Beach, Florida.

Q. By whom are you employed, and in what capacity?

A. I am employed by Florida Power & Light Company as the Director of Wholesale Operations in the Energy Marketing and Trading Division.

Q. Have you prepared and caused to be filed 17 pages of prefiled direct testimony in this proceeding on October 16, 2007?

A. Yes, I have.

Q. Do you have any changes or revisions to your prefiled direct testimony?

A. No, I do not.

Q. If I asked you the questions contained in your prefiled direct testimony, would your answers be the same?

A. Yes, they would.

MR. BUTLER: Chairman Carter, FPL requests that the prefiled direct testimony of Mr. Yupp be inserted into the record as though read.

CHAIRMAN CARTER: The prefiled testimony will be accepted into the record as though read.

MR. BUTLER: Thank you.

BY MR. BUTLER:

Q. Mr. Yupp, are you also sponsoring Exhibits GJY-1 and GJY-2 which are attached to your prefiled testimony?

A. Yes, I am.

MR. BUTLER: Chairman Carter, I would note that those exhibits have been premarked for identification as 58 and 59.

CHAIRMAN CARTER: Okay.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF GERARD J. YUPP

DOCKET NO. 07____ EI

OCTOBER 16, 2007

Q. Please state your name and business address.

A. My name is Gerard J. Yupp. My business address is 700 Universe Boulevard, Juno Beach, Florida 33408.

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

A. I am employed by Florida Power & Light Company (FPL or the Company) as Director of Wholesale Operations in the Energy Marketing and Trading Division.

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

A. I am responsible for managing the daily activities of the Wholesale Operations Group. Daily activities include natural gas and fuel oil procurement and fuel management for FPL's oil and/or natural gas burning plants, coordination of plant outages with wholesale power needs, real-time power trading, short-term power trading, transmission procurement and power scheduling. My longer-term responsibilities include fuel planning and evaluating opportunities within the wholesale power markets based on forward market conditions, FPL's outage schedule, fuel prices and transmission availability.

Q. Please describe your educational background and professional experience.

A. I graduated from Drexel University with a Bachelor of Science Degree in Electrical Engineering in 1989. I joined the Protection and Control Department of FPL in 1989 as a Field Engineer and worked in the area of relay engineering. While employed by FPL, I earned a Master of Business Administration degree from Florida Atlantic University in 1994. In May of 1995, I joined Cytec Industries as a plant electrical engineer where I worked until October of 1996. At that time, I rejoined FPL as a real-time power trader in the Energy Marketing and Trading Division. Since rejoining FPL in 1996, I have moved from real-time trading to short-term power trading, power trading manager and assumed my current position in December, 2004.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits GJY-1 through GJY-2, which are attached to my direct testimony.

Exhibit GJY-1	Historical Fuel Prices
Exhibit GJY-2	Nuclear Fuel Savings

Q. Are you sponsoring any sections of the Need Study document?

A. Yes. I am sponsoring Sections V.A.2.a, V.A.2.b, V.A.2.c (parts i through iii) and V.A.2.c (parts v and vi) and I am co-sponsoring Appendix E of the Need Study document.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present and explain: (1) the benefits of fuel diversity in FPL's system that would result from the addition of up to 3,040 MW

of new nuclear generation; (2) the natural gas pipeline and supply issues that FPL and Florida will face in continuing to rely on increasing amounts of natural gas; (3) the reliability benefits associated with the addition of Turkey Point Nuclear Units 6 & 7 (Turkey Point 6 & 7) as compared to a natural gas-fired plant and the estimated costs of building and operating fuel inventory capability for a natural gas-fired plant that would provide similar reliability benefits offered by Turkey Point 6 & 7; (4) the inherent uncertainty in oil and natural gas price forecasts which necessitates the use of scenario analysis in the long-term economic evaluation of Turkey Point 6 & 7; (5) the methodology used to develop the multiple fuel oil, natural gas and solid fuel price forecasts used by FPL witness Sim in FPL's economic evaluation of its Plan with Nuclear, Plan without Nuclear -- CC that added combined cycle units and Plan without Nuclear -- IGCC that added integrated gasification combined cycle units; (6) the results of those forecasts; and (7) the benefits of reduced reliance on natural gas and fuel oil in FPL's generating fleet.

Q. Please summarize your testimony.

A. Maintaining fuel diversity in FPL's generation portfolio will enhance reliability and reduce fuel price volatility. A fuel-diverse system is more reliable than one that is dependent on only one or two fuel sources. A system that maintains a balanced fuel portfolio is better able to withstand delays or interruptions in the delivery of any one particular fuel, as evidenced by FPL's ability to withstand severe natural gas production curtailments during the 2005 hurricane season. The addition of Turkey Point 6 & 7 will enhance the reliability of the FPL

system compared with a natural gas-fired plant. A fuel-diverse system will help reduce fuel price volatility as the susceptibility to severe price swings in any one fuel type is mitigated in a more balanced fuel portfolio.

FPL developed multiple fuel oil, natural gas and solid fuel price forecasts to address the variability among fuels over time in the economic evaluation of Turkey Point 6 & 7 because projections for future prices of fuel oil, natural gas and solid fuel are inherently uncertain due to a significant number of unpredictable and uncontrollable drivers that influence the short- and long-term price of fuel oil, natural gas and solid fuel. FPL's fuel oil, natural gas and solid fuel price scenarios provide a reasonable set of long-term price outcomes for economic evaluation purposes.

Turkey Point 6 & 7 will reduce FPL's reliance on natural gas and its exposure to fuel cost volatility, as well as facilitating significant fuel cost savings over the years.

BENEFITS OF FUEL DIVERSITY

Q. What are the benefits of maintaining fuel diversity in FPL's system?

A. The primary benefits of maintaining fuel diversity are greater system reliability and reduced fuel price volatility. An electric system that relies on one or two fuels to generate a significant portion of the electricity needed to meet its customers' demand, all else being equal, is less reliable than a system that uses a

more balanced, fuel-diverse generation portfolio. In addition, greater fuel diversity mitigates the impact of sudden swings in the price of any one fuel, a phenomenon that has characterized the fuel oil and natural gas markets over the last several years.

Q. Please explain how fuel diversity enhances system reliability.

A. An electric system that relies to a substantial extent on one fuel is more susceptible to events that cause delays or interruptions in the production and delivery of that fuel. For example, in September 2005 a significant number of natural gas production facilities in the Gulf of Mexico were shut down as a result of Hurricanes Katrina and Rita. FPL was forced to manage its system fuel requirements with much lower than normal natural gas volumes throughout these extreme weather events. Although these supply disruptions presented many challenges to FPL in the area of fuel management, FPL continued to produce sufficient energy to meet its customers' demand for electricity. In part, this was attributable to the diversity of FPL's fuel mix (in 2005: 42% natural gas, 17% fuel oil, 19% nuclear, 18% coal, and 4% from other sources). Because FPL's system offers a significant amount of flexibility through a diverse fuel mix and substantial storage capability, FPL was able to continue to meet its customers' demand for electricity with alternate fuel sources until natural gas production was restored. Had FPL's system relied to a greater extent on natural gas to produce electricity, there would have been a greater risk of failing to meet customers' requirements.

Q. Please explain how fuel diversity helps reduce price volatility.

A. Fuel diversity helps to mitigate the impact of price increases in one or two fuels on the total system cost of fuel. As shown on Exhibit GJY-1, natural gas and fuel oil have experienced extreme price increases over the past several years, while nuclear fuel costs have remained stable. To the extent that multiple fuels are used to produce electricity, the impact of price increases in any one fuel is lessened when that particular fuel does not make up a significant percentage of the total fuel mix. Stated another way, a more balanced fuel portfolio will result in less volatile total fuel costs over time. Additionally, a more balanced fuel portfolio will help mitigate some of the price exposure created by extreme weather events. For example, throughout the duration of each severe weather event in September 2005, natural gas prices rose dramatically and FPL incurred approximately $88 million in incremental cost to replace a portion of the firm natural gas supply that was curtailed as a result of each weather event. Had FPL's reliance on natural gas been greater during that time, its exposure to this extreme price movement throughout each event would have been greater, resulting in even higher replacement fuel costs. Although it is impossible to predict future fuel prices with certainty, based on current fuel price forecasts, the exclusive addition of natural gas-fueled generation in the future would likely result in more volatile and higher fuel costs over time.

NATURAL GAS PIPELINE AND SUPPLY ISSUES

Q. Does FPL believe that future additions of natural gas-fired generation will require changes to the current natural gas infrastructure serving Florida?

A. Yes. Natural gas is currently delivered into Florida from the U.S. Gulf Coast on-shore and off-shore regions via the Florida Gas Transmission (FGT) and Gulfstream Natural Gas System (Gulfstream) pipelines and from the regasification of imported liquefied natural gas (LNG) at the Elba Island, Georgia terminal via the Cypress pipeline. On May 1, 2007, Phase I of the Cypress pipeline was placed into service and began providing an incremental 220,000 MMBTU per day of natural gas into Florida. Phase I of the Cypress pipeline operates near or at capacity today, and future Phase II and Phase III expansions should be available by 2008 and 2010. While the FGT and Gulfstream infrastructure has provided a high level of reliability over the years, the demands on both pipelines have continued to grow. FGT is currently fully subscribed and by mid-2009 Gulfstream will be fully subscribed. Even with the planned Phase II and Phase III expansions of the Cypress pipeline, the addition of incremental natural gas-fired generation will likely require an expansion of the gas transportation infrastructure in the State.

However, as described above, natural gas production curtailments from the 2005 hurricanes limited the amount of natural gas available to Florida from the Gulf of Mexico for a period of time. Simply expanding the existing infrastructure will

not help reduce this vulnerability. Therefore, the need to consider alternatives to promote the diversity of supply will become critical to maintaining system reliability.

Q. What are the alternatives to expanding the existing pipeline system?

A. Alternatives could include the addition of a new interstate pipeline, additional underground natural gas storage, on-site LNG storage facilities, and the development of alternate supply sources, including access to new producing regions as well as the addition of LNG supply. LNG imports are projected to increase to meet U.S. natural gas demand growth from approximately 1.6 billion cubic feet (BCF) per day in 2006 to approximately 14.3 BCF per day by 2020. By 2020, LNG supply is projected to account for approximately 20% of total U.S. natural gas supply. Although LNG supply is projected to play an essential role in helping meet U.S. natural gas demand growth, it is important to note that as LNG's percentage of total U.S. natural gas supply increases, the risks associated with foreign supply fuel sources will become more prevalent in the overall U.S. natural gas picture.

FPL has recognized the need to implement alternative strategies even in today's environment. In an effort to create supply diversity and help strengthen reliability, FPL recently contracted for additional natural gas storage and firm transportation on a new pipeline that will bring on-shore natural gas supply from East Texas into the Mobile Bay area in the Gulf of Mexico. While both of these projects will help strengthen reliability by helping to mitigate FPL's exposure to

supply disruptions, the new pipeline will also provide long-term supply diversity. The cost of implementing mitigating strategies will vary depending on the type of alternative being considered. However, it is important to recognize that this investment in infrastructure and supply alternatives will have to be made in order to maintain today's level of natural gas reliability in the future as demand for natural gas grows. It is reasonable to expect that the gas transportation charges that FPL and other users have to pay will reflect this substantial increase in investment.

BENEFITS OF IN-REACTOR NUCLEAR FUEL INVENTORY

Q. Does the addition of Turkey Point 6 & 7 enhance the reliability of the FPL system from a fuel supply perspective, compared to a natural gas-fired plant?

A. Yes. Nuclear generation offers several fuel supply characteristics that enhance system reliability compared to a natural gas-fired plant. FPL generally maintains three days of on-site back-up fuel oil storage at its natural gas fired plants. Therefore, a natural gas-fired plant is more susceptible to interruptions from fuel supply problems such as supply or pipeline curtailments. In contrast, as Mr. Villard explains, a nuclear unit has the ability to produce power for an 18-month period without the need for additional fuel supply and is not exposed to the risk of fuel supply interruptions within that period. Additionally, Mr. Villard explains that nuclear units can continue power production beyond the scheduled

end of a refueling cycle by slightly reducing power output over time. This flexibility could prove very useful in mitigating the impact of supply disruptions for other fuel types. For example, if natural gas supply were interrupted when a nuclear unit was planning to shut down for refueling, the nuclear unit could stay on-line and continue producing power to help meet customer demand until the natural gas supply was restored. Beyond the system reliability benefits, these operating characteristics of nuclear units also help reduce fuel price volatility. To the extent that a particular fuel type is not exposed to price swings caused by short-term supply disruptions, there will be a reduction in the volatility of total fuel costs throughout each event. Substantial, expensive on-site storage would have to be added at a natural gas-fired plant for it even to approach the system-reliability and price-volatility reduction benefits inherent in a nuclear plant's in-reactor fuel inventory.

UNCERTAINTIES IN FOSSIL-FUEL FORECASTING

Q. Please identify the key factors that contribute to uncertainty in forecasting the future price of fossil fuels.

A. Future fuel oil and natural gas prices, and to a much lesser extent, coal and petroleum coke prices, are inherently uncertain due to a significant number of unpredictable and uncontrollable drivers that influence the short- and long-term price of fuel oil, natural gas, coal, and petroleum coke. These drivers include: (1) current and projected worldwide demand for crude oil and petroleum products; (2) current and projected worldwide refinery capacity/production; (3)

expected worldwide economic growth, in particular in China and the other Pacific Rim countries; (4) Organization of Petroleum Exporting Countries (OPEC) production and the availability of spare OPEC production capacity and the assumed growth in spare OPEC production capacity; (5) non-OPEC production and expected growth in non-OPEC production; (6) the geopolitics of the Middle East, West Africa, the former Soviet Union, Venezuela, etc.; (7) the impact upon worldwide energy consumption of various factors including worldwide environmental legislation and politics; (8) current and projected North American natural gas demand; (9) current and projected U. S., Canadian, and Mexican natural gas production; (10) the worldwide supply and demand of LNG; and (11) the growth in solid fuel generation on a U.S. and worldwide basis.

Q. Why has FPL developed multiple fuel oil, natural gas and solid fuel price forecasts to support the economic evaluation of Turkey Point 6 & 7 and the alternative plans?

A. In the economic evaluation of Turkey Point 6 & 7, the differential between fuel prices is a key driver in the overall economic outcome of each expansion plan. Therefore, variations in fuel price forecasts will impact the potential fuel savings. The volatility of natural gas and fuel oil prices, as compared with solid fuel and nuclear fuel prices, clearly underscored the need to develop a set of plausible fuel oil, natural gas and solid fuel price scenarios that bound the reasonable set of long-term price outcomes for economic evaluation purposes.

Accordingly, to support the economic evaluation of Turkey Point 6 & 7 and the alternative expansion plans, FPL developed several fuel price forecasts. These forecasts are referred to as the Medium Gas Cost, Low Gas Cost and High Gas Cost forecasts, all of which are described in detail below.

FUEL FORECAST METHODOLOGY

Q. What is the methodology for FPL's Medium Gas Cost forecast for fuel oil, natural gas and solid fuel used to support the economic evaluation of Turkey Point 6 & 7 and the alternative plans?

A. FPL's Medium Gas Cost forecast methodology is consistent for fuel oil and natural gas. For fuel oil and natural gas commodity prices, FPL's Medium Gas Cost forecast applies the following methodology: (1) for 2007 through 2009, the methodology used the July 31, 2007 forward curve for New York Harbor 1% sulfur heavy oil, U. S. Gulf Coast 1% sulfur heavy oil and Henry Hub natural gas commodity prices; (2) for the next two years (2010 and 2011), FPL used a 50/50 blend of the July 31, 2007 forward curve and monthly projections from the PIRA Energy Group; (3) for the 2012 through 2020 period, FPL used the annual projections from the PIRA Energy Group; and (4) for the period beyond 2020, FPL used the rate of real (constant dollar) price changes from the Energy Information Administration (EIA). All constant dollar changes were then converted to nominal dollars using a 2.5% annual escalation rate. In addition to the development of commodity prices, price forecasts also were prepared for fuel

oil and natural gas transportation costs. The addition of commodity and transportation projections resulted in delivered price forecasts.

FPL has used a consistent approach in developing the Medium Gas Cost forecast methodology for coal and petroleum coke prices. Coal and petroleum coke prices were based upon the following approach: (1) the price forecasts for Central Appalachian coal, South American coal, and petroleum coke were provided by JD Energy; (2) the marine transportation rates from the loading port for coal and petroleum coke to an import terminal were also provided by JD Energy; (3) the terminal throughput fee was based on a range of offers from comparable facilities throughout the Southeast U.S.; and (4) the rail transportation rates from Central Appalachia and from the import terminal facility were based on the proposed rail transportation rates as of the second quarter of 2007. In order to achieve the maximum fuel supply diversity and delivery flexibility for FPL's customers, FPL assumed that the delivered price of solid fuel for IGCC units in FPL's Plan without Nuclear -- IGCC would be a mix of 25% Central Appalachian coal, 25% South American coal, and 50% petroleum coke.

These delivered price forecasts for fuel oil, natural gas and solid fuel were used in the economic evaluation of Turkey Point 6 & 7 and the alternative expansion plans.

Q. What is the methodology for the development of the alternative fuel oil, natural gas and solid fuel price forecasts used in the economic evaluation of Turkey Point 6 & 7 and the alternative plans?

A. The development of FPL's Low and High Gas Cost forecasts for fuel oil, natural gas, coal, and petroleum coke prices was based upon the historical relationship of the high and low prices realized by FPL's customers for each fuel between January 2000 and April 2007, to the average fuel prices in that same time frame. For example, the January 2000 through April 2007 average natural gas price delivered to FPL's system was $6.65/MMBtu. The high price range was $9.09/MMBtu or 137% of the average and the low price range was $4.57/MMBtu or 69% of the average. These factors were multiplied by the monthly Medium Gas Cost forecast to determine the Low and High price for each commodity for the duration of the forecast period. This same process was applied to fuel oil, coal and petroleum coke consistently. FPL developed these forecasts to account for the uncertainty that exists within each commodity as well as across commodities. These forecasts align with FPL's actual price variability realized during the January 2000 to April 2007 period, thus ensuring that the analyses of the three Resource Plans will reflect a range of reasonable forecast outcomes.

FORECAST RESULTS

Q. Are FPL's Medium, Low, and High Gas Cost forecasts reasonable and appropriate for the economic evaluation of Turkey Point 6 & 7 and the alternative plans?

A. Yes. FPL's long-term oil, natural gas and solid fuel price forecasts are reasonable and appropriate for the economic evaluation of Turkey Point 6 & 7 and the alternative plans. FPL's fuel price forecasts identify a reasonable set of forecast outcomes based on an actual historical range of prices realized by FPL's customers during the January 2000 through April 2007 period, a period of time that experienced high variability among commodity prices, high price volatility on a domestic and worldwide basis, and periods of both low and high price differentials between commodities.

Q. Have you provided FPL's forecasts for the price of fuel oil, natural gas and solid fuel?

A. Yes. FPL's forecasts for the price of fuel oil, natural gas and solid fuel are provided in Appendix E of the Need Study document.

Q. Will future environmental regulations impact the price differential between natural gas and other fuel types?

A. It is difficult to quantify how future environmental regulations will impact the price differential between natural gas and other fuel types, as there are many variables to consider. Nonetheless, it is reasonable and intuitive to expect that, if future environmental regulations were to impose high compliance costs on

carbon emissions, the demand for natural gas would most likely increase as natural gas-fueled generation became preferable from an economic standpoint. In theory, that increase in demand would widen the price differential between natural gas and other fuel types. Although there may be other, countervailing factors, we would not expect those factors to fully offset this widening of the price differential as environmental compliance costs increase.

REDUCED RELIANCE ON NATURAL GAS AND FUEL OIL

Q. Will Turkey Point 6 & 7 reduce FPL's reliance on natural gas for electric generation?

A. Yes. Turkey Point 6 & 7 will greatly reduce FPL's reliance on natural gas. The operation of Turkey Point 6 & 7 will displace approximately 114 BCF of natural gas consumption per year. Stated another way, during its first 19 years of operation, Turkey Point 6 & 7 will displace and prevent the need for the consumption of as much natural gas as FPL's system consumed in the 7-year period from 2000 through 2006

Q. Has the operation of FPL's existing nuclear fleet helped mitigate some of the impact of extremely volatile natural gas and fuel oil prices over the last several years?

A. Yes. As shown in Exhibit GJY-1, beginning in 2000, natural gas and heavy oil prices began an overall upward trend with extreme price fluctuations at particular points in time. Conversely, FPL's nuclear fuel prices remained stable

and low throughout the same period. Exhibit GJY-2 quantifies the economic benefit that FPL's existing nuclear generation fleet has had on FPL's total fuel costs during this period and demonstrates the benefits of fuel diversity from a reduction in the volatility of overall fuel costs. Exhibit GJY-2 is comprised of three components: FPL's actual nuclear fuel costs (by year), equivalent natural gas/heavy oil fuel costs (by year) and cumulative net fuel savings due to FPL's nuclear generation over the period January 2000 through July 2007. The equivalent natural gas/heavy oil fuel costs represents additional fuel costs FPL would have incurred to produce the same net MWh that FPL's nuclear generation fleet produced over this period of time with natural gas and heavy oil. These equivalent fuel costs were calculated using actual system average heat rates for natural gas and heavy fuel oil, actual delivered natural gas and heavy oil prices, and the actual fuel mix of natural gas and heavy oil. As shown on Exhibit GJY-2, FPL's total fuel costs would have been approximately $8.7 billion higher during this period if nuclear generation was not part of FPL's generation portfolio. Additionally, FPL's total system fuel costs experienced less volatility as a result of a portion of these total system fuel costs coming from stable, low-cost nuclear generation.

Q. Does this conclude your direct testimony?

A. Yes.

BY MR. BUTLER:

Q. Mr. Yupp, would you please summarize your direct testimony for the Commission?

A. Yes, I will. Thank you.

Good afternoon, Chairman Carter and Commissioners. Turkey Point 6 and 7 will enhance FPL's system reliability and help reduce price volatility, as an electric system that maintains a balanced, fuel-diverse generation portfolio is less susceptible to fuel supply disruptions and better protected from the impact of sudden swings in the price of one fuel on total system fuel costs. As shown on my Exhibit GJY-2, FPL's existing nuclear fleet has saved FPL's customers approximately $9 billion in fuel costs since the year 2002. Additionally, Turkey Point 6 and 7 will help reduce FPL's reliance on natural gas.

Now, it's important to understand that in the past, or the current natural gas supply and delivery infrastructure into Florida, it has provided a high level of reliability over the years. But it's important to recognize that as we look at future additions of natural gas-fired generation that that is going to require an investment in both infrastructure expansion and supply diversity alternatives in order to maintain the level of reliability that we have today. And that

investment will likely increase the gas transportation charges that FPL and other gas users in Florida will have to pay.

Now, finally, Turkey Point 6 and 7 do provide several favorable fuel supply characteristics as compared to a natural gas-fired plant. Currently, our natural gas-fired facilities carry approximately three days of light oil storage or backup fuel on-site. In contrast to that, a nuclear unit can produce power for 18 months before it needs additional fuel. And nuclear units can also continue power production beyond the scheduled end of their fuel cycle by slightly reducing power output over time. And that's important. That flexibility could prove to be very useful in mitigating the impact of supply disruptions for other fuels, as well as helping to reduce fuel price volatility during certain times.

Finally, my testimony does cover FPL's fuel price projections that were used in the economic evaluation of Turkey Point 6 and 7. Fuel price projections are inherently uncertain, unpredictable and uncertain due to a number of unpredictable, again, and uncontrollable factors that influence short- and long-term prices. And so with that in mind, FPL developed multiple fuel price forecasts for the economic

evaluation of Turkey Point 6 and 7 to cover a wide range of projected outcomes, and we believe that our multiple fuel price forecasts do provide a reasonable set of long-term price outcomes for economic evaluation purposes for Turkey Point 6 and 7.

That concludes my summary. Thank you.

MR. BUTLER: Thank you, Mr. Yupp. I tender the witness for cross-examination.

CHAIRMAN CARTER: Thank you. Mr. Beck.

MR. BECK: I have no questions. Thank you.

CHAIRMAN CARTER: Ms. Krasowski.

CROSS-EXAMINATION

BY MR. KRASOWSKI:

Q. Hello, Mr. Yupp.

A. Hello.

Q. I just have a few questions about the uranium fuel.

A. I'm covering fossil fuel in my -- my testimony covers fossil fuel. If there are questions regarding uranium fuel, that would be directed to witness Villard.

MS. KRASOWSKI: Well, thank you.

CHAIRMAN CARTER: Commissioners? Staff.

MS. FLEMING: Just a few questions, please.

CHAIRMAN CARTER: You're recognized.

CROSS-EXAMINATION

BY MS. FLEMING:

Q. Hello, Mr. Yupp. I'm Katherine Fleming.

A. Hello.

Q. At your deposition, we discussed the alternatives that FPL looked at when deciding on the Turkey Point 6 and 7. Do you recall that conversation?

A. Alternatives from a generation standpoint?

Q. That's correct.

A. Yes, I do.

Q. And at your deposition, you stated that all alternatives were evaluated, but the most likely candidates were natural gas and nuclear. Do you recall that?

A. I do recall that.

Q. Thank you. So for purposes of this, your testimony is that the two viable alternatives at this stage are the Turkey Point nuclear plants or a combined cycle gas plant; is that correct?

A. I'm not sure that's my testimony. My testimony does cover the benefits of fuel diversity in regard to the Turkey Point 6 and 7 units, and also supports the fuel price forecast. But I think overall, it's safe to say that the best alternatives through the evaluation process turned out to be Turkey Point 6 and 7

or a combined cycle unit.

Q. If Turkey Point 6 and 7 are not built, will there be a need for more investment as far as gas pipelines to meet demand?

A. Yes, there will be. As my testimony describes and as I described in my oral summary, to the extent that we do add natural gas-fired generation, incremental natural gas-fired generation to what we have now, there will be the requirement for investing in not only an expansion of the supply infrastructure into the state, because currently the two major pipelines that do supply gas into Florida are fully subscribed, or FGT is fully subscribed, and Gulfstream will be by mid-2009. So we'll be looking at not only an infrastructure expansion, but as we add more natural gas-fired generation, it will really become imperative that we look at supply alternatives. So we divest, so to speak, away from the Gulf of Mexico and look at other alternatives that can help supply reliability on the supply side.

Q. And in your summary, you stated that FPL created three forecasted gas price scenarios; is that correct?

A. That is correct.

Q. And were those three forecasts based on --

your high and low forecasts were based on the medium forecast; is that correct?

A. Partly. We created or we developed a medium price forecast based on the methodology that is described in my testimony. And to create the high and the low band forecast, what we did is, we went back to January 2000, and we looked at actual fuel prices, and in this case, natural gas that was delivered to FPL, so actual natural gas prices that we paid as a company in the period January 2000 through April 2007. And we looked at the high and low ranges of what we paid during that period of time, and then we applied those high percentages and low percentages to our medium price forecast in order to create the high and low band.

Q. And is it my understanding that no probabilities were assigned to these three scenarios?

A. I don't recall any. There's no probabilities, no. It was simply looking at the high and low range, so to speak, and applying that to the medium price forecast. I don't recall probabilities, so to speak, in that sense being applied.

Q. Of the three forecast scenarios that FPL has looked at, is there one scenario that is more probable than the others?

A. I think it's safe to assume -- without saying

that anything is more likely than the other, I think the safe assumption that can be made is that the medium price forecast is something that takes into account all of the currently available information that is out in the marketplace that is used to develop fuel price forecasts. And so to that extent, that is what we would believe to be at this point in time, given the information we have, a reasonable forecast. The others, the high and low, put bands around that. But that is the forecast that was developed with the latest information.

MS. FLEMING: Okay. Thank you. We have no further questions.

MR. ANDERSON: Commissioners, do you have any questions?

Okay. Mr. Butler, let's deal with the exhibits.

MR. BUTLER: No redirect, and I move the exhibits.

CHAIRMAN CARTER: Oh, I'm sorry.

MR. BUTLER: It was good intuition. No redirect, and I move Exhibits 58 and 59 into the record.

CHAIRMAN CARTER: Any objections? Without objection, show it done.

(Exhibits Number 58 and 59 were admitted into

the record.)

CHAIRMAN CARTER: Call your next witness.

MR. BUTLER: Thank you. I call Mr. Yupp -- I'm sorry, Mr. Villard to the stand. And I -- Mr. Villard, have you been sworn?

THE WITNESS: No, not yet.

MR. BUTLER: Okay.

CHAIRMAN CARTER: Would you please stand and raise your right hand.

(Witness sworn.)

CHAIRMAN CARTER: Thank you. You may be seated.

Thereupon,

CLAUDE A. VILLARD

was called as a witness on behalf of Florida Power & Light Company and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BUTLER:

Q. Mr. Villard, would you please state your name and business address for the record?

A. Yes. My name is Claude A. Villard. And I -- my business address is 700 Universe Boulevard, Juno Beach, Florida.

Q. Thank you. By whom are you employed, and in

what capacity?

A. I'm employed by FP&L. I'm Director of Nuclear Fuels.

Q. Have you prepared and caused to be filed 11 pages of prefiled direct testimony in this proceeding on October 16, 2007?

A. Yes, I have.

Q. Do you have any changes or revisions to make to your prefiled direct testimony at this time?

A. No, no changes.

Q. If I asked you the questions contained in your prefiled direct testimony, would your answers be the same?

A. They would be the same, correct.

MR. BUTLER: Chairman Carter, I would ask that the prefiled direct testimony of Mr. Villard be inserted into the record as though read.

CHAIRMAN CARTER: The prefiled testimony will be inserted into the record as though read.

MR. BUTLER: Thank you.

BY MR. BUTLER:

Q. Mr. Villard, are you also sponsoring exhibits CAV-1 through CAV-6 which are attached to your prefiled testimony?

A. Yes, that is correct.

MR. BUTLER: Chairman Carter, I would note that these exhibits have been premarked for identification as 60 through 65.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF CLAUDE A. VILLARD

DOCKET NO. 07 _____ - EI

OCTOBER 16, 2007

Q. Please state your name and business address.

A. My name is Claude A. Villard. My business address is 700 Universe Boulevard, Juno Beach, Florida, 33408.

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

A. I am employed by Florida Power & Light (FPL or the Company) as Director, Nuclear Fuels.

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

A. I am responsible for procurement, contract administration, reactor core design, fuel performance, accident analysis, and certain spent fuel storage matters for FPL's nuclear power plants.

Q. Please describe your educational background and professional experience.

A. I received a Bachelor of Science Degree in Nuclear Engineering from Lowell Technological Institute in 1974, and a Master Degree in Nuclear Engineering from the University of Lowell in 1976. I have more than 30 years experience in various technical and commercial aspects of the nuclear fuel cycle. I have also previously worked for a nuclear steam supply system vendor and two

electric utilities that owned and operated nuclear power plants with varying levels of responsibility. In my career, I have performed and managed a variety of fuel-related activities, including fuel supply strategy studies, market analyses, and price forecasts.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits CAV-1 through CAV-6, which are attached to my direct testimony.

Exhibit CAV-1	Description of Nuclear Fuel Cycle
Exhibit CAV-2	Uranium Past and Projected Prices
Exhibit CAV-3	Conversion Services Projected Prices
Exhibit CAV-4	Enrichment Services Projected Prices
Exhibit CAV-5	Fabrication Services Projected Prices
Exhibit CAV-6	Annual Nuclear Fuel Expense Projection

Q. Are you sponsoring any sections of the Need Study in this proceeding?

A. Yes. I am sponsoring sections V.A.2.a, V.A.2.b and V.A.2.c (parts iv and vi) and I am co-sponsoring Appendix E of the Need Study.

PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the steps required to build nuclear fuel for delivery to a reactor, provide background information on the nuclear fuel industry, assess the availability of future supplies for each of these steps,

and provide fuel price projections relating to the proposed new nuclear project. I will provide the reference nuclear fuel costs used in FPL's analysis, discuss how nuclear fuel supply interruption would have a minimal impact on nuclear generation and how nuclear operation may help to support the electrical grid, in case of supply interruption for other fuels. Finally, I will discuss how FPL would address spent fuel storage and alternatives in view of the delays in the U.S. Department of Energy's (DOE) spent fuel disposal performance.

Q. Please summarize your testimony.

A. Nuclear fuel costs have historically been stable and significantly lower than fossil fuels. Although the nuclear fuel markets are currently in transition and prices are currently relatively high, I expect the markets to return to fundamentals with sufficient supplies to address the nuclear fuel needs for Turkey Points 6 & 7 at reasonable and stable prices. In addition, because the cost per MWh for nuclear fuel is much lower than for fossil fuels, the impact on customers' bills if nuclear fuel prices change by a certain percentage is much smaller than if fossil fuel prices change by that same percentage.

Nuclear plants are also less vulnerable to supply disruption than fossil plants, especially those that are gas-fired. Because nuclear plants are refueled at lengthy intervals (typically 18 months or more) rather than continuously as is the case for fossil plants, nuclear plants have long periods of operation where the immediate availability of additional fuel supply is not an issue. Moreover,

nuclear plants are capable of continuing operation beyond the planned refueling date, in case of disruption from nuclear or fossil fuels supply chains.

Finally, FPL is confident that there will be viable, economic alternatives available for the storage of spent nuclear fuel at Turkey Point 6 & 7 regardless of when the DOE fulfills its statutory and contractual obligations to take delivery of spent nuclear fuel for disposal.

PROCUREMENT OF NUCLEAR FUEL

Q. Please provide an overview of the fabrication process for nuclear fuel.

A. As shown on Exhibit CAV-1, four separate steps are required before nuclear fuel can be used in a commercial nuclear power reactor.

Uranium is produced in many countries such as Canada, Australia, Khazakhstan, and the United States. During the first step, uranium is mined from the ground using techniques such as open pit mine, underground mining, in-situ leaching operations, or production as a by-product from other mining operations, such as gold, copper or phosphate rocks. The product from this first step is the raw uranium delivered as an oxide, U3O8 (sometimes referred to as yellowcake).

During the second step, the U3O8 is chemically converted into UF6 which, when heated, changes into a gaseous state. This second step further removes any chemical impurities and serves as preparation for the third step, which requires uranium to be in a gaseous state.

The third step is called enrichment. Natural uranium contains 0.711% of uranium at an atomic mass of 235 (U-235) and 99.289% of uranium at an atomic mass of 238 (U-238). Similar to current reactors, the next generation of nuclear power reactors will use uranium with a higher percentage of up to five percent (5%) of U-235 atoms. Because natural uranium does not contain a sufficient amount of U-235, the third step increases the percentage amount of U-235 from 0.711% to a level specified when designing the reactor core (typically in a range from approximately 3% to as high as 5%). The output of this enrichment process is enriched uranium in the form of UF6.

During the last step, fuel fabrication, the enriched UF6 is changed to a UO2 powder, pressed into pellets, and fed into tubes, which are sealed and bundled together into fuel assemblies. These fuel assemblies are then delivered to the plant site for insertion in a reactor.

Like other utilities, FPL has purchased raw uranium and the other components of the nuclear fuel cycle separately from numerous suppliers from different countries.

Q. What do you expect the availability and price for raw uranium to be in the future?

A. Exhibit CAV-2 provides the most recent price projections for raw uranium. These projections are the result of FPL's analysis based on inputs from nuclear fuel market expert firms. The current supply of natural uranium in the market is tight, which has caused a short-term increase in the current spot market. These higher market prices have motivated additional production expected to come on line over the next few years, which should bring uranium prices back to a level consistent with market fundamentals. The higher demand scenario is due to an optimistic projection of construction of new nuclear units. Although uranium is available, uranium suppliers have not yet committed to support this higher demand, because there are no firm orders for new units. However, because the lead time to bring on line new mining production is similar to or shorter than the lead time for new nuclear units, I expect the higher demand to be met with higher uranium production in the future.

Q. What do you expect the availability and price for conversion services to be in the future?

A. Exhibit CAV-3 shows the current price projections for conversion services. Just like raw uranium, an increase in demand for conversion would result from the need to supply new nuclear units. As with additional raw uranium production, FPL expects expansion beyond current supply to track firm commitments to building new nuclear units. Capacity expansion of

conversion services can be handled within the lead time for constructing a new nuclear unit. Therefore, FPL also expects sufficient supply with long term prices following cost fundamentals.

Q. What do you expect the availability and price for enrichment services to be in the future?

A. With no new production capacity, and if the current restrictions on imports of enrichment services from Russia and France continue, the current tight market supply for economically produced enrichment services will continue. A high projection of new nuclear unit construction shows a shortage of enrichment services, starting in 2010. However, there are a number of new facilities coming on-line in that time frame and FPL expects the current restrictions to be lifted, at least partially if not totally. In addition, as with supply for the other steps of the nuclear fuel cycle, expansion of future capacity is feasible within the lead time for constructing new nuclear units. Exhibit CAV-4 shows the price projections for enrichment services. As discussed before, the shortfall in supply is more a reflection of the reluctance to add capacity until receipt of firm commitments to build nuclear units. The current price in the reference case (i.e., $140 per Separative Work Unit (SWU) which is the unit used to measure work done to increase (enrich) the amount of U-235 in natural uranium from 0.711 percent by weight (w/o) to as high as 5.0 w/o) is expected to continue with only normal escalation throughout the period of analysis, as shown on Exhibit CAV-4.

Q. What do you expect the availability and price for nuclear fuel fabrication services to be in the future?

A. Because the nuclear fuel fabrication process is highly regulated by the Nuclear Regulatory Commission (NRC), not all production facilities can qualify as fuel suppliers to nuclear reactors in the U.S. Nonetheless, the supply for the U.S. market is expected to be sufficient to meet U.S. demand for the foreseeable future. Exhibit CAV-5 shows relatively stable fuel fabrication prices for the foreseeable future and supply can also be expanded to meet higher demand.

Q. Can you summarize your expectations for future nuclear fuel supply and stability for future nuclear fuel costs?

A. In summary, I expect the market to return to fundamentals and to be sufficiently supplied to address the needs for new nuclear units. Nuclear fuels costs have historically been stable, and we expect that stability to be preserved in the future. In addition, because the cost per MWh for nuclear fuel is much lower than for fossil fuels, the impact on customers' bills if nuclear fuel prices change by a certain percentage is much smaller than if fossil fuel prices change by that same percentage. Therefore, increasing the nuclear component of FPL's generation mix should help to reduce the exposure of FPL and its customers to cost impacts from fluctuations in the fuel markets.

Q. Please describe how you calculated the nuclear fuel costs that are used for FPL's economic analysis of the proposed new nuclear generating units, Turkey Point 6 & 7.

A. The reference nuclear fuel cost projections utilized in the analyses accompanying this need petition are provided in Exhibit CAV-6. The reference case was calculated using the "reference price" scenarios for each of the steps used to fabricate nuclear fuels. The calculation for this fuel cost projection was performed consistent with the method currently used for FPL's Fuel Clause filings, including the assumption of a fuel lease and the assumption of refueling outages every 18 months. The costs for each step to fabricate the nuclear fuels are added and capitalized to come up with the total costs of the fresh fuel to be loaded at each refueling (capitalized acquisition costs). The capitalized acquisition cost for each group of fresh fuel assemblies are then amortized over the energy produced by each group of fuel assemblies, and carrying costs are also added on the total unrecovered costs to come up with the total fuel costs to be charged to customers. FPL also adds 1 mill per kilowatt hour net to reflect payment to DOE for spent fuel disposal. Because price forecasts did not extend to 2060, FPL continued to escalate these price projections at 2.5% per annum through that year from 2020, the last year from which price forecast was available.

Q Are there special cost considerations that will apply to the first fuel core for Turkey Point 6 & 7?

A. Yes. It takes longer to manufacture and deliver a complete first core when compared to the typical one-third of the core loaded at the end of each 18 month cycle. Therefore, FPL has assumed about two years to build the first cores for each unit, compared to the typical one year for the processing of

one-third of a reactor core. In addition, some of the fuel loaded in the first core would not be efficiently utilized. Compared to the typical three cycles (18 to 24 months each) of residence in a reactor core, some of the first core fuel will be discharged at the end of the first cycle and others at the end of the second cycle. This added cost for the first core is reflected in Exhibit CAV-10, which shows a higher cost in the first years of operation.

Q. Would these units help mitigate the impact of a supply interruption either in nuclear fuels or other fuels?

A. Nuclear units do not require continuous refueling but rather operate without any need to refuel for intervals of 18 months or longer between their refueling outages. Therefore, fuel-supply disruptions would have a different impact on nuclear units' operation than they would on fossil units. In addition, the practice in the nuclear industry has been and continues to be, to schedule deliveries of fuel assemblies no later than two months prior to a refueling outage. This allows plant personnel sufficient time to stage the fuel ahead of the outage and provides sufficient contingency in case of supply disruption during the fabrication process.

Furthermore, nuclear units have the capability to continue power production beyond the scheduled end of fuel life. This is done by slightly reducing core temperature either by changing the inlet temperature of the coolant returning to the reactor core or reducing power level over time. Although power production is reduced during that period, the rate of power reduction is

typically between 0.3% to 1.2% on the average per day, depending on the specific nuclear units. In case of supply disruption, either in nuclear fuel or other fuels, a nuclear unit can continue to provide power for an extended time beyond its initially scheduled outage.

Q. How does FPL intend to address storage of spent nuclear fuel, in view of the delays in DOE's performance in the disposal of spent nuclear fuel?

A. The spent fuel pool capacity in new nuclear plant designs is for over 10 years of storage. This meets the needs for initial cool-down of the spent fuel after it has been removed from the reactor. Thereafter, the fuel will either be disposed of by the DOE, as it is statutorily and contractually obligated to do, or stored on-site in one of the proven safe and environmentally sound on-site storage options, such as dry cask storage.

Q. Does this conclude your testimony?

A. Yes.

BY MR. BUTLER:

Q. With that, Mr. Villard, would you please summarize your direct testimony for the Commission?

A. Yes, gladly so. Mr. Chairman, Commissioners, I'm responsible for nuclear fuel procurement, contract administration, reactor core design, nuclear fuel performance, and certain spent fuel storage matters for FPL's nuclear power plants. I have more than 30 years of experience in various technical and commercial aspects of the nuclear fuel cycle.

My testimony provides the nuclear fuel cycle price projections that were used for FPL's economic evaluation of Turkey Point 6 and 7 in this need determination proceeding. The calculation for this fuel cost projection was performed consistent with the method currently used for FP&L's fuel clause filing.

The cost of nuclear fuel reflects costs for several steps of the fabrication of fuel before delivery to a nuclear power plant. These steps are mining of uranium ore, converting the solid uranium ore to a gas that is better suited for isotopic separation or enrichment, enriching the uranium so that it has a higher concentration of the isotopes needed to support nuclear power reaction, fabricating the nuclear fuel assembly itself, and related engineering services. In

addition, the nuclear fuel cost projections that I have prepared include the standard payment made to the U.S. Department of Energy as compensation for disposing of spent fuel.

Nuclear fuel costs have historically been significantly more stable and significantly lower than the cost of fossil fuels. Prices for all the components of the nuclear fuel cycle, except for the recent uranium ore prices, have not changed much in nominal dollars during the last 25 years. Although the uranium ore market is currently in transition, I expect the market to follow the fundamentals on a long-term basis, with sufficient supply to address the nuclear fuel needs for Turkey Point 6 and 7 at reasonable and stable prices.

The current price increases have led to significant investment, new production investment, which should create additional supply that will moderate future prices. Because the lead time to build a nuclear plant is longer than what is needed to expand production at existing uranium production facilities or to actually put additional mining operations in service, I expect the market will have adequate supply to meet demand.

To add additional uranium supply security, the nuclear industry is working with the Department of Energy, who has a significant amount of inventory of

uranium, to make available -- if requested by a utility, to make available the amount of uranium needed for first core. As you may realize, the first core of a reactor takes a significant amount of fuel, and therefore, the U.S. Department or Energy is willing to supply it, of course, at the market price, no subsidy there.

A. Even if periodic price fluctuations occur, uranium prices do not have the same impact on the FPL's customers as more volatile fossil fuel supply, fossil fuel prices. First, uranium is only one of about five components of the fuel costs, and there has been almost no volatility in the other cost components. For example, I was thinking about -- I was reflecting on the fact that in 1985, enrichment services, which is a very important -- (pause).

Q. Mr. Villard, you may continue.

A. Thank you. Enrichment services, which is a very major component of the nuclear fuel cost, was at about $140 per SWU, which is a unit of services, in 1985, and today's market price is about $143 per SWU, unit of services. So there has been almost no changes. There's been some up and down, but almost no changes.

Second, about a third of the reactor is replaced every 18 months, so the impact of any given increase is amortized over four or five years, because

every reload is left in the reactor for about three cycles, which lasts every 18 months, and therefore 4.5 to five years.

Third, nuclear fuel costs are a much smaller portion of total generation costs for nuclear.

Fourth, the cost of nuclear is substantially lower than the cost of fossil fuel. For this reason, it is appropriate to use long-term prices more reflective of market fundamentals for a price projection for this case.

Nuclear plants also are much less vulnerable to supply disruption than fossil plants, especially those that are gas-fired. Because nuclear plants are refueled at very lengthy intervals, every 18 months rather than continuously as the case in fossil fuel, nuclear plants have long periods of operation where the immediate availability of additional fuel supply is not an issue, and this long lead time allows supply to adjust in case there was any supply disruption.

In addition, the delivery of nuclear fuel is scheduled typically two months before it's actually loaded in the reactor core during the refueling outage, and this time will provide additional sufficient cushion in case a supply disruption occurs for supplying nuclear fuel itself. Moreover, in the event of fossil fuel

supply disruption, nuclear plants are capable of operating beyond the planned refueling dates.

Finally, FPL is confident that there are viable economic alternatives available for the storage of spent nuclear fuel at Turkey Point 6 and 7 regardless of when the Department of Energy fulfills its statutory and contractual obligation to take delivery of spent nuclear fuel for disposal.

That concludes my summary.

MR. BUTLER: Thank you, Mr. Villard. I tender the witness for cross-examination.

COMMISSIONER EDGAR: Thank you. Mr. Beck.

MR. BECK: Thank you. I have no questions.

COMMISSIONER EDGAR: Ms. Krasowski.

CROSS-EXAMINATION

BY MS. KRASOWSKI:

Q. Good afternoon, Mr. Villard. It's almost good evening.

A. Good evening.

Q. On page 4 of your testimony, you speak of the uranium mining. Can you tell me how the radioactive tailings from uranium mining are dealt with?

A. There are specific regulatory requirements which apply to uranium mining which we abide by, all the miners that we buy fuel from.

Q. Do you foresee the Federal Government requiring the mining companies that have not been dealing with the tailings the way that they're supposed to do by law, forcing them into cleaning up their areas?

MR. BUTLER: Objection to that for lack of foundation.

MS. KRASOWSKI: All right.

BY MS. KRASOWSKI:

Q. How long do you think that the quality of uranium in the United States is going to be of the quality that requires less -- that requires the amount of milling that is required right now for uranium fuel?

A. Can you clarify your question, because I'm not sure I understand what --

Q. Yes. Is there a large quantity of high quality uranium fuel -- of uranium available in the United States?

A. Well, maybe I can help you a little bit. There are different grades of ore. That's what you are referring to. And it's just a question of the cost of production. When the market price went down to $10 per pound, you had significant shutdown of uranium facilities in the U.S. But the market has recovered quite a bit now, and we expect it on a long-term basis in 2007 now to be what we're assuming is between 50 and

$60 per pound. With that type of dollar amount, there is plenty, there's plenty of incentive, financial incentive to allow significant expansion of uranium mining in the U.S., even at lower grades.

Q. Is it true that if the ore quality is lesser that it requires more milling and things to get the amount of uranium that you need?

A. That is true. That is correct.

Q. And does that add to the carbon dioxide and other greenhouse gases that are associated with the nuclear fuel cycle?

A. You're talking about a very, very small amount. You're adding a very small amount, I would say. If you have to do more processing, you're going to need more power and you've going to need more energy. And there is, yes, some very infinitesimal addition to the carbon dioxide, yes.

Q. Are there -- this is still on page 4. Are there radioactive or greenhouse gas releases when the in-situ leaching operations burp or bulge gases into the atmosphere?

A. Could you repeat it? When what operation?

Q. When the in-situ leaching --

A. Oh, in-situ leaching operation. Any operation does use machinery, so, yes, to the extent you're

talking about a very, very small amount, yes. Yes, it will.

Q. And what about radioactive emissions?

A. I'm not --

MR. BUTLER: I'm going to object to this line of questioning. It's pretty clear now that it's really about the environment consequences of uranium mining, which is beyond the scope of his testimony and also beyond the scope of this proceeding.

CHAIRMAN CARTER: Okay. I'll sustain.

BY MS. KRASOWSKI:

Q. Mr. Villard, can you tell me how many CFCs, which are the carbofluoro -- CFCs are released during the enrichment process?

MR. BUTLER: I'm going to object again. I fail to see how that relates to issues in his testimony or the proceeding.

MS. KRASOWSKI: Well, CFCs are a greenhouse gas, carbofluoro --

CHAIRMAN CARTER: The objection, though -- did you hear his objection? Mr. Butler, would you state your objection again?

MR. BUTLER: My objection is that it is a subject not covered in Mr. Villard's testimony and not relevant to this proceeding.

MS. KRASOWSKI: Sorry. It's getting late in the day.

BY MS. KRASOWSKI:

Q. How does -- well, does FP&L refine and enrich its raw uranium, or do you buy uranium already enriched?

A. Well, we buy the raw uranium, and we also buy the services to do the enrichment of uranium.

Q. Okay. If the proposed nuclear power plants that are being proposed for the United States, which there are many right at the moment, if there are a lot of them trying to have their fuel enriched, how many fuel enrichment facilities are there currently in the United States?

A. There's only one facility currently operating in the United States.

Q. And can that meet the need for all of the proposed nuclear power plants?

A. No, of course not.

Q. How many will it take?

A. Well, if you look at worldwide, this is an international market, and we buy services from France, from England, from the U.S. So it's an international market. The current capacity is really 50 million units of services, and there is a significant plan -- many companies are in fact planning on introducing that

technology in the U.S., which is a centrifuge technology for the enrichment of uranium, and there's significant investment being made to increase the capacity, the current capacity for producing -- for the enrichment services in the U.S.

Q. How long will it take to build one of the centrifuge enrichment plants?

A. Well, how long will it take to actually build or to have a license and build?

Q. Well, to have the license and be built and have enough --

A. It's about five years, about five years.

Q. Okay. What kind of facility does FP&L use now for enrichment?

A. We mostly buy from the USEC, which used to be a part of the U.S. Government, and the U.S. Government created that separate corporation and then sold it to the public, and we mostly buy from that facility.

Q. And is that facility in Paducah, Kentucky?

A. It is. Yes, it is.

Q. All right. I just have just a follow-up question. On your Exhibit CAV-1, which is now Exhibit Number 60, I believe --

A. CAV-1.

Q. On this exhibit, you have like -- you have the

nuclear fuel cycle here. When you get to number 7, you have reprocessing of -- reprocessing of spent fuel to separate wastes, and then you have some going back up to fuel fabrication.

A. That is what the exhibit shows, yes.

Q. Is this done at any of the nuclear power plants currently?

A. Well, reprocessing is not done at a nuclear power plant, but it's being done in France.

Q. Why do they reprocess the fuel? Is there a benefit to reprocessing the fuel?

A. Well, different countries made a decision-- it's broader than just the economics, and the French have knowledged that it is not purely based on the economics. As a state, the French have decided a long, long time ago that reprocessing was the right thing to do for nuclear fuel, whereby in the U.S., the policy came out that final disposal of the fuel rods in a repository was and still is the final solution.

Q. Was that done because of -- was that done because of plutonium concerns?

A. There was some -- that was the initial reason back in the 1970s. There was some proliferation concern. But subsequently, the train had left the station, and we were pretty much embarking to final

disposal in the repository of the spent rods, if you will.

Q. Does reprocessing add a lot to the cost of the nuclear fuel cycle in you add reprocessing to it?

A. If you were to add reprocessing, with the current volume and the current facilities, I would say yes, it is correct. However, as we're all aware, should there be significantly more volume and significantly more interest in reprocessing, as with any technology, as with any endeavor, human beings tend to improve it, and the efficiency will increase. However, currently, the answer is yes.

MS. KRASOWSKI: Well, thank you, Mr. Villard.

THE WITNESS: You're welcome.

CHAIRMAN CARTER: Thank you. Commissioners, any questions? Staff.

MS. FLEMING: Just a couple of questions.

CHAIRMAN CARTER: You're recognized.

CROSS-EXAMINATION

BY MS. FLEMING:

Q. Good evening, Mr. Villard.

A. Good evening.

Q. I believe in your testimony you stated that the current supply of natural uranium and enrichment services is currently tight; is that correct?

A. That is correct.

Q. But then because of the expected construction of new nuclear units, you would agree that the demand for nuclear fuel will increase; is that correct?

A. That is correct.

Q. So how will this demand be met if the supply is short or is tight right now?

A. Oh, as I indicated in my testimony, what we have is, we are in a transition period where for a long time, we've been using mostly -- almost 40 percent of the supply for uranium came from inventories, partly from the Russian downblending inventories and other utilities' and producers' inventories. In fact, what's making supply tight is the anticipation, and therefore, a lot of people are buying material for inventory, and that in fact is increasing the demand for uranium, which makes the current situation tight.

As you have a very tight supply, what has happened over the past year was, for example, in December 2006, the price of uranium was about $40 per pound, and the price jumped up to $137 per pound in June, July of 2007. Now, today, it's back down to $78 per pound, so it has been dropping significantly as we speak. But what that has done is that that high price at 40 to $50 per pound is actually encouraging

significantly more production. So there's a lot of things being done. There was a very large Namibian mine that was shut down, that was about to shut down, and because of the high price, realizing that we went from $10 per pound to 40 or 50 on a long-term basis, because of the expected high prices, those facilities are now coming back to life, and there's significantly additional expenditure being planned.

And because of that, we will expect that once -- as we can see right now, the price pinch was also due to a force majeure that occurred. There were two large uranium mines that shut down last year. Once was in Australia. They were flooded by a cyclone. We all know about hurricanes here, but in Australia they call them cyclones. And also, there was another flooding that happened in Canada two months before, and that has made it even worse, and that's what caused the price to spike to about 137. But the price is currently returning back to the more fundamental to support the capital investments which are needed for the long-term expansion of nuclear power.

MS. FLEMING: Thank you. We have no further questions.

CHAIRMAN CARTER: Thank you. Commissioners? Mr. Butler.

MR. BUTLER: A couple of brief redirect, please.

REDIRECT EXAMINATION

BY MR. BUTLER:

Q. Mr. Villard, is FPL currently reprocessing any of its spent nuclear fuel for any of its nuclear units?

A. No.

Q. Does the project that is the subject of this proceeding, does it contemplate the use of reprocessed fuel in your analysis?

A. No, we do not, because it contemplates the final disposal by the government with the 1 mill per kilowatt-hour fee.

Q. You just had an exchange with staff regarding uranium prices and supply. Would the sort of higher uranium prices that you mentioned significantly affect the overall operating costs of the proposed nuclear units?

A. No, it has not, because as we indicated in my oral summary and in my testimony, the interesting thing about nuclear fuel is that even if you may have one year where you have a significantly high price, that one year will only impact one-third of the fuel which is being loaded in the reactor core, and that one-third is amortized over five years, four or five years.

In addition to that, that one-third is also added to the other two-thirds of the fuel which is in the reactor core which was bought a few years ago, and therefore, there's a levelizing. There's a completely stabilizing impact that a big spike like that, you will not see a significant variation in the cost to the customer, which makes nuclear very, very stable in prices, in cost.

MR. BUTLER: Thank you. That's all the questions that I have. And I would move the admission of Exhibits 60 through 65.

CHAIRMAN CARTER: Any objections? Without objection, show it done.

(Exhibit Numbers 60 through 65 were admitted into the record.)

MR. BUTLER: Thank you. May Mr. Villard be excused?

CHAIRMAN CARTER: Absolutely.

THE WITNESS: Thank you.

MR. BUTLER: We would call our -- should we go on to our next witness?

CHAIRMAN CARTER: Yes.

MR. BUTLER: Okay. It will be Mr. Kosky.

MR. KRASOWSKI: Excuse me, Mr. Chairman. I have a question while the witness is coming up.

CHAIRMAN CARTER: Yes, sir.

MR. KRASOWSKI: Will we be ending with Mr. Kosky, being that were projected to go till 6:00, and it's 5:30? We have some questions for him, but we would like to stop there.

CHAIRMAN CARTER: Let me ask you this. We want to as much as possible accommodate you. Do you think you would be able to get your questions in in this time frame? Otherwise, we'll just find a possible breaking point.

MR. KRASOWSKI: I think we'll be able to ask Mr. Kosky all the questions we have of him, but we wouldn't be so available to ask Mr. Sim or Mr. Reed, two additional today before six o'clock. Just asking while we had a little dead time here, a little downtime.

CHAIRMAN CARTER: Okay. Well, let's get through this witness and see where we are.

MR. KRASOWSKI: And see where we are? Okay. Thank you.

MR. ANDERSON: FPL would --

CHAIRMAN CARTER: Mr. Anderson.

MR. ANDERSON: Thank you, Chairman Carter. FPL would call as its next witness Ken Kosky. He has not been sworn as a witness. He is an out-of-town witness, by the way.

CHAIRMAN CARTER: Thank you. Mr. Kosky, would you please stand and raise your right hand?

(Witness sworn.)

CHAIRMAN CARTER: Please be seated.

Thereupon,

KENNARD F. KOSKY

was called as a witness on behalf of Florida Power & Light Company and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. ANDERSON:

Q. Good afternoon, Mr. Kosky.

A. Good afternoon.

Q. Please tell us your name and business address.

A. My name is Kennard Kosky. My business address is 6241 Northwest 23rd Street, Suite 500, Gainesville, Florida, 32653.

Q. By whom are you employed, and in what capacity?

A. I'm employed by Golder Associates, Inc. as a principal in the Gainesville office.

Q. Have you prepared and caused to be filed 23 pages of prefiled direct testimony in this proceeding?

A. Yes, I have.

Q. Did you cause errata also to be filed?

A. Yes, I have.

Q. Do you have any further changes or revisions other than your errata sheet?

A. No, I do not.

Q. If I asked you the same questions in your prefiled direct testimony, would your answers be the same?

A. Yes, they would.

MR. ANDERSON: Chairman Carter, FPL requests that the prefiled direct testimony of Mr. Kosky be inserted into the record as though read.

CHAIRMAN CARTER: The prefiled testimony will be inserted into the record as though read.

BY MR. ANDERSON:

Q. Are you sponsoring any exhibits to your direct testimony?

A. Yes, I am.

Q. Are those KFK-1 through KFK-9?

A. Yes, they are.

MR. ANDERSON: Chairman Carter, those have been premarked, consistent with the staff list, as Exhibits Number 66 to 74.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Florida Power & Light Company's)	Docket No: 070650-EI
Petition to Determine Need for Determine Need for)	
Turkey Point Nuclear Units 6 and 7)	
Electrical Power Plant)	Filed: January 25, 2008

ERRATA SHEET

DIRECT TESTIMONY OF KENNARD F. KOSKY

PAGE #	LINE #	CORRECTION
16	11	Change "20,400" to "14,000"
16	11	Change "20,100" to "22,300"
16	12	Change "15,282,100" to "14,369,000"

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF KENNARD F. KOSKY

DOCKET NO. 07____-EI

OCTOBER 16, 2007

Q. Please state your name and business address.

A. My name is Kennard F. Kosky and my business address is 6241 NW 23rd Street, Suite 500, Gainesville, Florida 32653.

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

A. I am employed by Golder Associates Inc., an engineering consulting firm specializing in ground engineering and environmental services. I am a Principal with the firm in the Gainesville office involved primarily in the environmental aspects of electric power plants.

Q. Please describe your educational background and professional experience.

A. I received a Bachelor of Science degree in Engineering from Florida Atlantic University, and a Master of Science degree in Environmental Engineering from the University of Central Florida. I also completed one and half years of doctoral-level course work in the Engineering Ph.D. program at the University of Florida.

Over the last 30 years, my primary activities have involved the siting and licensing of electric power plants. I have worked on over 50,000 megawatts (MWs) of new and existing generation including conventional coal, oil and gas-fired steam generating units, combined cycle (CC) units, nuclear, integrated coal gasification combined cycle (IGCC) units, simple cycle units, municipal solid waste (MSW) fired units, biomass-fired steam generating units, and diesel units. My primary technical activities have involved siting and licensing of power facilities and managing the preparation of the overall environmental permitting applications. A copy of my curriculum vitae is attached as Exhibit KFK-1 to my testimony.

Q. Please describe any professional registrations or certifications that you hold in your field of expertise.

A. I am a registered Professional Engineer in mechanical engineering in the State of Florida. I have been practicing as a registered Professional Engineer since 1976.

Q. Could you please describe your responsibilities for FPL's proposed Turkey Point Nuclear Units 6 and 7 (Turkey Point 6 & 7) and your experience at the Turkey Point plant site and other nuclear plant sites?

A. Golder Associates has been retained to evaluate certain environmental aspects of Turkey Point 6 & 7 including preliminary evaluations of water resources and air quality. I had overall responsibility for the preparation of the Site Certification Application (SCA) for the FPL Turkey Point Unit 5 Project that was granted approval in 2005 by the Governor and Cabinet as the Siting

Board. This project evaluated the environmental aspects of Unit 5 as well as those of the Turkey Point plant site. I prepared, in my capacity as the Professional Engineer, the initial Title V Air Operating Permit Application for Turkey Point Nuclear Units 3 and 4. I prepared similar applications for FPL's St. Lucie Nuclear Plant and Progress Energy's Crystal River Nuclear Unit 3.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits KFK-1 through KFK-9, which are attached to my direct testimony.

Exhibit KFK-1	Curriculum Vitae of Kennard F. Kosky
Exhibit KFK-2	Graphical representation of the FPL Turkey Point Site showing areas for Turkey Point Units 6 & 7
Exhibit KFK-3	Table of avoided air emissions from the total amount of nuclear generation through 2006 as a function of possible generation alternatives when the nuclear units were constructed
Exhibit KFK-4	Figure showing the avoided emissions of CO_2 from 1987 through 2006
Exhibit KFK-5	Figure showing a comparison of the avoided air emissions in 2006 from FPL's existing nuclear generation
Exhibit KFK-6	Figure showing Environmental Benefits of Nuclear Generation through a comparison of

	avoided CO_2 emissions by Turkey Point 6 & 7 with other generation alternatives
Exhibit KFK-7	Graphical comparison of FPL's future CO_2 projected emissions avoided by adding Turkey Point 6 & 7
Exhibit KFK – 8	Figure showing the reduction in Annual CO_2 Emissions Achieved by Adding 1000 MW of Non-Emitting Generation Alternatives in Florida
Exhibit KFK-9	Choosing Nuclear Helps Reduce CO_2 Emissions in the Year 2021 by 76% Toward the Year 2000 Level of 62.6 MM Tons

Q. Are you sponsoring any sections in the Need Study?

A. Yes. I am sponsoring Section V.A.3, titled Environmental Regulations, and Appendix F of the Need Study.

Q. What is the purpose of your testimony?

A. My understanding is that the Florida Public Service Commission (the Commission) will consider and determine the need for Turkey Point 6 & 7 pursuant to the utility laws and regulations that it is responsible for administering. These laws and regulations that consider and determine need do not include environmental regulation. However, because electric power plants constructed in Florida must comply with environmental regulations, the costs of compliance are part of Turkey Point 6 & 7. Accordingly, the purpose

of my testimony is to provide the Commission an overview of the key environmental aspects of Turkey Point 6 & 7 and of the environmental regulatory matters not related to the radiological aspects of nuclear generation. FPL witness Diaz will address the radiological aspects related to Turkey Point 6 & 7.

Based upon my training, experience and review of the environmental controls being contemplated for Turkey Point 6 & 7, my testimony reaches and supports the following key conclusions: (i) the environmental methods and controls being considered for Turkey Point 6 & 7 would not only meet, but be better than the extensive environmental regulatory requirements; (ii) the selection of nuclear technology is the best available alternative from an environmental perspective consistent with maintaining fuel diversity in the 2018-2021 time frame; and (iii) the use of nuclear technology minimizes the uncertainty of potential future environmental compliance costs associated with CO_2 emissions.

Q. Please summarize your testimony.

A. My testimony provides an overview of the key environmental aspects of Turkey Point 6 & 7. My testimony concludes that the nuclear power generation being considered for Turkey Point 6 & 7 can meet or be better than the environmental regulatory requirements. Turkey Point 6 & 7 can be designed to have minimal environmental impacts using proven and tested technologies. As a result, Turkey Point 6 & 7 are the preferred choices from

an environmental perspective and would contribute to the needed fuel diversity for the FPL system in the 2018-2021 time frame. Future environmental legislation is likely to regulate CO_2 emissions in the United States. Although the type of CO_2 regulation is uncertain, the use of nuclear power generation for Turkey Point 6 & 7 will have economic advantages over fossil fuel-fired electric generation, regardless of the type of regulation adopted.

Q. How is your testimony organized?

A. My testimony is divided into four sections. Section I provides an overview of the major environmental requirements for Turkey Point 6 & 7. Section II presents information on how the design of Turkey Point 6 & 7 will not only meet, but also be better than these requirements. In this section, I will also provide information that demonstrates the favorable environmental characteristics of Turkey Point 6 & 7, while contributing to fuel diversity for customers in the time frame required. Section III describes how Turkey Point 6 & 7, from an environmental perspective, is the best alternative to meet the fuel diversity need in FPL's system. Section IV describes the existing and possible future environmental requirements and their potential influence on future environmental compliance costs of Turkey Point 6 & 7. In this section, I will describe how these existing and possible future environmental costs were included in FPL's analysis.

SECTION I: ENVIRONMENTAL APPROVALS AND REQUIREMENTS

Q. What environmental approvals are required for Turkey Point 6 & 7?

A. Turkey Point 6 & 7 will be required to obtain federal and state environmental approvals and permits. The principal state environmental approval is the Site Certification under Florida's Power Plant Siting Act. Site Certification is a comprehensive review of all environmental aspects of Turkey Point 6 & 7 coordinated through the Florida Department of Environmental Protection (FDEP) and involving all state and regional agencies with environmental responsibility and those agencies potentially affected by the project. This includes, but is not limited to, the FDEP, Florida Department of Community Affairs, Florida Department of Transportation, Florida Fish and Wildlife Conservation Commission, South Florida Water Management District and Miami-Dade County. This comprehensive environmental review evaluates the environmental controls for Turkey Point 6 & 7 and determines compliance with applicable state, regional and local environmental standards, which ultimately leads to a comprehensive analysis by agencies and Conditions of Certification that set forth environmental requirements.

Turkey Point 6 & 7 will also require federal approval and federally delegated permits. Under the requirements of the Nuclear Regulatory Commission (NRC), an environmental review is conducted by the NRC staff in accordance with the National Environmental Policy Act (NEPA). Draft and Final

Environmental Impact Statements will be prepared as part of the NRC licensing process. Other possible approvals include an approval by the U.S. Army Corp of Engineers for impacts to wetlands, a Prevention of Significant Deterioration (PSD)/Air Construction Permit by the FDEP for support facilities, and an Underground Injection Control (UIC) Permit from the FDEP.

Q. Please summarize the major requirements for the environmental approvals of Turkey Point 6 & 7.

A. The major requirements include: (i) minimizing impacts to wetlands and providing compensatory wetland mitigation; (ii) preventing adverse impacts to fish and wildlife; (iii) using the lowest quality water and minimizing impacts to surface and ground waters; and (iv) installing control technologies to minimize air emissions.

Q. What is the current status of obtaining environmental approvals for Turkey Point 6&7?

A. FPL is conducting feasibility studies related to certain environmental aspects of design alternatives for Turkey Point 6 & 7. These feasibility studies include investigating the environmental impacts of water use and discharge alternatives to minimize environmental impacts. Environmental applications such as the Site Certification Application (SCA), environmental portions of the NRC licensing application, PSD/Air Construction Permit, UIC Permit, and U.S. Army Corp of Engineers wetlands permit will be prepared after plant designs are further developed.

Q. What are the general time frames for approvals?

A. While the specific time frames for approvals cannot be determined with certainty, the general time frames are set by federal and state statutes and regulations. For example, Florida's Site Certification process has time frames established by statutes and rules providing for about 9 to 13 months from submission of the application until decision by the Secretary of the FDEP or the Siting Board. The Site Certification environmental review process also has significant opportunities for public review and comment including opportunities for public hearings. The actual time frame until decision often varies from case to case, depending on environmental aspects being considered by the various state agencies that review the SCA. On the federal level, the NRC licensing process, which includes the NEPA environmental review, also is governed by a standard schedule that can be varied depending upon the case and also has significant opportunities for public review and comment.

Providing information and participating in the state and federal approval process will take considerable effort, and neither the schedule nor the specific outcomes can be forecast with certainty. FPL is starting early to identify environmental aspects, solicit input from affected agencies and performing comprehensive environmental assessments in order to support its environmental applications.

SECTION II: THE PROJECT'S COMPLIANCE PLANS

Q. What general features of Turkey Point 6 & 7 serve to meet environmental requirements?

A. The Turkey Point Plant site was selected at a location that contains much of the needed infrastructure for land, water resources, and transmission, thus minimizing environmental impacts. The Turkey Point site is an existing electric generation facility with infrastructure that can support new nuclear generation. The Turkey Point site currently has three natural gas and fuel oil-fired units, and two nuclear electrical generation units. The Turkey Point site encompasses 11,000 acres, which includes about 5,900 acres for a cooling canal system. In contrast, the new nuclear units will require about 300 acres of land for facility operations. The existing cooling canal system is classified as an industrial wastewater facility by the FDEP with no discharge to surface waters. FPL also owns the 13,000-acre Everglades Mitigation Bank, which is adjacent to the Turkey Point site.

I prepared Exhibit KFK-2 that shows the FPL Turkey Point Plant site, the proposed area for the nuclear units, cooling canals and Everglades Mitigation Bank. The nuclear units will require a significant amount of fill. The existing cooling canal system and two areas immediately north of the Turkey Point site have been identified as potential areas where fill can be obtained. The potential areas off the FPL site are shown in Exhibit KFK-2. There is

sufficient land area within the Turkey Point site and Everglades Mitigation Bank to provide mitigation for wetland impacts. Water use effects can be minimized by the potential availability of several water supply options that include reuse water and lower-quality water from the Upper Floridan Aquifer. Water would be recycled as much as possible and released to the existing cooling canal system or to UIC wells. Turkey Point 6 & 7 will not have industrial water discharges to surface waters or groundwater that can impact the environment. Nuclear steam generation does not produce air emissions; air emissions are only emitted from equipment supporting the nuclear units such as the cooling towers and emergency diesel generators. Advantages of the Turkey Point site include the existing transmission infrastructure and its location relative to FPL's load center. While modest transmission upgrades will be required, it is anticipated that an existing transmission right-of-way can be used for the majority of the required upgrades and transmission interconnections. The use of existing right-of-way will reduce environmental impacts associated with Turkey Point 6 & 7.

Q. Have all the environmental controls and associated costs been identified for Turkey Point 6 & 7?

A. The details have not been determined at this stage of the project's development. FPL has identified a variety of environmental controls that encompass the alternatives being considered for Turkey Point 6 & 7. These alternatives form an environmental design envelope that can be evaluated for environmental compliance. FPL expects to update the Commission in its

annual filings on specific environmental costs as designs are further developed and finalized.

Q. Based upon your training, experience and analysis, have you concluded whether the environmental controls contemplated for Turkey Point 6 & 7 can meet environmental requirements?

A. Yes. I conclude that the environmental controls being contemplated for Turkey Point 6 & 7 that include proven technologies for water supply, water treatment and support equipment can meet environmental requirements. The technologies being considered have been proven to minimize impacts to the environment. Many of these technologies have been used on recent FPL projects approved by the FDEP and certified under the Site Certification process.

Q. Will FPL's environmental compliance strategy for Turkey Point 6 & 7 meet, or exceed, the applicable environmental requirements?

A. Yes. FPL's environmental compliance strategy will meet all applicable environmental requirements and standards. Indeed, many of the environmental designs will be better than the requirements and standards since they are based on proven technologies.

Q. What are greenhouse gases?

A. Greenhouse gases are gases in the atmosphere that trap heat. Greenhouse gases are both naturally occurring and emitted by man-made activities. Greenhouse gases in the atmosphere include CO_2, methane, nitrous oxide and man-made fluorinated gases.

Q. Is nuclear generation considered a "non-emitting" technology for greenhouse gas emissions?

A. Yes. Nuclear generation, as well as wind and solar generation, is generally considered a "non-emitting" technology because nuclear units emit no greenhouse gases as they operate to produce electricity.

Q. Does this mean there are no greenhouse gas emissions associated with these technologies? Please explain.

A. No. There are greenhouse gas emissions associated with the resource development, handling and processing, facility construction (including equipment), transportation, maintenance and decommissioning of all electric generation technologies. Greenhouse gas emissions associated with these indirect activities and with operation are referred to as life-cycle emissions. While it is extremely difficult to assign life-cycle emissions to a single project, a range of life-cycle greenhouse gas emission estimates are available for different types of generation such as nuclear, photovoltaic solar and wind. Life-cycle greenhouse gas emission estimates are available from the Nuclear Energy Institute, United Kingdom Parliamentary Office of Science and Technology, Australian Uranium Association and the International Atomic Energy Association, among other sources. Greenhouse gas emissions for nuclear and wind generation have the lowest life-cycle emissions available for Florida at about 30 pounds of CO_2 (equivalent) emitted for each mega-watt hour generated [lb CO_2 (e)/MWH]. For photovoltaic solar generation, the life-cycle greenhouse gas emissions are higher than nuclear and wind at about

100 lb CO_2(e)/MWH. In contrast, the operation of a natural gas combined cycle power plant has direct operational CO_2 emissions of 750 lb CO_2/MWH and indirect greenhouse gas emissions of about 110 lb CO_2 (e)/MWH.

Q. How will Turkey Point 6 & 7 influence FPL's emission rates as they compare to other utilities?

A. Currently, FPL's overall emission profile is low compared to all other utilities in the U.S. In a study conducted by the Natural Resources Defense Council (NRDC), FPL emission rates in lb/MWH for sulfur dioxide (SO_2), nitrogen oxides (NO_x) and CO_2 were found to be one of the lowest in the country. SO_2 and NO_x are the primary air emissions when burning fossil fuels while CO_2 is the primary greenhouse gas emitted. The addition of nuclear generation will further reduce FPL's emissions profile of these air emissions.

Q. Have FPL's existing nuclear units reduced FPL's air emissions?

A. Yes. The operation of FPL's nuclear units has resulted in a significant amount of air emissions being avoided as compared to the same amount of electric generation being produced using fossil fuels. I prepared two exhibits to illustrate the effect that FPL's nuclear unit operations have had on decreasing the amount of fossil fuels and air emissions. Exhibit KFK-3 shows the amount of fossil fuel that would have been used and the quantity of air emissions of SO_2, NO_x and CO_2 that would have been emitted if FPL's nuclear units did not exist. During the time the nuclear units were constructed, they would have been replaced with alternative fossil fuel-fired units. The alternative fossil fuel-fired units would have been an 800 MW

class residual oil-fired unit, a mid-1970's vintage gas-fired combined cycle unit or a late 1970's vintage pulverized coal-fired unit. As shown on this exhibit, FPL's nuclear units have avoided millions of tons of SO_2 and NO_x, and hundreds of millions of tons of CO_2 that would otherwise have been emitted if these nuclear units did not exist.

Exhibit KFK-4 shows a graphical representation of the avoided emissions of CO_2 from 1987 through 2006. This figure shows the CO_2 emissions that did not occur due to the operation of FPL's nuclear units.

To place these avoided air emissions in perspective, it is important to consider the magnitude of such emissions in Florida. The FDEP has stated that in 2003 the air emissions from all electric generating units in Florida were 475,000 tons of SO_2 and 253,000 tons of NO_x. For CO_2, the 2003 emissions from all sources including electrical generation and transportation were estimated to be about 250 million tons as presented by FDEP. Indeed, FPL's nuclear units in 2003 avoided at least 14 million tons and up to 26 million tons of CO_2 emissions, depending upon the alternative fossil fuel-fired generation that would have operated to meet FPL's electric demand absent the nuclear units. This amounts to an avoidance of about six to 10 percent of Florida's CO_2 emissions simply by the operation of FPL's existing nuclear units. The avoided emissions from FPL's nuclear units are considerable by any measure.

Q. What was FPL's air emissions profile for 2006?

A. As previously mentioned, FPL's overall emissions profile is one of the lowest in the country. Although FPL has one of the cleanest fossil fuel-fired fleets, FPL's nuclear units have served to significantly decrease FPL's air emissions profile when all sources of generation are considered. Exhibit KFK-5 shows the quantity of air emissions of SO_2, NO_x and CO_2 that would have been emitted in just one year (2006) if the same amount of generation from the existing nuclear units were generated using fossil fuels based on FPL's clean fossil fuel generation fleet. I used FPL's 2006 fossil fuel emissions from all units and the total amount of generation for this example. The graph shows that FPL's nuclear units in 2006 avoided 20,400 tons of NO_x, 20,100 tons of SO_2 and 15,282,100 tons of CO_2 that would otherwise have been emitted using fossil fuels. FPL's nuclear units have, in effect, reduced emissions across FPL's system with an overall air emissions reduction of about 30 percent.

Q. Will Turkey Point 6 & 7 have similar environmental benefits when operational?

A. Yes. Even though FPL's fossil fuel-fired generating units have low emission rates and these emission rates will likely be lower in the future, additional electric generation will be required to meet FPL's customer demand. Turkey Point 6 & 7 will displace a considerable amount of NO_x, SO_2 and CO_2 emissions going forward with the amount varying depending upon the type of alternative generation installed such as natural gas combined cycle or

integrated coal gasification combined cycle (IGCC). Exhibit KFK-6 illustrates the annual avoided CO_2 emissions depending upon the alternative fossil fuel-fired generation for the same amount of generation. As shown on this exhibit, from about 7 to 17.6 million tons of annual CO_2 emissions will be avoided with Turkey Point 6 & 7 compared with fossil fuel-fired generation options. Over a 40-year period of operation, Turkey Point 6 & 7 will displace from about 21,300 to 49,200 tons of NO_2, from about 14,200 to 75,400 tons of SO_2, and from about 266 million to 700 million tons of CO_2. The effect of avoided CO_2 emissions from nuclear generation is illustrated in Exhibit KFK-7. This figure shows FPL's projected future CO_2 emissions avoided with the addition of Turkey Point 6 & 7. The large magnitude of the air emissions avoided by Turkey Point 6 & 7 is clearly a significant environmental benefit for Florida's future.

SECTION III: ENVIRONMENTAL CONSIDERATIONS OF ALTERNATIVE GENERATION

Q. Are you familiar with the environmental aspects of possible generation alternatives that are potentially available to meet FPL's generation requirements in the 2018-2021 time frame?

A. Yes. Over the last several years I have been involved in the environmental licensing of over 5,000 MW of natural gas-fired combined cycle plants. I

have been involved in the environmental feasibility and licensing of solid fuel-fired generation technologies as well.

SECTION IV: FUTURE ENVIRONMENTAL CONSIDERATIONS

Q. What future environmental requirements will potentially be developed that will likely influence Turkey Point 6 & 7?

A. Although there are no current laws regulating emissions of CO_2, the future regulation of CO_2 is likely. Over the last several years, including this year, there have been federal legislative initiatives that have proposed different forms of CO_2 regulation. These initiatives have included both multi-sector and electric sector regulation with variable reductions of CO_2 emissions and some with cap-and-trade systems. Since electrical generation from nuclear technology does not generate CO_2 emissions, nuclear technology may be given preferential economic consideration over fossil fuel-fired generation. For example, the CO_2 emissions from a natural gas-fired combined cycle plant are about 750 pounds per megawatt-hour (lb/MW-hr) while the CO_2 emissions from an IGCC unit are about 1,970 lb/MW-hr. For a 1,000 MW combined cycle plant, about 3 million tons per year of CO_2 will be emitted assuming a 90 percent capacity factor. A 1,000 MW IGCC unit would emit about 8.7 million tons per year of CO_2 at a 90 percent capacity factor. In contrast, nuclear power generation has no associated CO_2 emissions, which could result

in even lower relative operational costs than natural gas combined cycle if CO_2 emissions are regulated for this type of fossil fuel plant.

Q. Has FPL considered the relative contribution of nuclear energy and other choices towards reducing FPL's carbon emissions?

A. Yes. For purposes of comparing the relative contribution of nuclear energy and other choices towards reducing FPL's carbon emissions, FPL has calculated the CO_2 reductions that would be achieved by adding 1,000 MW of non-emitting nuclear generation in Florida compared with other choices, such as adding 1,000 megawatts of wind or solar generation. The results of that comparison are summarized on Exhibit KFK-8. As shown in this exhibit for the same installed generation capacity, solar and wind have at least six times lower avoided CO_2 emission than nuclear generation. This is based on the fact that these technologies have inherently low capacity factors. Electric energy from solar can only be produced during the daytime and is greatest during certain times of the day. Wind generation in Florida is quite variable with the lowest possibility during the nighttime and morning hours. While solar and wind generation are possible in Florida, their capacity factors will be much lower than nuclear generation.

Q. What conclusions can one draw from Exhibit KFK-8?

A. This exhibit clearly shows that adding 1,000 MW of nuclear generation will have a far more significant effect in avoiding and reducing CO_2 emissions than installing the same MW of solar or wind.

Q. Will adding nuclear generation reduce the total CO_2 emissions from FPL's system and help move toward the goal of achieving the same level of total CO_2 emissions from FPL's system in 2000 as stated in Governor Crist's Executive Orders?

A. Yes. This is illustrated in Exhibit KFK-9, which shows that adding non-emitting nuclear generation to FPL's resource portfolio by 2021 (the first year of expected dual-unit operations) can reduce FPL's 2021 CO_2 emissions 76 percent of the way toward the year 2000 level. The year 2000 level of CO_2 emissions is one of the target levels cited in various Greenhouse gas reduction proposals. In contrast, while other electric generation choices can reduce CO_2 emissions somewhat, their capacity factors are far less. Therefore, none of the other choices shown either individually or combined together can result in such a significant reduction as does nuclear generation. This underscores the powerful beneficial effect that new nuclear baseload generation has, due to its high capacity factor and non-emitting technology, towards achieving CO_2 reduction goals.

Q. Does this mean that the potential economic impacts of future CO_2 regulation may be favorable for Turkey Point 6 & 7 compared to fossil fuel-fired generation?

A. Yes. In the United States to date, while CO_2 is widely recognized as giving rise to detrimental environmental impacts, there has not yet been a cost formally assigned in the market or through regulation for emission of CO_2. FPL's parent company, FPL Group, is advocating that an effective GHG

policy will price carbon emissions throughout the economy and do so in a predictable fashion. Various forms of legislation have been proposed before Congress, which would have the effect of pricing carbon emissions for at least portions of the economy, among them power generation. While it is uncertain what type of legislation will ultimately be adopted, at the very least there would be no direct economic impact on nuclear technology compared to other generation options. However, costs for fossil fuel generation options, especially operational costs, will increase. Nuclear generation technology would not only have economic benefits if potential future CO_2 regulation were enacted but would have the significant environmental advantage of providing electric generation with no CO_2 emissions. For example, if a $10 per ton of CO_2 cost were placed on fossil fuel-fired generation, a 1,000 MW natural gas-fired combined cycle plant would have an additional operational cost of about $30 million per year while an IGCC facility would have an additional operational cost of about $87 million. The same amount of generation from nuclear units would not incur this cost. In addition, since natural gas has the lowest amount of CO_2 emissions of all fossil fuel-fired generation, the regulation of CO_2 emissions would increase the pressure on the supply and cost of natural gas. While the extent of CO_2 costs and the influence on natural gas price is unknown, it is certain that the costs associated with any regulation of CO_2 emissions and the resulting increase in natural gas costs would improve the relative economics of Turkey Point 6 & 7.

Q. Please explain the potential magnitude of compliance costs for CO_2 regulations that could be avoided by operation of Turkey Point 6 & 7.

A. CO_2 compliance costs may be required under a tax, fee or cap-and-trade system. Appendix F to the Need Study was developed to reflect potential future costs of CO_2 as well as the potential future costs for other air emissions currently regulated under the Clean Air Act (i.e., SO_2, NO_x and mercury). The costs in Appendix F were developed using as the starting point the projected costs from ICF International's report titled "U.S. Emission & Fuel Markets Outlook, 2006 edition". The ICF report provides projected air emissions compliance costs through 2030. Beyond 2030, the ICF compliance costs for all air emissions were projected forward based on a review of recent assessments related to the growing interest in CO_2 regulation and expected compliance costs. Using these estimated compliance costs the cumulative 40-year cost for alternative generation could range from $6 billion to $28 billion or more for combined cycle generation, and $17 billion to $73 billion or more for IGCC generation. Turkey Point 6 & 7 would avoid these potential costs.

Q. Would there be compliance costs for emissions of SO_2, NO_x and Mercury as a result of regulations that would be avoided by operation of Turkey Point 6 & 7?

A. Yes. The Environmental Protection Agency passed two regulations referred to as the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR), which FDEP has adopted for Florida. CAIR regulates the emissions of SO_2 and NO_x, while CAMR regulates emissions of mercury. Allowances

are required for these pollutants under the cap-and-trade system. The 40-year compliance costs for these air emissions would be much less than the compliance costs for CO_2 and would likely be on the order of $120 to $150 million for a natural gas combined cycle generation and on the order of $0.8 to $1.2 billion for IGCC.

Q. Does this conclude your direct testimony?

A. Yes.

BY MR. ANDERSON:

Q. Mr. Kosky, have you prepared a summary of your direct testimony?

A. Yes, I have.

Q. Please provide your summary to the Commission.

A. Good evening, Chairman and members of the Commission. My name is Kennard Kosky, and over the last 30 years, I've spent my career as an engineer permitting and doing environmental studies for electric power plants. I've performed projects in 28 states and 22 foreign countries involving the construction and/or operation of over 100,000 megawatts of electric generating facilities. My experience specifically includes the overall responsibility for the site certification application for Turkey Point Unit 5 and the certification application for Turkey Point Units 3 and 4 uprate projects.

My role here today is to provide assurance as an independent Florida Professional Engineer that Turkey Point 6 and 7 can comply with environmental requirements and that the expected environmental compliance costs have been included and properly considered by FP&L.

Here are some key points concerning Turkey Point 6 and 7. Turkey Point 6 and 7 will utilize highly efficient base load nuclear generation technology that

has the beneficial effect of avoiding CO_2 emissions. The environmental controls being considered for Turkey Point 6 and 7 are based on proven and demonstrated technologies that will minimize environmental impacts. Turkey Point 6 and 7 can be constructed and operated in a manner that minimizes impacts to the environment.

There have been discussions this week about life cycle emissions for nuclear generation. My testimony shows that life cycle emissions for nuclear generations are low when compared to non-emitting renewables. Life cycle emissions for nuclear generation are equivalent to wind generation and three times lower than solar generation.

To put the future environmental benefits of nuclear generation in perspective, I have shown on Exhibit Number KFK-4 -- I think you have a copy -- the past environmental benefits of avoided CO_2 emissions by FP&L's four existing nuclear units. Since their initial operation, FP&L's nuclear units have cumulatively avoided about 400 to 700 million tons of CO_2.

These historical benefits of nuclear generation will be greater in the future with the addition of Turkey Point 6 and 7 to FP&L's system. The future benefit of CO_2 emissions that are avoided by Turkey Point 6 and 7 is illustrated in Exhibit KFK-7.

This exhibit shows a significant environmental benefit of avoided CO_2 emissions for Florida's future.

Most importantly, adding base load nuclear generation will reduce the total CO_2 emissions from FP&L's system. This is illustrated in Exhibit KFK-9, which shows the reduction of CO_2 emissions in FP&L's system by adding non-emitting nuclear generation by 2021. Adding Turkey Point 6 and 7 to FP&L's system, as shown by the lower bar on the left, can reduce FPL's 2021 CO_2 emissions 76 percent of the way toward the goal stated in Governor Crist's executive orders.

None of the other non-emitting generation choices, either individually or collectively, can result in such a significant reduction as does base load nuclear generation toward achieving Florida's CO_2 reduction goals. This is illustrated in Exhibit KFK-8, showing the higher avoided CO_2 emissions of base load nuclear generation compared to solar and wind for the same installed capacity.

That concludes my summary.

MR. ANDERSON: Chairman Carter, Mr. Kosky is available for cross-examination.

CHAIRMAN CARTER: Thank you. Mr. Beck.

MR. BECK: Thank you, Mr. Chairman.

CROSS-EXAMINATION

BY MR. BECK:

Q. Good afternoon, Mr. Kosky.

A. Good afternoon.

Q. Mr. Kosky, in addition to the exhibits that you've attached to your testimony, you're also sponsoring Appendix F to the need study, are you not?

A. That's correct.

Q. Would you please turn to page 3 of 4 of Appendix F to the need study?

A. I do not have -- I did not bring that with me, unfortunately.

MS. KLANCKE: Commissioners, I have extra copies of this document if you need them.

CHAIRMAN CARTER: One second here. Are you going to go into a line of questioning on this, Mr. Beck?

MR. BECK: Yes.

CHAIRMAN CARTER: Okay. One second then.

THE WITNESS: I have page 3 of 4 here.

MR. BECK: Thank you. And that was unplanned, that the staff plans to use this exhibit as well.

BY MR. BECK:

Q. Mr. Kosky, on page 3 of 4 of Appendix F to the need study, you show various scenarios for projections

of cost for carbon dioxide emissions, do you not?

A. That's correct.

Q. And there are four different environmental cost projections that are listed on this page; is that right?

A. That's correct.

Q. What is Env 1?

A. Env 1 is a mild CO_2 projection cost.

Q. And is that projection based on a study performed by ICF International?

A. Yes, it was, in part. It's based on their projections of a 2006 study that they had conducted which provided costs through 2030.

Q. And when you say it's in part, it's because you used the ICF study through 2030; is that right?

A. That's correct.

Q. And then past 2030, the ICF study does not have projections, does it?

A. That's correct.

Q. So how did Florida Power & Light use the ICF study to project past 2030?

A. For each of the different cases, a projection was made that would essentially estimate by 2050 what the cost would be. It was a consensus decision, and then from 2050 to 2030, a straight line was drawn and

the estimates made.

Q. And when you say a consensus, a consensus among whom?

A. Myself and members of FP&L.

Q. What did you base your projection of 2050 on in reaching that consensus?

A. They looked -- the projections were pretty similar to what you would project if you were to look on a graph and sort of draw a line out there. And the projections were slightly different for each different case in terms of that 2050 determination.

Q. Are you saying you essentially extrapolated?

A. It was an extrapolation of what ICF had initially made. You could call it that, yes.

Q. And the mild case, which is Env 1, was that based on a particular bill that had been introduced in Congress?

A. Yes, it was.

Q. Was that the Bingaman bill?

A. That was the Bingaman bill back in 2006 when they made that projection, yes.

Q. All the dollars that are listed on Appendix F are in nominal dollars per ton; is that correct?

A. That's correct.

Q. Does that mean that it's in the dollars that

will exist at the time of the projection?

A. Yes.

Q. It includes the impact of inflation; is that right?

A. They were escalated at a rate of 2.5 percent based on the basis of the ICF report.

Q. So if we look, for example, at the year 2020 for the mild case, there is the number 13 listed there. Does that mean that the emission cost projected by Florida Power & Light is $13 per ton of carbon dioxide in 2020 dollars?

A. Yes.

Q. And likewise, if we looked at 2030, $19 is listed for the mild case, and that would be in 2030 dollars?

A. Yes.

Q. Let's go to Env 2. Is that your expected case?

A. That was a moderate case. We called it sort of a mid case in this particular analysis.

Q. Okay. You've also in response to -- in interrogatory responses described that as an expected case, did you not?

A. Yes. This particular Env 2 came from ICF's expected case, which they had labeled as expected.

Q. And under that scenario, the carbon dioxide emission costs in 2020 would be $26 per ton?

A. Yes.

Q. And in 2030, $52 per ton?

A. Yes.

Q. Okay. Scenario number 3, what is that?

A. Scenario number 3 was a high case.

Q. And is that based upon a bill by Senator McCain?

A. Yes, it was, in the ICF projection, yes.

Q. You used the ICF projections for numbers 1, 2, and 3; is that right?

A. That's correct.

Q. And is that also called the stringent case?

A. Stringent case or high case initially, yes.

Q. These three scenarios we discussed, numbers 1, 2, and 3, are they the same scenarios that Florida Power & Light used in the Glades coal case?

A. Yes, they were.

Q. And number 4, that was not used in the Glades coal case, was it?

A. No, that was not.

Q. And number 4 that's listed on here was created by Florida Power & Light for this case; is that right?

A. Yes, it was.

Q. And the numbers in number 4 are essentially 130 percent of the numbers that are listed in number 3; is that right?

A. Yes, that's correct.

Q. And what did you base that upon in creating scenario number 4?

A. That was based on a review of some reports that had made projections for legislation that was filed this year. One of those reports included a report from MIT that showed that the expected compliance costs may be much higher than as projected by ICF in 2006. That particular one was used as a way to account for newer legislation and potentially higher costs for CO_2 in the future.

Q. When you say the fourth one was based in part on the study by MIT, is that a staff exhibit that's being produced, that Florida Power & Light produced in response to Document Request Number 20?

A. I believe it is. It was supplied as a result of an interrogatory.

Q. Does the MIT report contain a specific forecast for carbon dioxide emission costs?

A. No, it does not. It evaluates various legislative proposals and estimates what the impacts of those would be.

MR. BECK: Mr. Chairman, I have an exhibit that I would like to ask be labeled for identification. And it's a document that Florida Power & Light has claimed confidentiality, so I have it in red folders. The exhibit is titled -- it's excerpts from U.S. Emission and Fuel Markets Outlook 2006, Volume II, Emission Markets, Winter 2006/2007.

CHAIRMAN CARTER: Can you assist Mr. Beck, staff, in passing this out, please.

You don't need it? All right.

MR. KRASOWSKI: Excuse me, Mr. Chairman.

CHAIRMAN CARTER: Yes, sir.

MR. KRASOWSKI: For the record, I would like to say that the Krasowskis are not receiving this document. We haven't expressed in an interest to review the confidential materials.

CHAIRMAN CARTER: Okay.

MR. BECK: I'm sorry, Mr. Chairman. You labeled this as an exhibit? I didn't get the number.

CHAIRMAN CARTER: The confidential? No, I did not.

MR. BECK: I would like to ask that it be labeled.

CHAIRMAN CARTER: For identification purposes?

MR. BECK: Yes, please.

CHAIRMAN CARTER: I think we're on 90 --

MS. FLEMING: Seven.

CHAIRMAN CARTER: Ninety-seven.

(Exhibit Number 97 was marked for identification.)

BY MR. BECK:

Q. Mr. Kosky, do you have Exhibit 97 for identification in front of you?

A. Yes, I do.

Q. And do you recognize that as an except from the ICF study that Florida Power & Light used for the projections of environmental costs?

A. Yes.

Q. Mr. Kosky, I'm going to ask you some questions about this. I'm going to try my very best to avoid verbalizing anything that Florida Power & Light would claim to be confidential, but I would like to go through particularly the page number that has 142 in the lower right-hand corner, the second to last page. Do you have that in front of you?

A. Yes, I do.

Q. Okay. Do you see the chart on the right-hand side?

A. Yes.

Q. Okay. And in that chart, there's a red line

that's labeled "Expected Case"?

A. Yes, it is.

Q. And does that relate to your number 2 carbon dioxide scenario that you've shown?

A. Yes, it does. That was the -- information from this particular case was used to develop case number 2, Env 2, in Exhibit F.

Q. Now, on top of the chart, it lists the pricing scheme that's used in the exhibit. It's not nominal dollars as we discussed in your Appendix F, is it?

A. No. It's constant dollars, 2005.

Q. And would that be the reason that the numbers that we see on the chart here do not match the numbers that are contained in Appendix F?

A. That's correct.

Q. And in the chart -- I think you already said this. The broad red line would be your Environmental 2, the expected case; is that correct?

A. That's correct.

Q. And you see that there's a purple line on the graph. Would that be the mild case?

A. Yes, it would.

Q. And the blue line would be your number 3 case; is that right?

A. Yes.

Q. Now, with regard to the expected case, there's a chart on the left side of this page that shows various weightings of various bills by various states. Do you see that?

A. Yes.

Q. Could you briefly describe how ICF utilized weightings and dates to develop the expected case?

A. Well, they used -- based on their projections, developed CO_2 price trajectories based on each bill and each year. Then ICF determined for each year and for each bill what the probability would be relative to each of those years and bills. Those probabilities are in turn used to estimate the expected case.

Q. You testified in the Glades coal case certificate of need proceeding, did you not?

A. Yes, I did.

Q. And do you recall whether there was a witness for the Sierra Club and the Natural Resource Defense League that testified about projections of emission costs in that case, David Schlissel?

A. I believe there was, yes.

Q. Do you recall how his middle projection compared to the expected case of ICF?

A. If recall correctly, it was pretty close. I don't know how much different it was, but it was fairly

close, I believe.

Q. Mr. Kosky, do you recall the deposition we took two weeks ago and one day?

A. Yes, I do.

Q. And do you recall at that deposition I asked you whether this ICF study was the most recent study by ICF that Florida Power & Light had at that time?

A. Yes, you did.

Q. And you told me that that was the most recent study at that time, did you not?

A. To my knowledge, it was.

Q. Okay. Is there an updated forecast?

A. Yes, there is.

Q. When was it released?

A. I was made aware of that last Thursday or Friday, because it's a confidential document of FP&L's, and I was made aware of it last, as I said, either Thursday or Friday.

Q. Okay. And have you reviewed the new forecast provided by ICF?

A. Yes, I have.

Q. Okay. And when did you actually receive possession of that yourself?

A. About Thursday or Friday, about the same time I was aware that it was available.

Q. And do you when that study was provided to the parties in this case?

A. I do not.

MR. BECK: Mr. Chairman, I have another exhibit I would like to ask to be labeled for identification.

CHAIRMAN CARTER: Okay.

MR. BECK: And I'm hoping -- I asked FPL earlier if they would have additional copies. This is the two pages?

MR. ANDERSON: The two pages?

MR. BECK: Yes.

MR. ANDERSON: Yes, we have those.

MR. BECK: I would like to ask if that could be distributed and labeled as an exhibit for identification.

CHAIRMAN CARTER: That would be Number 98. What was the title?

MR. BECK: Updated Forecast by ICF.

(Exhibit Number 98 was marked for identification.)

BY MR. BECK:

Q. Mr. Kosky, do you have Exhibit 98 for identification in front of you?

A. Yes, I do.

Q. And is this an excerpt from the new forecast prepared by ICF?

A. Yes, it is.

Q. Could you turn to the page that has a chart on it? I'm sorry, a graph.

A. I have it.

Q. On the graph, there are a number of different scenarios that are portrayed; is that correct?

A. Yes.

Q. And there's one line on the graph with red blocks that are used to create the line. Is that an expected case?

A. Yes. ICF indicates that that's their expected case, yes.

Q. And so would that correlate to the expected case that we discussed on Exhibit 97 for identification?

A. I wouldn't characterize it as a correlation in that technical sense. It's a projection that they made looking at different bills. The approach they used is slightly different, but they developed what they call for this projection an expected case.

Q. Okay. And maybe it's my choice of words. Is this the closest thing we have in the new projection that would match the expected case in the previous projection?

A. Yes, as ICF has defined it, yes.

Q. If you can, can you compare the projections that are in the new case to the ones that were used in the old case?

A. I have. I have also compared other projections that they made a similar contest. I can say that the expected case is higher for this projection than it was in 2006. And when you adjust it, looking at it, it varies by year, but based on -- and going back Appendix F, it's roughly about 20 percent higher than the projection that ICF -- again, it's variable by year, but it is definitely higher.

Q. Would it be possible to prepare as a late-filed exhibit a new Appendix F for your scenarios that utilizes the new expected case as opposed to the older one?

A. Another Appendix F could be generated using the new information in a manner similar to what was done in 2006, so it could be essentially that as a basis. Again, there would have to be some thought as well as projections beyond 2030, because the 2006 and the 2007 stop at 2030.

Q. Let me ask this. If we asked to you prepare a new exhibit or Appendix F and stop it at 2030, then you wouldn't have that extra judgment that's necessary,

would you?

A. No. That would be a calculation.

Q. And would that be confidential? Could you prepare a non-confidential new Appendix F reflecting the new forecast compared to the older one that's in there now?

MR. ANDERSON: I would like to speak to that, because I don't know --

CHAIRMAN CARTER: Mr. Anderson, you're recognized. Mr. Anderson.

MR. ANDERSON: Thank you, Chairman Carter. The ICF document belongs to them, so anything we do with it that goes into the public record we have to run back by them. On confidentiality points, they've been very good in terms of material thus far, but I would just ask that this witness not be asked to commit to ICF. We would communicate if there's any work like that to do.

CHAIRMAN CARTER: Well, you attorneys can work on that.

MR. BECK: That's fine. I have no problem with that. What I would like to request is a late-filed exhibit where through 2030, it matches what's contained in Appendix F, but it uses the new information. And I guess whether it's confidential or not, we'll just find out later.

CHAIRMAN CARTER: Mr. Anderson, do you think you'll be able to accommodate?

MR. ANDERSON: If I could ask Mr. Kosky -- if we were to do that, we would like to do that while the record is open in the case. Is that something that can be done in the next day?

THE WITNESS: It probably could, as, you know, the expected, although you would also have to calculate in the same manner, because Appendix F had a range of costs, since no legislation has yet been passed. There would, in my judgment, have to be an equivalent four different scenarios projected to 2030 to sort of match up to what was done previously on Appendix F, sort of an apples-to-apples kind of comparison.

MR. ANDERSON: We would have no problem doing that. It's just a question of time and getting it done by close of the gavel tomorrow.

CHAIRMAN CARTER: One moment, Commissioner. Let me kind of think this through here. Ms. Helton, we need to pick your brain.

MS. HELTON: I'm not sure how good it is, but you can try.

MR. ANDERSON: I'm sorry. May I speak, please?

My colleague just suggested a good idea, which

is, if the parties agree to stipulate admissibility of the late-filed exhibit into the record, then we can get it done as quick as possible, but we're not restricted by when the gavel comes down tomorrow. Does that work for people?

MS. HELTON: That works for me, Mr. Chairman, if it works for you.

CHAIRMAN CARTER: I think so, because I think that the OPC wants the document, and I think that FPL wants to present it, and I think staff wants to see it, and the Commissioners want to see it too. So that works fine for me.

MR. ANDERSON: Then we're happy to do that.

CHAIRMAN CARTER: Commissioner Skop.

COMMISSIONER SKOP: Thank you, Chairman Carter. Again, I've been trying to follow along with Mr. Beck, and I know that apparently the data is proprietary to ICF, but --

CHAIRMAN CARTER: One second, Commissioner, before you go further. Let's land the plane on the late-filed exhibit. All parties are in agreement with the stipulation on the late-filed exhibit; correct? Let's make sure we've got that together.

MR. BECK: I think so. I had a few questions I wanted to ask about the preparation of the exhibit.

COMMISSIONER SKOP: That's what mine goes to also.

CHAIRMAN CARTER: Yours goes to the preparation?

COMMISSIONER SKOP: Preparation and trying to avoid the confidentiality issue, real quick.

CHAIRMAN CARTER: Mr. Beck, do you mind just holding your questions for a moment? But we're all on board that this will be a late-filed exhibit, and we'll all accept it; right? Okay. So there won't be any misunderstanding.

Okay. Commissioner Skop, you're recognized.

COMMISSIONER SKOP: Thank you, Chairman Carter. Again, I sense that there is a proprietary data concern, as well as I'm having trouble discerning between the original forecast and the updated forecast just due to the fact that, without getting into the details, the scales are a little bit different, and then the -- it's in a different year per se. The updated one is a year plus one as opposed to the original one.

But I was wondering, is it possible, to help possibly avoid the proprietary data and confidentiality concerns, if you just plotted two curves with no axes on them and labeled one curve original and second curve updated, with again no axis? That way you could look at

the slope of the curves and kind of discern what's going on in reference to the original confidential documents, because again, what I'm looking at is essentially -- and Mr. Beck, this was a question to you that I was going to go with before we got into the confidentiality issue, but are you trying to discern that the slope of one curve is more gentle than the other? I guess that's what I'm trying to get at.

MR. BECK: I'm just trying to get a comparison. And my hope was that since Appendix F is not confidential, but it's based upon a confidential report, my hope is that we can get an exhibit that would be publicly available that would show the difference on a comparable basis.

COMMISSIONER SKOP: And that's what I was suggesting, merely if the parties -- and again, I don't know if this would cause a problem, but it seems to me that if you input a dataset with no labeling on the axes and plotted one curve against the other curve, at least that would provide some at least graphical indication of what the difference is between the two forecasts.

MR. BECK: But it wouldn't give us the numbers.

CHAIRMAN CARTER: Here's what I think. I think that Mr. Beck, this is his perspective here, and I

think as much as possible, we probably can accommodate. They've already agreed to do that, so it will probably make more sense, since we're talking about the four scenarios -- because that's really what you're talking about, the four scenarios, and you're looking at the numbers going out to 2030; correct?

MR. BECK: Yes.

CHAIRMAN CARTER: And I think that will probably be simpler. It will be simpler for me. You're talking about these scales. I can't tell if they're scales for a red snapper or a mullet. But I do think that the charts, the four scenarios make sense, because I can see the now, the expected, the high case, and it makes sense to me. So I think we'll try to accommodate Mr. Beck, because this is what you're trying to get to to fully explain your cross-examination and fully get OPC's record on the case, so I think that would probably be better. We'll just go with Mr. Beck's recommendation on this, Commissioners.

MR. ANDERSON: Commissioner Carter, we would be happy to do them both if that's all right for you all. That way you can have something in the public record that shows just as Commissioner Skop has directed and the actual data. If that works for you, we're pleased to do that for you.

MR. BECK: Yes. Just a few questions, Mr. Kosky.

CHAIRMAN CARTER: One second, Mr. Beck. Commissioner Skop.

COMMISSIONER SKOP: Thank you, Chairman Carter. And just a quick point of reference with respect to the scale. If the scales are similar for both datasets, then you don't need the axes, because what you're looking at is the difference between the curves, if we know the starting and ending points. I guess what's of interest to me is the change in forecasts as reflected by the slope of the curves. Thank you.

CHAIRMAN CARTER: I like the charts. This makes sense. You know, I'm from south Georgia. I like to keep it real simple. We've got four scenarios, four scenarios. And I think Mr. Beck has been going -- and it's agreed by the parties to do that. I see where you're going, because you're comparing the numbers in the datasets and comparing them with the different four cases, so it just kind of makes sense there. I mean, the other is fine if you want to do that to help the Commissioners look at it, but I'm with you on -- I understand exactly what you're saying here, so that works for me. So if you want to do more, Mr. Anderson,

that's excellent.

MR. ANDERSON: That's fine.

MR. BECK: So we'll label that Late-filed Exhibit 99?

CHAIRMAN CARTER: I beg your pardon?

MR. BECK: Have we labeled that as an exhibit, or could we? I would request that we do that.

CHAIRMAN CARTER: Do we need to do that, Ms. Helton, late-filed?

MR. BUTLER: You want me to give you a title?

CHAIRMAN CARTER: Ms. Helton, you're recognized.

MS. HELTON: Yes, I believe it's appropriate to go ahead and label it, and that way the record is clear.

CHAIRMAN CARTER: Okay. Exhibit Number 99. Mr. Beck, you want to give us a title?

MR. BECK: Recalculated Appendix F Using --

CHAIRMAN CARTER: How much about just Recalculated Appendix F? See, I'm all over the parking lot here. I've got it. Recalculated Appendix X -- F, F as in Frank. I sound like that when I get hungry.

(Late-filed Exhibit Number 99 was identified.)

CHAIRMAN CARTER: Mr. Beck, you're recognized.

MR. BUTLER: Excuse me, Chairman Carter.

CHAIRMAN CARTER: Yes, sir.

MR. BUTLER: Before we proceed with Mr. Beck's examination, staff has brought to our attention that while there is a motion for temporary protective order, a written one that was filed that covers the material that Mr. Beck distributed as Exhibit 97, there isn't one for the updated information that was distributed as Exhibit 98, and I would like to make an oral motion for temporary protective order that would certainly be on the same grounds and same basis as the motion that was made in writing with respect to the ICF report.

CHAIRMAN CARTER: No objection; right?

MR. BECK: No objection.

CHAIRMAN CARTER: Show it done.

MR. BUTLER: Thank you.

CHAIRMAN CARTER: Mr. Beck, you're recognized.

MR. BECK: Yes. Mr. Chairman, I have one other item, one last request about a late-filed exhibit. I just received the study earlier this afternoon, the whole study by ICF. I went through it and picked certain pages that I thought were relevant to the projections. I've discussed it with Florida Power & Light, and they're agreeable to producing the selection of pages as a late-filed exhibit. What I would like to do is request -- it would be excerpts from the new ICF

study, and the page numbers would be 8 through 13, 22 through 23, 68 through 79, 146 through 163, 177 through 181, and 191 through 193.

CHAIRMAN CARTER: And this would be Exhibit 100?

MR. BECK: Please.

MR. ANDERSON: Chairman Carter, FPL would have no objection that, and we would ask for the same temporary confidential protection that Mr. Butler has referred to.

CHAIRMAN CARTER: Okay. Without objection, show it done.

(Late-filed Exhibit Number 100 was identified.)

MR. BUTLER: And I have been advised by Ms. Helton that not only did I need to make the motion for a temporary protective order, which applies to allowing Office of Public Counsel to have access to the information, but since we are envisioning that these are going to become part of the record here, that I orally notify of our intent to request confidential classification, which would apply to you having them in your possession in the Clerk's Office.

CHAIRMAN CARTER: Okay. And that was a discussion I had with -- yes, we'll show that done.

MR. BECK: Thank you, Mr. Chairman. That's all I have of Mr. Kosky.

CHAIRMAN CARTER: That's all you have. Well, you know what? You must have a sun dial. You're right on time. I'll tell you, here's where we are. We're at a little over 6:00. We've got some information and some recalibrations and some things of that nature. We also -- Mr. Beck has completed his cross-examination. There may be some questions from the Krasowskis, there may be some questions from the Commissioners, and there may be some questions the staff. And we did extend in order to accommodate some og our friends and neighbors that are from out of town. But at this point in time, I see this as a good breaking point.

Commissioner Argenziano, are you still with us?

COMMISSIONER ARGENZIANO: Yes, Mr. Chair, I'm here.

CHAIRMAN CARTER: I think we're at a breaking point right now before we go with another lawyer on the witness, and you probably need to take some meds or have a cup of tea.

COMMISSIONER ARGENZIANO: Yes.

CHAIRMAN CARTER: We're going to break, just recess and start again tomorrow morning at 9:30. We are

in recess.

(Proceedings recessed at 6:10 p.m.)

(Transcript continues in sequence in Volume 7.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA:

COUNTY OF LEON:

I, MARY ALLEN NEEL, Registered Professional Reporter, do hereby certify that the foregoing proceedings were taken before me at the time and place therein designated; that my shorthand notes were thereafter translated under my supervision; and the foregoing pages numbered 577 through 806 are a true and correct record of the aforesaid proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor relative or employee of such attorney or counsel, or financially interested in the foregoing action?

DATED THIS 1st day of February, 2008.

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