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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 08_____-EI
FLORIDA POWER & LIGHT COMPANY

IN RE: FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR CONVERSION OF CAPE CANAVERAL PLANT

IN RE: FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR CONVERSION OF RIVIERA PLANT

DIRECT TESTIMONY & EXHIBITS OF:

RENE SILVA

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF RENE SILVA

DOCKET NO. 08_____-EI

APRIL 30, 2008

INTRODUCTION AND CREDENTIALS

Q. Please state your name and business address.

A. My name is Rene Silva. My business address is 9250 West Flagler Street, Miami, Florida 33174.

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

A. I am employed by Florida Power & Light Company (FPL or the Company) as Senior Director, Resource Assessment and Planning (RAP).

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

A. I manage the RAP group, the department that is responsible for developing FPL's integrated resource plan (IRP) and other related activities, such as developing system production cost projections for various generation capacity alternatives, analyzing demand side management (DSM) programs, and negotiating and administering wholesale power purchase agreements (PPAs).

Q. Please describe your educational background business experience.

A. I graduated from the University of Michigan with a Bachelor of Science Degree in Engineering Science in 1974. From 1974 until 1978, I was

employed by the Nuclear Energy Division of the General Electric Company in the area of nuclear fuel design. While employed by General Electric, I earned a Masters Degree in Mechanical Engineering from San Jose State University in 1978.

I joined the Fuel Resources Department of FPL in 1978, as a fuel engineer, responsible for purchasing nuclear fuel. While employed by FPL, I earned a Masters Degree in Business Administration from the University of Miami in 1986. In 1987 I became Manager of Fossil Fuel, responsible for FPL's purchases of fuel oil, natural gas and coal. In 1990, I assumed the position of Director, Fuel Resources Department, and in 1991 became Manager of Fuel Services, responsible for coordinating the development and implementation of FPL's fossil fuel procurement strategy. In 1998, I was named Manager of Business Services in the Power Generation Division (PGD). In that capacity, I managed the group that is responsible for coordinating (a) the development of PGD's long-term plan for the effective and efficient construction, operation and maintenance of FPL's fossil generating plants, (b) the preparation of PGD annual budgets and tracking of expenditures, and (c) the preparation of reports related to fossil generating plant performance. On May 1, 2002, I was appointed to my current position.

Q. Are you sponsoring any exhibits in this case?

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

Exhibit RS-1	Summary of Benefits of Conversion of FPL's Cape Canaveral Plant and Riviera Plant
Exhibit RS-2	FPL's Flexibility to Incorporate Increased DSM and Renewable Resources into Its Resource Plan
Exhibit RS-3	Calculation of Reserve Margin in 2014
Exhibit RS-4	Example Showing why a 15% Reserve Margin Reliability Criterion Is Inadequate to Ensure Reliable Service

PURPOSE

Q. What is the purpose of your testimony in this proceeding?

The purpose of my testimony is to support FPL's request that the Florida Public Service Commission (Commission):

(1) Grant affirmative determinations of need for (a) the conversion of FPL's Cape Canaveral Plant (Canaveral) to an advanced combined cycle unit located at the same Canaveral site, to be renamed Cape Canaveral Energy Center (CCEC), with a nominal summer peak capability of 1,219 megawatts (MW) and a targeted completion date of June 2013, and (b) the conversion of FPL's Riviera Plant (Riviera) to an advanced combined cycle unit located at the same Riviera site, to be renamed Riviera Beach Energy Center (RBEC), with a nominal summer peak capability of 1,207 MW and a targeted completion date of June 2014; and

(2) Grant FPL's requests for exemption from the Commission's Bid Rule, as they pertain to the requests for determinations of need for the conversions of Canaveral and Riviera.

Q. Although you have analyzed and presented the proposed plant conversions of Canaveral and Riviera together as a resource option, would either project be worth pursuing on its own merits?

A. Yes. As discussed throughout FPL's filing, these conversion projects combined will produce enormous customer benefits in the form of hundreds of millions of dollars in savings and millions of tons in reduced carbon dioxide (CO_2) emissions, as well as significant reductions in other emissions. But either of these plant conversions on its own provides significant benefits compared to a "no conversion" plan, independent of the other plant conversion and thus could, and does, stand on its own merits. Each conversion, of course, will need separate Site Certification Approval. For that reason, it is important that the Commission grant affirmative determinations of need for the conversions of Canaveral and Riviera that are separate and independent of one another.

Q. What do the proposed conversions of Canaveral and Riviera involve?

A. The proposed conversions consist of removing from service the existing 792 MW (summer rating) of generating capacity at Canaveral and replacing it with a 1,219 MW (nominal summer rating) 3x1 G combined cycle unit at the same CCEC site by June of 2013, and similarly removing from service the existing 565 MW (summer rating) of generating capacity at Riviera and replacing it

with another 1,207 MW (nominal summer rating) 3x1 G combined cycle unit at the same RBEC site by June of 2014.

Converting the existing Canaveral and Riviera steam generating plants into new, advanced, cleaner generation will produce energy much more efficiently beginning by 2013 and 2014. These conversions will transform 1,357 MW of much less efficient oil and gas-fueled steam generation into more than 2,400 MW of highly efficient, state-of-the-art, environmentally sensitive advanced combined cycle units.

Q. **How is your testimony organized?**

A. My testimony consists of 6 sections. Section 1 outlines FPL's request before the Commission regarding each of the proposed plant conversions. Section 2 introduces FPL's witnesses. Section 3 describes the resource plans used by FPL in the analysis related to the conversion of Canaveral and Riviera. Section 4 describes the projected benefits associated with the conversion of Canaveral and Riviera by 2013 and 2014, respectively, and explains why FPL concluded that these plant conversions constitute the best, most cost-effective self-build alternative to meet FPL's capacity needs in that period. Section 5 discusses the results of the evaluation of FPL's proposed conversion of Canaveral and Riviera compared to market proposals received in February, 2008, which confirm that the proposed plant conversions provide the best, most cost-effective resource to meet FPL customers' needs through 2014, and explains why FPL's request for an exemption from the Commission's Bid

Rule should be granted. Section 6 presents the significant adverse consequences FPL and its customers would face if the Commission does not grant affirmative determinations of need for these plant conversions, accompanied with Commission approval to proceed with the conversions.

I. FPL'S REQUEST FOR COMMISSION APPROVALS

Q. Please explain the relief FPL seeks in this proceeding.

A. FPL seeks from the Commission affirmative determinations of need for the conversion of Canaveral, and for the conversion of Riviera, with projected completion dates of June 2013 and June 2014, respectively.

FPL's request for affirmative determinations of need for these two plant conversions is the culmination of an extensive evaluation designed to identify the best, most cost-effective alternatives available to meet FPL's resource need through 2014, as the next step in FPL's resource plan after the addition of West County Energy Center Unit 3 (WCEC 3) in 2011. FPL's evaluation began with FPL's assessment of its customers' future generation capacity needs after all cost effective additional DSM measures and renewable resources are considered. FPL then compared the proposed plant conversions against a different self-build alternative that did not involve the conversion of existing plants. This comparison resulted in the selection of the proposed plant conversions as the most cost-effective self-build option available to FPL. FPL

also compared the proposed plant conversions against recent market proposals for generation capacity. The results of this analysis confirmed that the proposed plant conversions are the best alternative available to FPL to meet resource needs through 2014.

Both the addition of WCEC 3 in 2011, the determination of need for which is currently pending before the Commission, and the conversion of Canaveral and Riviera by 2013 and 2014, respectively, are essential components of FPL's strategy to provide the new generating capacity needed to meet the growing resource needs of its customers through 2017, as well as to reduce emissions of CO_2 and other substances in the most cost-effective manner. These capacity additions are necessary in order for FPL to continue to deliver electricity at a reasonable cost, while complying with anticipated environmental requirements.

Q. How much generating capacity will be needed to meet FPL customers' needs through 2017?

A. Based on FPL's load forecast revised in 2008, FPL projects that between 2011 and 2017 FPL will have to add about 4,844 MW of new generation capacity, or 3,625 MW of new generation capacity after the addition of WCEC 3 in 2011, over and above what will be saved through FPL's extensive DSM and renewable resource efforts, to keep pace with population and economic growth in Florida.

Q. Why is FPL proposing to convert Canaveral and Riviera?

A. Because the resource plan that includes the conversion of Canaveral and Riviera by June of 2013 and June of 2014, respectively, the Resource Plan with Conversions, which was developed to meet the reliability criteria previously approved by the Commission and thus ensure reliable electric service to FPL's customers beginning in 2013, will result in significantly greater benefits to FPL's customers than the other resource plans that FPL has evaluated. These benefits fall in five categories:

- First, as shown in Exhibit SRS-6 attached to the testimony of FPL witness Sim, FPL's plan with the proposed plant conversions, the Resource Plan with Conversions, will result in customer savings of about $457 million, cumulative present value of revenue requirements in 2008 dollars (CPVRR) compared to the Resource Plan without Conversions, a plan that would add a new FPL-built combined cycle generating unit at a Greenfield site in 2014, instead of the Canaveral and Riviera conversions. The magnitude of the savings that would result from these plant conversions would grow to $890 million (CPVRR) with a high environmental compliance costs, and would grow further to $1,221 million (CPVRR) with high natural gas cost and high environmental compliance costs.

The Resource Plan with Conversions will also result in customer savings of more than $480 million (CPVRR) compared to the lowest cost alternate resource plan that includes one or more market proposals as capacity additions in 2013 and/or 2014, instead of the Canaveral and Riviera conversions.

- Second, replacing the existing Canaveral and Riviera plants with the two clean, highly efficient, gas-burning CCEC and RBEC by 2013 and 2014, respectively, will enable FPL to reduce system air emissions during the life of the converted units as follows: CO_2 by about 15.7 million tons, sulfur dioxide (SO_2) by 60,300 tons, and nitrogen oxide (NO_x) by 55,300 tons, compared to the Resource Plan without Conversions. These emission reductions will be accomplished while saving FPL's customers about $457 (CPVRR). As a result, these plant conversions will contribute significantly toward achieving the CO_2 emission targets reflected in Governor Crist's Executive Order 07-127, and whatever specific legal requirements may be implemented in the future as a result of that Order or pursuant to federal or state law.

- Third, FPL's system average heat rate, the measure of system fuel efficiency, will improve to 8,040 Btu/kWh in 2015 after the conversions, compared to 8,127 Btu/kWh under the Resource Plan

without Conversions, a difference of 1.07%. As a result, the plant conversions would reduce FPL's use of natural gas and fuel oil. For example, natural gas use in 2013 through 2017 alone would be reduced by about 10.6 million MMBtu and fuel oil use would be reduced by about 7.5 million barrels, compared to the Resource Plan without Conversions. This fuel efficiency gain will help offset, in part, the effects of projected rising fuel prices in the future.

- Fourth, some of the projected cost components for the conversion of Canaveral and Riviera present far less uncertainty for FPL and its customers, compared to the costs of building generation at a new Greenfield site. The economic analysis results of the proposed plant conversions already reflect the fact that costs related to land, water and transmission at an existing plant site are significantly lower than they would be at an undeveloped Greenfield site. Moreover, the magnitude of these costs is much more uncertain for a Greenfield site (i.e., actual costs at a Greenfield site may well be significantly higher than currently projected), a fact that is not reflected in the results of the analysis. Therefore, the benefit to FPL's customers of converting Canaveral and Riviera could be significantly greater than the $457 million (CPVRR), reported above.

- Fifth, the proposed conversions of Canaveral and Riviera will enable FPL to increase system generation that is required to maintain system reliability and system fuel efficiency to reduce fuel costs without using new land and without increasing the allocation of water resources to plant use. Converting Canaveral and Riviera will also avoid the need for new rights-of-way for transmission facilities. In addition, because the new CCEC and RBEC can receive backup fuel delivered via waterborne transport it will contribute to much greater system reliability than would be the case with inland plants that must rely solely on truck deliveries.

In summary, the proposed conversions of Canaveral and Riviera by 2013 and 2014, respectively, are the best, most cost-effective alternatives available as part of FPL's strategic resource plan to reliably meet the growing electricity needs of FPL's customers in this time frame, while also reducing CO_2 emissions. The benefits of the plant conversions discussed above are summarized in Exhibit RS-1, attached to my testimony.

Q. Do new DSM and renewable resources diminish the beneficial effects of the proposed plant conversions?

A. No. There is no currently identified additional cost-effective DSM not already reflected in FPL's resource plan for the period through 2017. Therefore, additional cost-effective DSM cannot be relied on to contribute to system reliability, and there is no evidence to suggest that additional DSM could

provide economic benefits to FPL's customers that could in any way diminish the unquestionable benefits provided by the conversion of Canaveral and Riviera.

Similarly, there are no significant cost-effective renewable resources identified that could provide any significant amount of firm generating capacity in the period through 2017. Therefore, renewable capacity cannot be counted on to contribute to system reliability, as does the conversion of Canaveral and Riviera. Furthermore, any future renewable resources that could cost-effectively provide energy (but not firm capacity) would not compete with the benefits described above that will be provided by the proposed plant conversions, but rather would complement those benefits.

Further, FPL's projected growth in load is such that there remains ample opportunity for additional DSM and renewable capacity to play an even more important role than it does today in helping to meet the ever increasing needs of Florida's growing population and economy for reliable electric service.

Q. Please summarize your conclusions regarding the conversions of Canaveral and Riviera.

A. In summary, without the conversions of Canaveral and Riviera by 2013 and 2014, respectively, FPL's customers would be served by a less efficient, much more costly and less environmentally sensitive system. Also, without the proposed plant conversions FPL would not be able to make such a major

contribution towards achieving compliance with any CO_2 emission limit that may be imposed by future laws and regulations, nor to achieve significant CO_2 emission reductions in such a highly cost-effective way for its customers. These factors lead to the conclusion that the conversions of Canaveral and Riviera by 2013 and 2014, respectively, are needed to meet the system reliability criteria considered essential by FPL and previously approved by the Commission, and thus enable FPL to provide adequate electricity at a reasonable cost to FPL's customers.

Q. Does the 2008 load forecast used by FPL in this proceeding include the Lee County Electric Cooperative (Lee County) load?

A. Yes. About 200 MW of Lee County load is included in 2010 through 2013. The full Lee County load is included beginning in 2014.

Q. How will the addition of the Lee County load affect the timing of FPL's resource needs?

A. The addition of the Lee County load does not affect the timing of FPL's resource needs until 2014. This is because in 2010 through 2013 FPL's incremental capacity commitment related to the Lee County load adds only about 200 MW to FPL's peak load, which can be met with the new resource additions that have already been approved by the Commission and have been reflected in FPL's resource plan. Consequently, FPL's resource plan does not reflect any adjustment due to the Lee County load addition until 2014.

Q. Does FPL's recommendation to convert Canaveral and Riviera depend on the addition of the Lee County load?

A. No. The proposed plant conversions will provide the significant benefits listed above, regardless of the Lee County load addition. The precise amounts of savings to customers, emission reductions, efficiency gain, and oil and gas use reductions would be somewhat different if FPL were not serving the Lee County load, but these benefits would still be equally compelling. Therefore, FPL would be requesting from the Commission approval for the conversion of Canaveral and Riviera even without the Lee County load.

Q. Is it reasonable to reflect the Lee County load in FPL's resource planning process?

A. Yes. FPL has entered into an obligation to serve the Lee County load and, subject only to regulatory approval, the Company is committed to meet that future need. Therefore, FPL has reflected the Lee County load in its resource planning process, especially because of the very long lead time required to complete the process from identifying a future capacity need to cost-effectively placing new generation capacity in service to meet that need in an environmentally sensitive manner.

Q. What would FPL's cumulative projected resource need through 2017 have been absent the Lee County load?

A. Without the Lee County load FPL would need to add 3,665 MW of new generation capacity instead of the 4,844 MW reported above in the period through 2017. After adding WCEC in 2011, FPL would still need 2,446 MW

of new generation capacity by 2017. Therefore, the net capacity addition (1,069 MW) provided by the conversion of Canaveral and Riviera would still be needed, and it would provide about 44% of this remaining 2,446 MW of capacity to meet its customers' demand for electricity through 2017 even in this reduced load situation. More importantly, the conversion of Canaveral and Riviera would still be needed to provide the many significant customer benefits described above.

Q. Are the conversions of Canaveral and Riviera the most cost-effective alternatives to meet FPL's customers' needs for new resources?

A. Yes. As explained in the testimonies of FPL witnesses Sim and Taylor, the conversions of Canaveral and Riviera are the best, most cost-effective self build options available to meet the needs of FPL's customers. Specifically, these proposed plant conversions were determined to be the best, most cost-effective alternatives compared to both another self-build option, and alternative portfolios constructed using market proposals.

Furthermore, neither of these no-conversion alternatives offered any non-economic advantages over the conversions of Canaveral and Riviera. Therefore, FPL has established that the conversions of Canaveral and Riviera by 2013 and 2014, respectively, are by far the best, most cost-effective alternatives to meet FPL customers' needs for additional resources in that time period.

Q. Will FPL continue to evaluate the type of equipment to be used for the conversions of Canaveral and Riviera?

A. Yes. As explained in the testimony of FPL witness Tindell, FPL will consider combustion turbines (CT) with improved characteristics relative to those of the "G" CTs, should such technology become available. Although the currently projected benefits of this unique opportunity presented by the conversions of Canaveral and Riviera, which are based on the use of "G" gas turbines, are very significant, FPL will continue to evaluate the possible use of CTs projected by manufacturers to be even more efficient than the "G" technology, to determine whether even greater benefits could be achieved.

Q. If FPL were to select CTs other than the "G" CTs assumed in FPL's analysis, how does FPL propose to address such selection as it pertains to the determinations of need requested by FPL in this proceeding?

A. FPL requests that, as part of the Commission's Order granting affirmative determinations of need for the conversions of Canaveral and Riviera, the Commission provide that its determinations are not predicated on the use of a particular CT, thus ensuring that FPL has the flexibility through its negotiations and analyses to select the CT that best meets customers' needs in terms of reliability and cost-effectiveness. Of course, FPL would make that decision only if the projected cost to FPL's customers related to the conversions of Canaveral and Riviera measured in terms of system CPVRR would be lower as a result of the use of an alternate CT than with the use of "G" CTs, regardless of any changes in the capital costs attributable to the

choice of technology. In the event of its selection of something other than the "G" CTs subsequent to the Commission having granted determinations of need for the projects, FPL would propose to make an informational filing to the Commission that documents the projected comparative cost advantage of the alternate CT technology chosen.

II. INTRODUCTION OF FPL WITNESSES

Q. How many witnesses are supporting FPL's petition through direct pre-filed testimony?

A. Six other witnesses are submitting direct testimony.

Q. Please summarize the topics addressed in the testimony of each of these witnesses.

A. FPL witness Dr. Rosemary Morley presents FPL's load forecasting process, discusses the methodologies and assumptions used in that process, and presents FPL's resulting load forecasts, which have been used in FPL's IRP process, and were used in analyses performed related to the proposed plant conversions.

FPL witness Dr. Steven R. Sim describes FPL's IRP process, presents the need for new resources to meet customers' demand for electricity in 2008 through 2017, concludes that DSM alone cannot meet this need and explains the analyses FPL performed to evaluate the conversion of Canaveral and

Riviera compared to other self-build alternatives. FPL witness Sim presents the results of FPL's analyses, and explains his conclusion that based on FPL's evaluation, the proposed plant conversions constitute the best choice for FPL's customers.

FPL witness Alan Taylor of Sedway Consulting describes his role as an Independent Evaluator of FPL's proposed plant conversions, of FPL's Greenfield self-build option and of comparable generation portfolios that include generating capacity proposals received by FPL in February, 2008. FPL witness Taylor also explains the process he followed and the tools he used to conduct his economic evaluation, presents the results of that evaluation, and explains his conclusion that the conversions of Canaveral and Riviera are the most cost-effective alternatives to meet FPL's resource need.

FPL witness Heather Stubblefield describes the transportation plan to deliver natural gas and light oil to the new converted Canaveral and Riviera plant and testifies to the ready availability of natural gas for those converted plants, as part of FPL's overall system. FPL witness Stubblefield also supports the fuel price forecast used in FPL's economic analysis of the proposed conversions and other generation alternatives.

FPL witness Kennard Kosky presents the environmental compliance cost forecasts for SO_2, NO_x, mercury (Hg), and CO_2 utilized by FPL in its analysis

of the proposed plant conversions and available generation alternatives. In addition, FPL witness Kosky discusses the magnitude of future reductions in emissions that will be realized through the conversions of Canaveral and Riviera.

FPL witness Cindy Tindell presents the engineering details of FPL's proposed plant conversions, which involve the removal of the existing facilities at Canaveral and Riviera, and the construction of two new state-of-the-art 3x1 combined cycle (CC) units, one at CCEC and the other at RBEC. Included in FPL witness Tindell's testimony are the cost and performance specifications of the proposed conversions, which are reflected in FPL's economic analyses.

III. RESOURCE PLANS USED IN FPL'S ANALYSIS

Q. Please outline how FPL determined its generation capacity needs through 2017 as part of its IRP process.

A. As explained by FPL witness Morley, in early 2008 FPL reviewed and revised its peak electricity demand forecast to reflect recent growth trends. FPL's current peak demand forecast was used in its generation reliability assessment using the two reliability planning criteria previously approved by the Commission. One planning criterion consists of maintaining a 20% reserve margin; the other criterion consists of demonstrating that the Loss of Load

Probability (LOLP) in FPL's system will remain lower than 0.1 days per year during the planning period. FPL witness Sim discusses the reliability criteria.

Q. What was the result of FPL's generation reliability assessment in 2008?

A. FPL's reliability assessment completed in early 2008 determined that due to load growth and the expiration of power purchases, FPL's total resource need in 2011 through 2017 is 6,490 MW. After considering all cost-effective DSM increases in this period, all projected cost-effective renewable resources, and the uprates to FPL's existing nuclear units already approved by the Commission, FPL will still need to add 4,844 MW of new generation capacity in this period. After adding WCEC 3 FPL will still need 3,625 MW by 2017 in order to continue to meet its 20% reserve margin. FPL also determined that adding the new generating capacity required to meet the 20% reserve margin criterion as specified above would enhance and further ensure FPL's ability to meet the 0.1 days per year LOLP criterion during that period.

Q. What amount of cost-effective DSM is available during FPL's planning period?

A. As can be determined from column 5 in Exhibit SRS-2 attached to FPL witness Sim's testimony, FPL projects that it will add about 884 MW (summer MW at the generator) of new DSM in the years 2011 through 2017, sufficient to avoid about 1,061 MW of new generating capacity in that planning period based on FPL's 20% reserve margin requirement. However, this increase in DSM has already been reflected in the calculation FPL has performed, which identified a need for 4,844 MW of new generation capacity

in 2011 through 2017, above the 1,061 MW avoided by new DSM, as well as renewable purchases and nuclear uprates. It is important to note from these figures that without DSM FPL's total generation capacity need in this period would be 5,905 MW, and that the 1,061 MW avoided through DSM additions cover almost 18% of that total capacity need.

It is also important to note that, as indicated by FPL witness Sim, through 2007 FPL and its customers have avoided the need for 4,753 MW of generation capacity as a result of cost-effective DSM programs, and that in 2008 through 2010 DSM increases will be sufficient to avoid another 454 MW of generating capacity. Added to the 1,061 MW of capacity that will be avoided by DSM additions in 2011 through 2017, FPL and its customers will have avoided a total of 6,268 MW of generating capacity by 2017 as a result of DSM programs, equal to about 21% of the projected amount of FPL-owned generating capacity (almost 30,000 MW) in operation by 2017.

Q. Is there DSM adequate to avoid or significantly mitigate the need for the proposed plant conversions?

A. No. At present FPL has not identified any additional cost-effective DSM beyond that already reflected in the need calculations. Therefore, considering the need for resources through 2017, DSM is not available to avoid or indefinitely defer the need for the proposed plant conversions. In fact, even after the addition of all the currently projected DSM increases and generation capacity additions already reflected in FPL's resource plan, and after adding

WCEC 3 in 2011, and after the proposed plant conversions FPL would still need to add about 2,556 MW of new generating capacity by 2017.

As FPL witness Sim discusses in his testimony, FPL will continue to evaluate DSM opportunities as part of its planning process, and as part of the Commission's upcoming DSM Goals proceeding. To the extent that FPL were to identify and implement additional cost-effective DSM opportunities in the future, such additional DSM would help reduce part of the 2,556 MW of currently projected generation capacity need through 2017 that remains after the addition of WCEC 3 in 2011 and the conversions of Canaveral and Riviera by 2013 and 2014, respectively. This remaining projected need of 2,556 MW, which is shown on Exhibit RS-2 as being met by "Natural Gas and/or Other Resources," is determined by subtracting the capacity provided by WCEC 3 (1,219 MW) from the total need for new generating capacity (4,844 MW), then adding the existing capacity at Canaveral and Riviera (1,357 MW, combined) that will be removed from service, then subtracting the new capacity provided by the new CCEC and RBEC (2,426 MW, combined).

Q. What amount of cost-effective generation capacity from renewable resources is available during FPL's planning period?

A. FPL's resource plan already includes (in the future) all the existing firm renewable generating capacity that FPL is currently purchasing, including about 98 MW from contracts that expire and FPL will try to renew by 2010, and another of about 45 MW that expires by 2011, which FPL will try to

renew. FPL's resource plan also reflects 126 MW of new capacity from renewable resources based on what FPL believes is a reasonable estimate of cost-effective proposals for firm renewable generating capacity it will receive by June 2008 in response to FPL's April 2008 request for proposals for renewable generation and FPL's own renewable development efforts. At present FPL has not been able to identify any other cost-effective sources of firm renewable generating capacity.

Q. Is there adequate firm generating capacity from renewable resources to avoid or significantly mitigate the need for the proposed plant conversions?

A. No. As explained above, all the existing and new potential cost-effective firm generating capacity from renewable resources that would become available during the planning period has already been reflected in FPL's resource plan. Therefore, neither the need for nor the benefits provided by the proposed plant conversions are diminished by DSM or renewable resources.

Q. How did FPL select the conversions of Canaveral and Riviera by 2013 and 2014, respectively as FPL's most cost-effective self-built alternatives to meet FPL's need in that period?

A. FPL compared a resource plan that meets FPL's reliability criteria and includes the proposed conversions of Canaveral and Riviera by 2013 and 2014, respectively, the Resource Plan with Conversions, to an alternate plan that would also meet FPL's reliability criteria, but would instead add a new 3X1 G CC unit at a Greenfield site in 2014 (and make no changes to FPL's

existing generation portfolio), the Resource Plan without Conversions. As described below and explained in greater detail by FPL witness Sim, the results of this analysis confirmed that the proposed plant conversions constitute the best alternatives to maintain system reliability for FPL's customers.

Q. Please indicate how much new generating capacity would be added to FPL's system in each of the resource plans used in FPL's economic analysis of the proposed plant conversions?

A. The resource plans FPL utilized are described in the testimony of FPL witness Sim and tabulated in Exhibit SRS-3 attached to FPL witness Sim's testimony. The Resource Plan with Conversions adds 6,372 MW of total net long-term resources to meet a projected need of 6,490 MW in 2011 through 2017. The alternative Resource Plan without Conversions differs from the first primarily in that it does not remove 1,357 MW of existing capacity at Canaveral and Riviera by 2011 and, instead of adding 1,219 MW of capacity in 2013 and 1,207 MW in 2014, it adds 1,219 MW of new capacity in 2014. This alternate Resource Plan without Conversions would add 6,522 MW of new long-term resources in 2011 through 2017.

Q. Is it possible that the resource additions, after 2014, reflected in these resource plans would change in the future?

A. Yes. A utility's resource plan is not, and cannot be, static. As indicated earlier in my testimony, FPL is evaluating self-build renewable resource opportunities, pursuing additional renewable purchases and continuing to

evaluate cost-effective DSM opportunities. The outcome of these efforts could well change FPL's resource plan beyond 2014. However, such a possibility has no bearing on FPL's recommendations with regard to the conversions of Canaveral and Riviera.

The objective of the generation additions reflected in the resource plans presented by FPL witness Sim is to provide a reasonable, neutral backdrop against which the proposed conversions of Canaveral and Riviera in 2013 and 2014, respectively, can be fairly compared to another comparable self-build generation capacity alternative that FPL could use in place of the proposed plant conversions as part of the resource strategy to meet its capacity needs through 2017.

At this time, FPL has not committed to pursuing the two additional gas-fueled combined cycle units that would be added in 2016, after the addition of WCEC 3 and the proposed conversions of Canaveral and Riviera. Therefore, as FPL's projected need for new resources in the future changes, and as other resource alternatives such as additional cost-effective DSM, or additional renewable resources (purchased or self-build), or other alternatives become available, and as factors that affect some or all of the resource alternatives such as new legislation or regulations requiring increased use of renewable resources, change, FPL's resource plan would be modified. Nevertheless, the resource plans utilized in FPL's analyses reflect reasonable choices for

meeting FPL's needs through 2017, based on what is known today. Therefore, they provide appropriate frames of reference within which to assess the customer benefit of the conversions of Canaveral and Riviera.

Q. Is adding WCEC 3 in 2011, as has been proposed by FPL in the ongoing need determination proceeding for WCEC 3, necessary for FPL to proceed with the conversion of existing plants for 2013 and 2014?

A. Yes. In order to do the work required to convert existing steam plants to new, cleaner, highly efficient generation, it will be necessary to remove from service generation about 1,357 MW of existing generation capacity at Canaveral and Riviera by 2011. Removing from service this quantity of generating capacity by 2011 would reduce FPL's reserve margin to about 16%, well below the 20% reserve margin level that the Commission and FPL agree is necessary to ensure reliable service. Such a low planning reserve margin would be inadequate to ensure reliable service because it would consist of only 6% generation reserve and 10% DSM reserve. Adding the 1,219 MW of WCEC 3 in June of 2011 would offset the loss of generating capacity from the existing plants being removed from service and would restore the reserve margin to just above 21%, with 11% generation reserve. FPL cannot proceed to remove from service the existing generation at Canaveral and Riviera without offsetting these capacity reductions in 2011. Therefore, without WCEC 3 in 2011, FPL would have to obtain some other capacity alternative to maintain system reliability if it were to proceed with the cleaner, high efficiency conversion of existing plants. However, as has

been explained in FPL's testimony presented in support of its request for a determination of need for WCEC 3, because, whether with or without the proposed plant conversions, adding WCEC 3 in 2011 is the most economic resource available to FPL in 2011 through 2013, it would not be beneficial to FPL's customers to implement any other alternative. Therefore, adding WCEC 3 in 2011 is necessary and appropriate if FPL is to proceed with the cleaner, high efficiency conversion of Canaveral and Riviera and continue to ensure system reliability.

Q. Is the 20% reserve margin planning criterions appropriate for use in FPL's IRP process?

A. Yes. The 20% reserve margin reliability criterion utilized by FPL in its integrated resource planning process has been reviewed and approved by the Commission and it is appropriate and necessary to ensure reliable service for FPL's customers.

Q. Could FPL lower the planning reserve margin reliability criterion to 15% and still provide reliable service to its customers?

A. No. A 15% reserve margin is not adequate to ensure reliable service in FPL's system.

Q. How was FPL's current reserve margin criterion of 20% established?

A. Prior to 1999 FPL used a reserve margin criterion of 15%. It should be noted that FPL's reserves at that time consisted more heavily of generation reserves, with load management contributing less than half of what it will provide in 2014. However, the Commission initiated in the late 1990s a proceeding to

determine what the appropriate reserve margin criterion should be to ensure reliability of electric service in the future, recognizing rapid increases in electric loads, the introduction and expansion of new technologies, and recognition that fuel supply interruptions could occur. After audits were performed by the Commission Staff, and after several stakeholders, including Florida's investor-owned utilities, presented their analyses and conclusions, all parties agreed that a 20% reserve margin for the investor-owned utilities was the appropriate level that would ensure reliability of service in the utilities' systems, as well as in peninsular Florida. These investor-owned utilities stipulated that they would agree to use a 20% reserve margin as one of the reliability criteria for resource planning, in addition to a probabilistic criterion such as LOLP, beginning in the summer of 2004. This stipulation was approved by the Commission.

Q. Why is a 15% reserve margin not adequate to ensure reliability in FPL's system?

A. Because a 15% reserve margin, as used in the resource planning process, would provide a level of generation reserves that would be too low to offset the consequences of commonly occurring differences between the assumptions used in FPL's long term plan and actual operating conditions, especially if those differences occur at times when FPL has scheduled planned maintenance outages for one or more generating units.

Q. What differences are you referring to?

A. There are a number of such differences, as one would expect when recognizing that six or more years can separate forecasts that are used to make resource decisions from actual conditions at the time the resource plan is implemented. To illustrate my point I will provide a numerical example that addresses two differences: one is the point in time during the year in which the peak load actually occurs, and the other is the difference between the actual magnitude of the peak load in a future year (2014) and the projected magnitude of the peak for that year that would have been forecasted six years earlier (2008).

Q. How will you present this illustration?

A. I will first use a calculation very similar to that presented in Exhibit SRS-2 attached to the testimony of FPL witness Sim to show, pursuant to the resource planning process FPL follows to determine future needs, how a projected reserve margin of 15% would be achieved for the summer of 2014. This calculation is presented in my Exhibit RS-3. The only difference between this calculation and that presented in SRS-2 is that the former includes sufficient firm generating capacity in FPL's portfolio to reach a reserve margin of 15%. The forecasted load for 2014 was developed in 2008 as part of FPL's IRP process. Column 3 shows the total projected capacity available in FPL's system in the summer of 2014 (27,502 MW). Column 4 shows the projected peak load in the summer of 2014 (26,576 MW). Column 5 shows the quantity of projected DSM available in the summer of 2014 (2,651 MW).

Column 6 shows the projected "firm" peak load; that is, that portion of the projected peak load that cannot be mitigated through the exercise of DSM. This projected "firm" peak load is equal to the projected peak load less the projected DSM, or 23,925 MW. It should be noted that this demonstrates that in its resource planning process FPL first considers all the cost-effective DSM as a resource before determining what additional supply-side resources are required.

Column 7 shows the projected generation reserves compared to the projected "firm" load. This projected generation reserve compared to projected "firm" peak load is equal to projected capacity available less projected "firm" peak load, or 3,577 MW. Column 8 shows the projected reserve margin that this projected generation reserve provides compared to the "firm" peak load; it is equal to the projected generation reserve against "firm" peak load divided by "firm" peak load, expressed as a percent. This is the reserve margin that is used in FPL's resource planning process to develop and compare plans that will provide a 20% reserve margin relative to "firm" peak load. In this case, however, the projected reserve margin against the projected "firm" peak load, after all the DSM is utilized is 15% in the summer of 2014. As column 9 shows, FPL would need to add 1,208 MW of additional firm capacity in order to meet the 20% reserve margin criterion.

Q. You indicated that the calculation above is consistent with FPL's resource planning process. How does FPL allocate resources to meet actual electric load?

A. In actual daily operations FPL dispatches its generation resources in economic order, with lowest cost generation first, to produce all the electricity its customers need. It is only if generation resources are insufficient to meet actual load that the load management portion of DSM is utilized. I am providing an example of the effect of having only 15% reserve margin in my Exhibit RS-4, page 1 of 2. For simplicity, my example assumes that all the DSM consists of load management. First, it is assumed that actual conditions in 2014 are the same as shown on Exhibit RS-3. In other words, the peak load is 26,576 MW and total capacity available is 27,502 MW. Therefore, FPL would be able to meet the load and have 926 MW of unused generation. It would also have 2,651 MW of unused DSM for total reserves of 3,577 MW. This is the same total of reserves as shown on column 7 of Exhibit RS-3, but note that only 926 MW are generation reserves. In other words, in actual operations, generation reserves are only about one fourth of total reserves, with DSM providing three fourths of the reserve. Another way to look at these results is that, in effect, accepting a 15% reserve margin criterion would result in generation reserves that actually provide less than 4% operational reserve margin. Applying the rest of the reserve margin, which is provided by DSM, requires partial curtailment of service to customers who subscribe to load

control. This is the situation that would exist in 2014 if all happens as was forecasted six years earlier, in 2008.

Q. How would a difference between the projected and actual date of a year's peak load affect FPL's ability to meet its customer's needs?

A. FPL's forecast typically projects that the summer peak load will occur in August and, at present, no plant outages for inspection and maintenance are planned during that month. However, the peak load can occur in June and July when such plant outages are planned. In fact, in the last 16 years the actual peak load day has occurred in August only 9 times. Therefore, it has been a fairly common occurrence that the peak day has occurred in June or July, instead of August.

Q. How would the actual peak day occurring in June of 2014 instead of August affect the results presented above, assuming FPL were to plan for a 15% reserve margin in 2014?

A. Typically, about 800 MW of generation capacity will be out of service for planned maintenance in the month of June. Therefore, if the projected peak for 2014 were to occur in June, instead of having 926 MW of generation reserves on the peak load day FPL would have only 126 MW of generation reserves. In other words, the operational reserve margin provided by generation resources in this situation would be not 4%, but only 0.5%.

Q. How would a difference between the actual and projected magnitude in the peak load affect FPL's ability to meet its customer's needs?

A. If the actual peak load in a particular year is significantly greater than had been projected at the time the resource plan was developed for that year as much as six years earlier, unless the reserves are adequate FPL would not be able to meet its customers' needs.

Q. What has been the average percent difference between the actual peak load and the peak load forecast developed six years earlier?

A. On average in the last four years the actual peak load has been 7.3% higher than had been projected six years before. As stated previously, FPL's resource plan that includes the proposed addition of WCEC in 2011 and the conversions of Canaveral and Riviera by 2013 and 2014, respectively utilizes FPL's most recent peak load forecast developed in 2008.

Q. How would your results above change if instead of the actual peak in 2014 occurring in August it occurred in June, and if the actual magnitude of the peak load were 7.3% higher than the forecast, consistent with the three-year average percent variance, and assuming that FPL plans for a 15% reserve margin in 2014?

A. The actual peak load in June of 2014 would be 28,516 MW, which would exceed by 1,814 MW the amount of generation capability of 26,702 MW. In other words, if "average" differences were to occur in only these two areas that affect FPL's ability to meet its customers' needs, based on a 15% reserve margin criterion FPL would be short of generation resources to serve its

customers and would be forced to exercise 1,814 MW of the DSM capability, or almost 70% of all DSM. In fact, FPL would then have zero generation reserves and would have only 821 MW of DSM left to address all other possible unexpected occurrences.

Q. Under these circumstances wouldn't FPL return to service all generation facilities that are scheduled for planned maintenance to meet the higher than projected peak load?

A. FPL would indeed try to bring as many of the resources as possible back in service. However, depending on the type of technology scheduled for planned maintenance, the type of maintenance activity to be performed or the stage at which the maintenance work is when there are indications that a significant peak load is likely, FPL may not be able to return generation to service quickly enough to meet the peak load requirement. It should be noted that as FPL continues to add advanced gas turbines to its system, there will be less and less flexibility regarding scheduling planned outages. For advanced gas turbine technology, inspections and maintenance must be performed on a strict schedule to avoid the risk of catastrophic technical failure.

Q. In your calculations above have you assumed that any unplanned generation or transmission outages would occur on the peak day?

A. No. The results provided above assume that all generation that is scheduled to operate on the peak day is operating at maximum capacity and that there are no transmission interruptions. Similarly, this calculation assumes that there are no fuel interruptions and that FPL is not providing emergency assistance

to other utilities. In other words, the calculations represented in these examples reflect perfect performance of all systems, with only commonly recurring differences between actual operating conditions and the forecast on which the resource plan is based. The results above indicate that even if everything in 2014 were to occur exactly as projected, generation reserves would only be adequate to mitigate the effect of a combination of unplanned outages and interruptions totaling up to 926 MW. To put this in perspective, FPL has more than 20 generating units with generating capacity greater than 400 MW, of which 9 have a generating capacity greater than 630 MW. Therefore, unplanned outages that could exceed 926 MW are not rare.

If the only deviation from the forecast is that the peak occurs in June when 800 MW of capacity is out of service for a planned maintenance outage, the resulting generation reserves of 126 MW would not be adequate to mitigate the effect of any unplanned outage except for one occurring in FPL's smallest peaking units. As can be seen, the 15% reserve margin criterion is not adequate to ensure reliable service.

Q. How would the results with the higher adjusted peak load occurring in June of 2014 change when FPL maintains a 20% reserve margin?

A. As shown in Exhibit RS-3, maintaining a 20% reserve margin would require total generation capacity to be 28,711 MW in 2014. As shown in Exhibit RS-4, page 2 of 2, this plan would result in available generating capacity of 27,911 MW (after accounting for the 800 MW out for planned maintenance in

June 2014) plus 2,635 MW of DSM for a total of 30,546 MW of resources against the higher adjusted total peak of 28,516 MW. In this situation FPL would be able to meet load demand, provided that it exercises 605 MW of DSM, leaving a DSM reserve of 2,030 MW to meet any other unexpected circumstance. It is important to note that even with a 20% reserve margin in 2014, the occurrence of ordinary differences between planned and actual peak load conditions such as those presented in this example could use up all generation reserves and about 23% of available DSM would have to be utilized. That leaves only 77% of the DSM reserves, and no generation reserves to offset all other unplanned occurrences, against which the reserve margin is intended to protect FPL's customers. For this reason FPL believes that maintaining a 20% reserve margin criterion for resource planning purposes is in the best interest of its customers.

Q. Is this example intended to demonstrate that FPL's 20% reserve margin criterion will always be the correct level of reserve margin to apply to resource planning?

A. No. This example shows that the Commission should dismiss any suggestion that a 15% reserve margin planning criterion would be adequate. The results above show that a 15% reserve margin reliability criterion is totally inadequate to ensure that FPL could provide reliable service to its customers. Furthermore, these analysis results demonstrate that the additional reliability provided by a 20% reserve margin planning criterion compared to what it would be with a 15% reserve margin is very valuable to FPL's customers.

The question regarding the proper level of reserve margin for future resource planning processes would need to be addressed in an independent proceeding and the implementation date of any change should be far enough into the future to allow utilities to incorporate it into their strategic and operational planning processes, especially because it could well be determined that a reserve margin greater than 20% would be appropriate in the future. It is important to note that the reserve margin criterion is a critical starting point in a utility's multi-year process of identifying need for new resources, obtaining data on the various alternatives, evaluating those alternatives, selecting the best alternative to meet that need, negotiating contract for equipment and construction services or purchased power, and presenting a petition to the Commission to obtain a determination of need. If this basic foundation of the process were to be changed as part of the need determination proceeding, there would be no basis on which a utility could begin the planning process. This view is consistent with the Commission's own views, expressed in Commission Order No. PSC-03-0175-FOF-EI regarding a need determination petition for Progress Energy Florida's Hines Unit 3 in which the Commission stated that it is inappropriate to consider a change to the reserve margin planning criterion in a particular utility's need determination proceeding.

IV. SELECTION OF THE CONVERSION OF CANAVERAL AND RIVIERA

Q. What do the proposed cleaner, high efficiency conversions of Canaveral and Riviera involve?

A. As explained by FPL witness Tindell, the conversions of these existing plants to cleaner, high efficiency generation consists of replacing the existing Canaveral and Riviera steam plants, which generally have heat rates of approximately 10,000 Btu/kWh, with two new 3x1 G (or, as stated by FPL witness Tindell, CTs with improved characteristics should such technology become available) state-of-the-art advanced combined cycle units, one at CCEC, with a net summer peak rating of 1,219 MW, and another at RBEC, with a net summer peak rating of 1,207 MW, and each with a base operating heat rate of about 6,580 Btu/kWh. These new combined cycle units will use natural gas as the primary fuel, and will be capable of using light fuel oil as backup fuel. The conversion of these two existing plants will result in a net system capacity (summer) increase of about 1,069 MW, but there would be no increase in steam generation. This total net system capacity increase (compared to the total generating capacity in FPL's system before the existing Canaveral and Riviera plants are removed from service) is comparable to that provided by a new 3x1 G combined cycle unit. This cleaner, high efficiency conversion of Canaveral and Riviera would remove the existing plants from service by 2010 and 2011, respectively. The new converted CCEC would

return to service by June of 2013; the new converted RBEC would return to service by June of 2014.

Q. What advantages do the cleaner, high efficiency conversions of existing FPL plants provide, compared to adding a new generating unit to FPL's system in 2014, without making any changes to the existing generation portfolio?

A. The principal advantage of FPL's proposed plant conversions is that, in addition to providing 1,069 MW of net new, system capacity to maintain system reliability, these cleaner, high efficiency plant conversions also transform existing, low efficiency steam generation into new, highly efficient, low emission, gas-fueled, advanced combined cycle generation. In effect, these conversions will replace about 1,357 MW of inefficient steam generation with 2,426 MW of highly efficient combined cycle generation.

As a result, this cleaner, high efficiency conversion plan will reduce system emissions of CO_2, SO_2 and NO_x, reduce fuel use, and produce very significant fuel cost savings, and large overall savings to FPL's customers.

Q. Has FPL quantified the magnitude of the reduced emission advantage of the plant conversions?

A. Yes. FPL has compared the emissions of its Resource Plan with Conversion to those of a Resource Plan without Conversions. The results of this comparison indicate that during the projected life of the converted CCEC and RBEC, the Resource Plan with Conversions will reduce system CO_2 emissions by as

much as 15.7 million tons compared to the "no conversions" plan. As a result, this cleaner, high efficiency conversion plan will contribute significantly toward meeting the CO_2 emission targets reflected in the Governor's Executive Order 07-127, and whatever specific legal requirements may be implemented in the future regarding CO_2 emissions as a result of that Order or pursuant to federal or state law. Also, as is presented in Exhibit SRS-7 attached to the testimony of FPL witness Sim, the conversion of Canaveral and Riviera will reduce SO_2 emissions by about 60,300 tons, and NO_x emissions by 55,300 tons in that same period.

Q. Could the Canaveral and Riviera conversions actually result in FPL being able to fully comply with those CO_2 emission requirements?

A. The conversions of Canaveral and Riviera clearly will make a major contribution towards achieving compliance with any future laws and regulations related to CO_2 emissions, and do so in a highly cost-effective way for FPL's customers. However, determining actual compliance will depend on the specific framework and legal requirements that are adopted by the state or federal governments with respect to CO_2 emissions.

Q. Has FPL quantified the reduction in fuel use that will result from the plant conversions?

A. Yes. FPL has compared the amounts of natural gas and fuel oil used in FPL's system under the Resource Plan with Conversion to those under a Resource Plan without Conversions during the period 2013 through 2017. As is presented in Exhibit SRS-9 attached to the testimony of FPL witness Sim, the

results of this comparison indicate that in 2013 through 2017 the Resource Plan with Conversions will reduce natural gas use by about 10.6 million MMBtu compared to the "no conversions" plan. Fuel oil use will also be reduced by about 7.5 million barrels. Reducing oil and gas use is a very important benefit to FPL's customers because of the projected high cost of natural gas and fuel oil in the future, and further because of the risk that actual fuel costs in the future could be even higher than projected.

Q. How did system costs with the proposed conversions of Canaveral and Riviera compare with those with the other self-build alternative?

A. FPL determined that the proposed conversions of Canaveral and Riviera in 2013 and 2014, respectively, would result in significant savings to its customers. Specifically, the proposed plant conversions result in system savings of $457 million (CPVRR) compared to adding a new 3x1 G CC in 2014. FPL witness Sim's testimony discusses the evaluation in detail. The result of this evaluation, combined with the other significant advantages of the proposed plant conversions, demonstrate that the conversion of Canaveral and Riviera by 2013 and 2014, respectively, is the best, most cost-effective alternative, as part of FPL's strategy to meet its customers' resource needs through 2017.

Q. Did FPL perform any sensitivity analysis regarding the economic benefit of the proposed plant conversions?

A. Yes. FPL determined that the savings of the Resource Plan with Conversions would increase to $890 million (CPVRR) if environmental compliance costs

were to be at the high end of FPL's range of possible outcomes, even with no change in fuel prices. FPL also determined that the savings of the Resource Plan with Conversions would increase further to $1,221 million (CPVRR) if both environmental compliance costs and gas prices were to be at the high end of FPL's range of possible outcomes. This is a very clear indication that in addition to providing significant savings to FPL's customers based on current forecasts, the proposed plant conversions also provide a very effective hedge against higher natural gas prices and or higher environmental compliance costs in the future.

Q. Do the conversions of Canaveral and Riviera provide any other benefits?

A. Yes. The conversions of Canaveral and Riviera provide benefits that are unique, in that they could not be obtained by any other resource alternative. Specifically, these conversions will enable FPL to increase system capacity, which is necessary to continue to provide reliable service to its customers, increase system fuel efficiency and reduce system emissions, including CO_2 emissions, without using any additional land, without increasing the water allocated to FPL's use, and without the need for new rights-of-way for transmission lines. In addition, because CCEC and RBEC will have the capability of receiving light oil delivered using waterborne transportation, these new generation facilities will have much greater backup fuel supply reliability than any similar facility located away from the coast where the supply of light oil would be limited exclusively to what could be delivered by truck.

Q. Have you calculated the cost difference to FPL's customers of adding WCEC 3 in 2011 and converting Canaveral and Riviera versus a plan that delays the 2011 capacity addition until 2013 and adds another new 3x1 G combined cycle unit in 2014 instead of the plant conversions?

A. Yes. FPL's resource plan with both the addition of WCEC 3 in 2011 and the conversions of Canaveral and Riviera by 2013 and 2014, respectively, will result in savings to FPL's customers of more that $1,190 million (CPVRR), compared to a plan that would delay the 2011 capacity addition to 2013 and not convert Canaveral and Riviera. These combined savings of WCEC 3 in 2011 and the plant conversions would be even greater if environmental compliance costs were to be greater than projected, and/or if natural gas prices were to be higher than projected.

Q. Is the approval of the conversions of Canaveral and Riviera necessary for the Commission also to approve WCEC 3?

A. No. As discussed at length in the testimony and materials submitted in connection with the Company's request for a determination of need, WCEC 3 in 2011, on its own, will result in very significant savings to FPL's customers, as well as provide emission reductions that benefit all the citizens of Florida. In fact, FPL's analyses performed as part of its need determination filing for WCEC 3 in 2011 indicate that, independent of the conversions of Riviera and Canaveral, a resource plan that includes WCEC 3 in 2011 will reduce costs to customers by $460 million (CPVRR) and at the same time reduce emissions, compared to delaying the new 3X1 G CC unit addition until 2013. Therefore,

while the addition of WCEC 3 in 2011 does enable the conversions of Canaveral and Riviera, it should be approved on its own, based on the very significant benefits it provides to FPL's customers, and not be contingent on the approval or implementation of the proposed conversion projects.

V. EVALUATION OF PLANT CONVERSIONS VS. MARKET PROPOSALS

Q. Has FPL evaluated the proposed conversion of Canaveral and Riviera relative to market alternatives?

A. Yes. In addition to performing the economic analysis described in the testimony of FPL witness Sim, which compared the Resource Plan with Conversions, including the proposed conversions of Canaveral and Riviera, against the Resource Plan without Conversions, FPL also compared the Resource Plan with Conversions to resource plans that include market proposals instead of the plant conversions.

Specifically, FPL witness Taylor of Sedway Consulting compared FPL's Resource Plan with Conversions to resource plans that include the addition of new purchased power in 2013 and 2014 in place of FPL's proposed plant conversions. The purchased power reflected in these resource plans is based on three proposals received by FPL in February of 2008.

Q. What is the source of the market proposals used in the evaluation performed by Sedway Consulting?

A. FPL witness Taylor of Sedway Consulting utilized proposals received by FPL on February 15, 2008, in response to the request for proposals issued by FPL in December of 2007. These proposals offered new capacity beginning in 2011 and 2012. However, for the purpose of this evaluation, Sedway Consulting assumed that the power purchase agreement related to these proposals would commence in 2013 and/or 2014, respectively, consistent with the timing of the proposed plant conversions.

Q. How did the alternate resource plans utilizing the market proposals compare to the Resource Plan with Conversions?

A. As shown in the testimony of FPL witness Taylor, the resource plan developed using the lowest cost market proposal was more than $480 million (CPVRR) more costly than the Resource Plan with Conversions. All other market alternatives were between $790 million and $870 million more costly than the plant conversions. This result confirms that the conversion of Canaveral and Riviera by 2013 and 2014, respectively, provides a far more economic resource plan than can be achieved with the market proposals received in February 2008.

Q. Did the market proposals received in February 2008 provide any non-economic advantages compared to the conversions of Canaveral and Riviera?

A. No. As stated earlier in this testimony, the proposed Canaveral and Riviera plant conversions result in improved system fuel efficiency, reduced emissions and reduced oil and gas use. In addition, the plant conversions enable FPL to increase system capacity to meet its customers' needs without using any additional land or water resources, and without the need for new transmission rights-of-way. The converted CCEC and RBEC also provide the option to deliver backup fuel via waterborne transport. Only one of the generating units proposed in response to FPL's RFP provides waterborne fuel delivery.

Q. FPL has asked for exemptions from the Bid Rule for the Canaveral and Riviera conversion projects. Why is it not necessary to require FPL to issue another request for proposals to solicit new bids that would now compete against the proposed conversions of Canaveral and Riviera?

A. There are four key reasons. First, the proposed conversions of Canaveral and Riviera provide a means of significantly reducing emissions of CO_2, and do so at a significant savings compared to the cost of adding only new generation. The conversions of Canaveral and Riviera provide the magnitude of net capacity addition necessary to meet the reliability needs of FPL's customers and, through cleaner, high efficiency generation, reduce CO_2 emissions sufficiently to make a very substantial contribution to meeting any future CO_2

emission requirement that may be imposed by federal or state law. This combination results in a cost-effective, high system reliability solution to the CO_2 emission challenge that, as explained below, is unique.

Second, time is of the essence. FPL must be certain that it can proceed with the proposed plant conversions at the selected locations. The only way to have this certainty is for FPL to have obtained all the necessary approvals and permits to implement the plant conversions at Canaveral and Riviera. At present there is broadly expressed local interest in proceeding with the proposed conversions of Canaveral and Riviera, so it is very important that we proceed expeditiously to secure all the approval and permits for these projects in order to ensure their success and maximize their benefits to FPL's customers. In addition, FPL must complete this approval and permitting process sufficiently early to ensure that, if approvals and permits for the conversions of Canaveral and Riviera are not granted, there would still be time for FPL first to identify, then select from among the best available, other strategies that could achieve the necessary CO_2 emission reductions, and obtain the approvals and permits necessary to implement such strategy and still be in a position to comply with the CO_2 emissions limit in 2017.

Third, as indicated above, converting existing steam generation at the Canaveral and Riviera plants to advanced combined cycle generation will enable FPL to increase system generation capacity to meet the reliability

needs of FPL's customers, significantly reduce system costs, and increase system efficiency and reduce fuel use, while at the same time reducing emissions, including CO_2 emissions, all without dedicating new land to plant use, and without increasing the allocated use of Florida's water resources. The Canaveral and Riviera conversions would also avoid the need to acquire new rights-of-way for transmission facilities. By contrast, any proposal that would offer to build the large, efficient generation facility that would be necessary to reduce system CO_2 emissions would require a new plant site, and new transmission rights of way, and it would require the commitment of new water resources.

In addition, the Canaveral and Riviera plants have the capability of receiving light oil delivered by waterborne transport. Conversely, a new inland generation facility would have to be supplied fuel oil exclusively by truck. This gives the conversion of Canaveral and Riviera a significant advantage in that having the option to effect delivery of backup fuel by waterborne transport makes the FPL system much more reliable than would be the case if FPL were to rely exclusively on truck transportation.

These are very important advantages in favor of the proposed plant conversions, because they help reduce the impact that generation additions will have on the communities where they are located, as well as on the entire state of Florida. Proposals that could be submitted in response to a request for

proposals could not provide comparable advantages to FPL's customers and would therefore be found lacking when compared to the proposed plant conversions.

Fourth, the response to FPL's recent request for proposals (RFP) is an indication of an apparent reluctance on the part of the independent supplier market to take the risk associated with providing to FPL the type of new, sufficiently large, highly efficient generation facilities that would be necessary to both significantly reduce CO_2 emissions and deliver firm electricity to FPL at specified, competitively low base prices. Specifically, in late 2007 FPL solicited bids to provide new capacity by June of 2012, to compete with its selected self-build unit (WCEC 3), a large, very efficient advanced combined cycle unit that will cost-effectively and significantly reduce CO_2 emissions. FPL emphasized its concern with reducing CO_2 emissions. This RFP gave bidders an opportunity to propose a similar, large, highly efficient competitive unit. Yet FPL only received three proposals, all based on existing, less efficient facilities. One proposal was for a 3-year power purchase from an existing oil-burning, inefficient steam plant. The other proposals consisted of converting two existing CTs to a 2x1 F combined cycle unit. None of these proposals can contribute the size and increased efficiency necessary to meaningfully reduce CO_2 emissions in FPL's system. Although in prior solicitations FPL received proposals based on larger generating units, these proposals were significantly more expensive than FPL's self-build option.

Furthermore, it is not clear that any potential bidder currently has control of a new plant site for a new large generating unit.

Delaying the benefits of FPL's proposed conversions, and increasing the risk of not being able to obtain all approvals and permits as a result of such delays, in order to allow for consideration of the type of proposals provided in response to FPL's recent RFP would not be in the best interest of FPL's customers. Furthermore, the analysis performed by FPL witness Taylor, comparing the proposed plant conversions to proposals received in February 2008 adequately demonstrates that the conversions of Canaveral and Riviera provide far greater benefits to FPL's customers.

For these reasons, the proposed plant conversions at Canaveral and Riviera present a unique opportunity to maintain system reliability while providing to FPL's customers and to citizens of Florida significant benefits that extend well beyond comparative costs and that cannot be matched by market alternatives. Because of these unique, incomparable advantages of the proposed plant conversions, which would be achieved at significant savings, FPL believes that the requested exemptions to the Commission's Bid Rule should be granted.

VI. ADVERSE CONSEQUENCES OF DENYING FPL'S REQUEST FOR DETERMINATIONS OF NEED FOR THE CONVERSIONS OF CANAVERAL AND RIVIERA

Q. Would there be any adverse consequences to FPL and its customers if the Commission were not grant determinations of need for the conversion of Canaveral and that of Riviera?

A. Yes. If the Commission were to not grant the determinations of need sought in this proceeding, FPL's customers will face significant adverse consequences related to the cost of electricity, air emissions and other factors.

Q. Please describe the adverse consequences of denying FPL's petition in this proceeding.

A. FPL's analysis shows that without the proposed conversion on Canaveral and Riviera FPL's customers would incur significantly higher costs. FPL has estimated the incremental cost to be $457 million (CPVRR). Moreover, if natural gas prices and/or environmental compliance costs were to be higher than currently projected, the cost penalty to FPL's customers could be significantly greater. In addition, because the cost uncertainty of a number of components associated with capacity additions at Greenfield sites is greater than that at existing sites, the actual cost of a Greenfield capacity addition could be significantly greater than has been estimated in FPL's comparative analysis, and the cost penalty to FPL's customers due to not proceeding with the proposed plant conversions could therefore be even greater.

As indicated by the much greater cost savings achieved by the Plan with Conversions under the sensitivities that assume high environmental compliance costs and high natural gas costs, not approving the proposed plant conversions would also remove a very effective hedge that would protect FPL's customers in the event that future environmental compliance costs or natural gas costs are higher than currently projected.

Not granting determinations of need for the proposed plant conversions would also result in higher emissions of CO_2 (15.7 million tons), SO_2 (60,300 tons), and NO_x (55,300 tons). Rejecting the plant conversions would also result in lower system fuel efficiency and consequently much greater use of fuel oil and natural gas in the future.

In addition, not implementing the proposed plant conversions would require that FPL utilize new land and new Florida water resources and would also require new rights-of-way for transmission to achieve, with other generation additions, and at much higher costs, the same generation capacity additions that could be achieved without using new land or new Florida water resources, with these plant conversions.

In summary, it is clear that FPL's customers would not benefit if the Commission were to not grant affirmative determinations of need for the conversion of Canaveral with a planned in-service date of June 2013 and the

conversion of Riviera with a planned in-service date of June 2014 in this proceeding.

CONCLUSION

Q. Please summarize your testimony.

A. The conversions of Canaveral and Riviera by 2013 and 2014, respectively, are both unique, and the most beneficial choices among the alternatives that FPL has considered to meet its customers' resource needs in that time frame. FPL first considered DSM and renewable resources in order to meet future resource needs and maintain system reliability. However, FPL has already included in its resource plan all the cost-effective DSM additions that have been identified. There is no additional cost-effective DSM that could diminish the significant benefits to FPL's customers of converting Canaveral and Riviera.

Similarly, FPL has already included in its resource plan all the potential cost-effective renewable firm capacity that has been identified through communications with existing suppliers, through issuance of a request for proposals for renewable generation, and through other contacts with potential suppliers. There is no additional cost-effective firm renewable capacity that could affect the benefits of converting Canaveral and Riviera. Furthermore, FPL will continue to pursue additional cost-effective DSM and renewable

resources, both purchased and self-built, and to the extent that such additional resources become available and/or are developed, FPL can and will effectively integrate them into its resource plan. However, the benefit of converting Canaveral and Riviera will not be diminished.

FPL considered adding new generation capacity at a Greenfield site without modifying any existing generating plants as an alternative to the proposed plant conversions. FPL also evaluated proposals received in response to its December 2007 RFP. FPL's analysis results show that the conversions of Canaveral by 2013 and Riviera by 2014 are, by at least $457 million (CPVRR), the best and most cost-effective self-build alternatives available to FPL to meet the reliability needs of its customers. Furthermore, if higher than projected environmental compliance costs and/or higher than projected natural gas costs were to occur in the future, the economic benefit of the proposed conversions could increase to as much as $1,221 million (CPVRR). In addition, FPL determined that proceeding with the proposed plant conversions would be more than $480 million (CPVRR) less costly than entering into power purchase agreements based on the lowest cost proposal submitted in response to FPL's December 2007 RFP.

FPL's current analysis also indicates that a resource plan that includes the both the addition of WCEC 3 in 2011, which is necessary to effect the proposed conversions of Canaveral and Riviera, and the proposed plant

conversions will result in customer savings of more that $1,190 million (CPVRR), compared to a resource plan that delays the 2011 addition to 2013 and does not include the plant conversions.

Further, the proposed plant conversions result in reduced emissions of CO_2, SO_2 and NO_x, and reduced use of oil and natural gas. In fact, the reduction in CO_2 emissions achieved with the conversion of Canaveral and Riviera would make a very significant contribution towards meeting any CO_2 emission limits that may be imposed in the future.

Finally, the proposed plant conversions are unique in that they enable FPL to meet its customers' growing needs for additional generation capacity without using new land or new water resources, and without new transmission rights-of-way. In addition, backup fuel can be delivered to the converted CCEC and RBEC via waterborne transportation if needed. No other alternative, self-built or market power purchase could provide comparable advantages to FPL's customers.

Because of these significant benefits, the Commission should grant an affirmative determination of need for the conversion of Canaveral plant with a target in-service date of June 2013 and an affirmative determination of need for the conversion of Riviera plant with a target in-service date of June 2014,

based on finding that each of these plant conversions is the best, most cost-effective alternative to meet the needs of FPL's customers in this time frame.

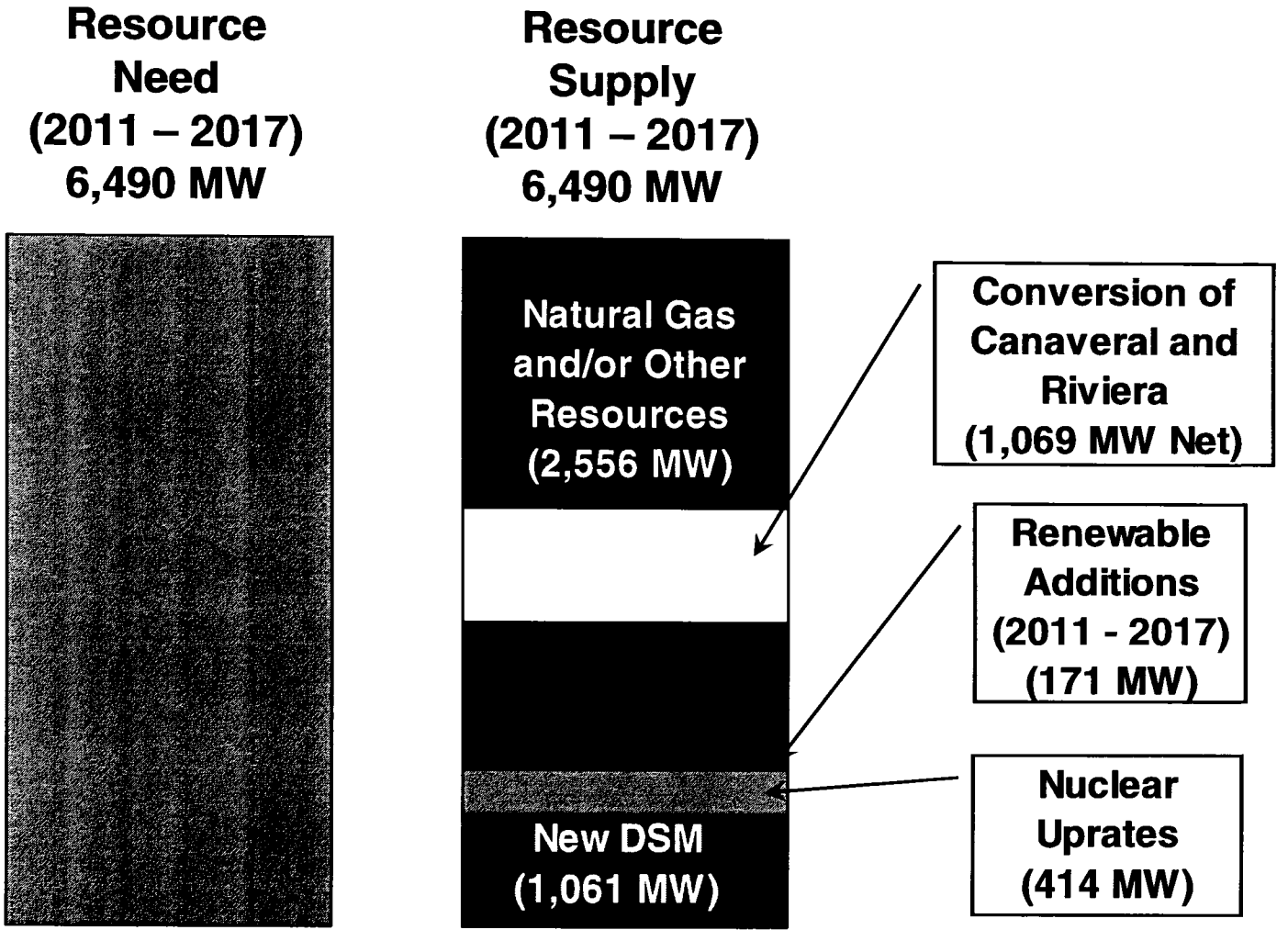
Q. Does this conclude your direct testimony?

A. Yes.

Summary of Benefits of Canaveral and Riviera Conversions

- **Provides new generation capacity necessary to ensure system reliability**
- **Total customer savings of $457 Million (CPVRR) compared to not doing the plant conversions, increasing to $1,221 Million with high gas prices and high environmental compliance costs.**
- **Total customer savings of more than $480 million (CPVRR) compared to proposals received in February 2008.**
- **Reduction in air emissions: CO_2 by 15.7 million tons, SO_2 by 60,300 tons, and NO_x by 55,300 tons.**
- **Significant contribution will help FPL cost-effectively meet any CO_2 emission requirement adopted by federal or state governments.**
- **FPL's system average heat rate, the measure of fuel efficiency, improved by more than 1%.**
- **Reduced use of fuel oil by 7.5 billion barrels and natural gas by 10.6 million MMBtu in 2013 through 2017 alone.**
- **No new land resources, no new water resource allocation, no new rights-of-way for transmission or gas pipelines required.**
- **Option to deliver backup fuel via waterborne transportation, thus enhancing system reliability.**

FPL's Flexibility to Incorporate Increased DSM and Renewable Resources



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FPL's Flexibility to
Incorporate Increased DSM
& Renewable Resources
Exhibit RS-2, Page 1 of 1

Calculation of FPL's Reserve Margin in Summer of 2014

Maintaining a 15% Reserve Margin

	(1)	(2)	(3) = (1)+(2)	(4)	(5)	(6)=(4)-(5)	(7)=(3)-(6)	(8)=(7)/(6)	(9)=((6)*1.20)-(3)
August of the Year	Projections of FPL Unit Capability (MW)	Projections of Firm Purchases (MW)	Projection of Total Capacity (MW)	Peak Load Forecast ** (MW)	Summer DSM Forecast *** (MW)	Forecast of Firm Peak (MW)	Forecast of Summer Reserves (MW)	Forecast of Summer Res. Margins w/o Additions (%)	MW Needed to Meet 20% Reserve Margin (MW)
2014	25,002	2,500	27,502	26,576	2,651	23,925	3,577	**15.0%**	**1,208**

Maintaining a 20% Reserve Margin

	(1)	(2)	(3) = (1)+(2)	(4)	(5)	(6)=(4)-(5)	(7)=(3)-(6)	(8)=(7)/(6)	(9)=((6)*1.20)-(3)
August of the Year	Projections of FPL Unit Capability (MW)	Projections of Firm Purchases (MW)	Projection of Total Capacity (MW)	Peak Load Forecast ** (MW)	Summer DSM Forecast *** (MW)	Forecast of Firm Peak (MW)	Forecast of Summer Reserves (MW)	Forecast of Summer Res. Margins w/o Additions (%)	MW Needed to Meet 20% Reserve Margin (MW)
2014	26,536	2,175	28,711	26,576	2,651	23,925	4,785	**20.0%**	**(0)**

* The Peak Load Forecast is FPL's Feb 2008 load forecast that includes Lee County load.

* * DSM values shown represent cumulative load management and incremental conservation capability.

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Calculation of FPL's Reserve Margin
Exhibit RS-3, Page 1 of 1

EXAMPLE WHY 15% RESERVE MARGIN IS INADEQUATE
OPERATIONS WITH NO WCEC 3 NOR PLANT CONVERSIONS

ADDED 325 MW PPA TO MEET 15% RESERVE MARGIN IN 2014

Year	Month	Week	Total Generating Capacity (MW)	Planned Maintenance (MW)	Available Generating Capacity (MW)	Peak Load (MW)	Generating Capacity Reserves (MW)	DSM Available for Use (MW)	DSM Reserves (MW)	Total Reserves (MW)
2014	August	4	27,502	0	27,502	26,576	926	2,651	2,651	3,577

The above outcome assumes everything occurs in 2014 exactly as forecasted six years earlier, in 2008.

2014	June	1	27,502	(800)	26,702	26,576	126	2,635	2,635	2,761

The above outcome assumes that the forecasted peak occurs in June; otherwise, there is no change.

2014	June	1	27,502	(800)	26,702	28,516	**(1,814)**	2,635	**821**	**821**

The above outcome assumes that the peak occurs in June, and that the actual peak is higher than forecasted, and the variance is equal to the average percent variance observed in 2004 - 2007.

Note:

The results above assume that all generating capacity except that explicitly scheduled for maintenance is operating at maximum capacity (i.e., no forced outages), that there are no fuel supply interruptions or transmission interruptions, and that FPL is not providing assistance to any other utility.

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Example Why 15% Reserve Margin Is Inadequate
Exhibit RS-4, Page 1 of 2

EXAMPLE WHY 15% RESERVE MARGIN IS INADEQUATE

OPERATIONS WITH WCEC 3 AND CONVERSIONS OF CANAVERAL AND RIVIERA

Year	Month	Week	Total Generating Capacity (MW)	Planned Maintenance (MW)	Available Generating Capacity (MW)	Peak Load (MW)	Generating Capacity Reserves (MW)	DSM Available for Use (MW)	DSM Reserves (MW)	Total Reserves (MW)
2014	August	4	28,711	0	28,711	26,576	2,135	2,651	2,651	4,786

The above outcome assumes everything occurs in 2014 exactly as forecasted seven years earlier.

2014	June	1	28,711	(800)	27,911	26,576	1,335	2,635	2,635	3,970

The above outcome assumes that the forecasted peak occurs in June; otherwise, there is no change.

2014	June	1	28,711	(800)	27,911	28,516	**(605)**	2,635	2,030	2,030

The above outcome assumes that the peak occurs in June, and that the actual peak is higher than forecasted, and the variance is equal to the average percent variance observed in 2004 - 2007.

Note:

The results above assume that all generating capacity except that explicitly scheduled for maintenance is operating at maximum capacity (i.e., no forced outages), that there are no fuel supply interruptions or transmission interruptions, and that FPL is not providing assistance to any other utility.

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Example Why 15% Reserve Margin Is Inadequate
Exhibit RS-4, Page 2 of 2