



Bryan S. Anderson
Senior Attorney
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408-0420
(561) 304-5253 (Telephone)
(561) 691-7135 (Facsimile)

April 8, 2008

HAND DELIVERED

Ms. Ann Cole, Director
Division of Commission Clerk
And Administrative Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

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COMMISSION
CLERK

Re: **Docket No. 08 0263 -EI**
In re: Florida Power & Light Company's Petition to Determine Need for West County Energy Center Unit 3 Electrical Power Plant

Dear Ms. Cole:

Enclosed for filing on behalf of Florida Power & Light Company ("FPL") are the original and fifteen (15) copies of (i) FPL's Petition to Determine Need for West County Energy Center Unit 3 Electrical Power Plant; and, (ii) testimony and exhibits for John C. Gnecco IV, P.E., Kennard F. Kosky, Dr. Rosemary Morley, Rene Silva, Dr. Steven R. Sim, Heather C. Stubblefield, and Alan S. Taylor.

Also included in this submittal is a computer diskette containing FPL's Petition in Word format and a CD with Dr. Steven R Sim's Exhibits SRS-4 and SRS-7. Please contact me if you or your Staff has any questions regarding this filing.

CD to ECR,

- CMP _____
- COM 5
- CTR _____
- ECR (circled)
- GEL 1
- OPC 1
- RCA _____
- SCR _____
- SGA _____
- SEC _____
- OTH _____

Kosky - 02692-08
 Gnecco - 02693-08
 Morley - 02694-08
 Silva - 02695-08
 Sim - 02696-08
 SRS-4 - 02697-08
 SRS-7 - 02698-08
 Stubblefield - 02699-08
 Taylor - 02700-08

Sincerely,

Bryan S. Anderson
Fla. Authorized House Counsel No. 219511

FPL's customers will receive all of the major fuel cost savings, shown by lower fuel charges on their bills, starting when the unit begins operating. Capital cost savings will also be reflected in customers' charges over the life of the plant. Further, WCEC 3 will substantially reduce FPL's electric system carbon dioxide (CO₂) emissions – for example, by more than 2.2 million tons in the first two years of operations alone – helping FPL achieve the 2017 CO₂ reduction goals stated in the Governor's Executive Orders issued at last year's Florida's Climate Summit.

Adding WCEC 3 also makes it possible, from an electric system reliability perspective, for FPL to consider converting generating units at two existing plants in 2013 and 2014 to new, cleaner, highly efficient units. Converting these existing units is expected to result in substantial savings for FPL's customers. Converting the units would also reduce CO₂ emissions by millions of tons in total, benefiting all Florida residents. FPL expects that it will soon file with the Commission a separate petition proposing, and requesting that the Commission approve, the generating unit conversions.

Notably, taken together, placing WCEC 3 into operation in 2011 and converting the existing units to two highly efficient new units would enable FPL to achieve the greenhouse gas reduction target for 2017 stated in the Governor's Executive Orders, at a net cost savings to customers. No other resources available to FPL, alone or in combination, can achieve this important goal by 2017.

I. Introduction and Overview

1. Florida is one of the most populous states in the nation and continues to be one of the fastest growing. FPL projects an annual average increase of approximately 81,000 new customers through 2017. With the increase in the number of electricity-consuming devices, electric usage per FPL customer has also increased over the past 20 years, even as end-use efficiency has significantly improved. Accordingly, FPL must continue to make significant investments in new infrastructure to keep pace with the increasing demand for adequate, reliable power associated with such growth.

2. FPL continues to advance reduced electricity usage and load management techniques through industry-leading conservation efforts and other demand side management (“DSM”) programs, and actively cultivates and pursues the development of additional renewable generating capacity within the state. These efforts by themselves, however, are not enough. FPL must also construct large, baseload capacity additions if the Company is to continue “keeping the lights on.” The proposed Project will provide baseload capacity, continuously supplying electricity year-round, and is the most economical option for customers, while helping FPL meet efficiency and CO₂ reduction objectives.

3. FPL seeks from the Commission an affirmative determination of need for WCEC 3, a combined cycle unit with a summer capacity rating of 1,219 MW and a commercial operation date of June 1, 2011. WCEC 3 will be the third unit at the West County Energy Center, located in Palm Beach County, Florida. The unit’s primary fuel will be natural gas, and it will have the capability to use light oil as backup fuel.

4. FPL’s request for an affirmative determination of need is the culmination of extensive investigation and analyses designed to identify the best, most cost-effective alternative

available to be the first step in FPL's strategy to meet FPL's forecasted need for about 4,844 MW of new generating capacity through 2017 after accounting for significant increases in FPL's DSM achievements to date. That work included not only FPL's assessment of its customers' capacity needs and analysis of various self-build options to select the most cost-effective self-build option, but also the preparation and management of a Request for Proposals ("RFP") that solicited and received proposals as alternatives to FPL's self-build option, and the evaluation of these proposals submitted in response to the RFP. This evaluation encompassed separate analyses by FPL and an Independent Evaluator, Sedway Consulting, Inc.

5. The addition of WCEC 3 in 2011 is an integral part of FPL's strategy to meet the growing resource needs of its customers and reduce the emission of CO₂ and other substances through 2017 in the most cost-effective manner and thereby continue to deliver electricity at a reasonable cost, while complying with existing and anticipated environmental requirements.

6. Based on FPL's 2008 load forecast, FPL projects that between 2011 and 2017, after accounting for FPL's projected DSM contributions, FPL will have to add about 4,844 MW of new generation capacity, or 4,037 MW if met by DSM, equivalent to four generating units of the size of WCEC 3. FPL is seeking to add WCEC 3 in June of 2011 because doing so will result in significantly greater benefits to FPL's customers than seven other resource plans that FPL has evaluated.

7. In summary, FPL's customers will receive hundreds of millions of dollars in benefits, as well as prevent the emission of millions of tons of CO₂ and large amounts of other emissions. If FPL's proposal to add WCEC 3 in 2011 is approved, rather than deferring construction of comparable generation to 2013, benefits to customers and Florida residents include:

- FPL customers will save \$460 million in cumulative present value of revenue requirements in 2008 dollars (“CPVRR”). Savings will begin flowing directly to FPL customers through the fuel clause as soon as WCEC 3 enters service.
- FPL cumulative system emissions of CO₂ will be reduced by 2.2 million tons, sulfur dioxide by 6,500 tons, and nitrogen oxide by 10,750 tons, through 2013 alone. Lower system emissions translate into lower environmental compliance costs for FPL’s customers, and all Florida residents will enjoy the environmental benefits of less greenhouse gases and cleaner air, whether or not they are FPL customers.
- FPL’s overall system fuel efficiency will improve by 1.4% in period between June of 2011 and May of 2013 alone. This will decrease FPL’s fossil fuel usage during that period by about 18 million MMBtu of natural gas, and 13.6 million MMBtu of fuel oil. The fuel oil decrease alone amounts to about 2.1 million fewer barrels of oil than would be used by FPL’s generating system during the first two years of operating WCEC 3.
- FPL’s electric system will have sufficient reserve margin to create the option to convert four older generating units with two new, highly-efficient generating units, that would in turn save customers many millions of dollars in energy costs, prevent emission of millions of tons of CO₂, and make possible FPL achieving the 2017 CO₂ reduction goal stated in the Governor’s Executive Orders issued at Florida’s Climate Change Summit.

8. Achieving these benefits depends upon the Commission granting an affirmative need determination in this proceeding, and FPL constructing WCEC 3 in time to begin

operations by June 2011. WCEC 3's capital cost savings arise largely from continuing construction at the WCEC site where units 1 and 2 are presently being constructed, without remobilizing for construction. The forecasted fuel cost savings and emission reduction benefits for customers depend upon placing WCEC 3 into service by June of 2011. Denying the requested need determination would result in hundreds of millions of dollars of lost savings for customers and millions of cumulative tons of lost emissions reduction opportunities for FPL customers and all Florida residents. In order to secure these benefits for its customers and Florida residents, FPL requests that the Commission issue an affirmative need determination as requested in this Petition.

II. The Primarily Affected Utility (Rule 25-22.081(a)(1))

9. The Petitioner's name and address are:

Florida Power & Light Company
9250 West Flagler Street
Miami, Florida 33174

10. The names and addresses of FPL's representatives to receive communications regarding this docket are:

Jeffrey S. Bartel
Vice President, Regulatory Affairs
Florida Power & Light Company
215 South Monroe Street
Suite 810
Tallahassee, FL 32301
Telephone: (850) 521-3910

R. Wade Litchfield
Vice President and Associate
General Counsel
Bryan S. Anderson
Senior Attorney
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408
Telephone: 561-691-7101

11. FPL is a Florida corporation with headquarters at 700 Universe Boulevard, Juno Beach, Florida, 33408. FPL is a utility as defined in Section 366.82(1), Florida Statutes, and is

an applicant as defined in Section 403.503(4), for purposes of Section 403.519, Florida Statutes. FPL is the primarily affected utility within the meaning of Rule 25-22.081, F.A.C.

12. FPL serves approximately 4.5 million retail customers throughout Florida. Its service area comprises about 27,650 square miles in 35 Florida counties. Approximately nine million people live within the area FPL serves, which ranges from St. John's County in the north to Miami Dade County in the south, and westward to Manatee County.

13. FPL is responsible for serving its existing customers, as well as new customers locating in its service territory. FPL forecasts continued growth of customers in its service territory. The Company is projecting an annual average increase of about 81,000 new customers amounting to an annualized retail customer growth rate of 1.7% between 2008 and 2017. Over the same period, FPL forecasts an annual growth rate of 1.4% in net energy usage per customer. Taking customer growth and increases in per-customer energy usage together along with the addition of the Lee County Electric Cooperative ("Lee County") power sales contract, FPL projects an average annual growth rate in energy sales of 3.4% between 2008 and 2017.

14. In 2007, FPL experienced a coincident peak demand of 21,962 MW (summer) and 16,815 MW (winter) and a Net Energy for Load ("NEL") of 114,315 Gigawatt-hours ("GWh"). FPL is projecting an average annual 2.8% increase in summer peak between 2008 and 2017. This amounts to an average annual increase of about 700 MW per year. By 2017, the cumulative increase over last year's summer peak is projected to be 6,659 MW. This summer peak load growth takes into account FPL's estimates with respect to increased numbers of customers, higher electricity usage per customer, as well as adjustments for increased energy efficiency due to standards contained in the National Energy Policy Act of 2005. FPL's estimates also include summer peak load increases attributable to wholesale electric service to

Lee County, which will begin with small amounts in 2010 through 2013 and larger amounts beginning in 2014. FPL expects that FPL's retail customers will not be disadvantaged and, in fact, will have lower electric rates as a result of the Lee County power sales.

15. FPL is part of a nationwide interconnected power network. It has multiple points of interconnection with other utilities that enable power to be exchanged among utilities. FPL's interconnection points with other utilities are addressed in more detail in FPL's RFP submitted as an exhibit in this proceeding. The FPL transmission system is comprised of 6,640 circuit-miles of transmission lines. Integration of the generation, transmission and distribution system is achieved through FPL's 573 substations.

III. FPL's Resource Mix, Conservation and Clean Energy (Rule 25-22.081(1)(a))

16. FPL has one of the cleanest generating fleets in the country, and is an industry leader in energy efficiency/conservation and load management through its DSM programs. FPL meets its customers' energy needs through a mix of fossil and nuclear generating units, purchased power including renewable generation, and DSM. FPL's existing generating resources are located at 14 sites distributed geographically throughout its service territory, and also include partial ownership of one unit located in Georgia and two units located in Jacksonville, Florida. In 2007, FPL's generating fleet totaled approximately 22,135 (summer) of capacity and its generating units consisted of four nuclear steam units, three coal steam units in which it holds partial ownership interests, 12 combined cycle units, 17 fossil fuel steam units, 48 combustion turbines and five diesel units.

17. FPL presently has a long-term Unit Power Sales ("UPS") contract to purchase up to 931 MW of coal-fired generation from Southern Company. FPL also has a long-term contract

with Jacksonville Electric Authority for the purchase of 381 MW (summer) coal-fired generation from St. John's River Power Park ("SJRPP") Units One and Two. In addition, FPL has a number of short-term, firm capacity purchased power contracts with non-utility suppliers totaling 943 MW (summer) for 2008. However, in 2015 the UPS contract expires at the end of 2015 and FPL currently projects that Internal Revenue Services regulations will require the Company to stop taking power under the SJRPP contract some time prior to the summer peak period of 2016.

18. FPL also has contracts to purchase firm capacity and energy from five cogeneration and small power production ("qualifying facilities") totaling 738 MW. This value drops to 595 MW by 2011 due to the expiration of three contracts with municipal waste-to-energy facilities. Though analyses are still underway, for purposes of this filing FPL is optimistically assuming that it will be able to extend these contracts. The current total capacity under contract from these three purchases, 143 MW, is assumed to continue through 2026, contributing to a total assumption of 738 MW through 2020.

19. FPL continues to encourage the development of renewable sources of energy in Florida and elsewhere and seeks to enter into contracts with renewable energy suppliers that will benefit FPL's customers. FPL issued a request for proposals for renewable capacity and energy during 2007. During 2008, FPL is issuing another request for proposals for renewable energy with the objective of identifying resources available at prices supporting contracts consistent with existing regulations.

20. FPL is also fostering the expansion of renewable energy sources through development of its own renewable generation projects. FPL is pursuing development of a wind project in St. Lucie County and has on-going initiatives involving solar, wind, biomass, landfill, waste water and ocean current resources. The Company is also continuing to pursue large-scale

installation of photovoltaic and solar thermal generation. For purposes of this filing, FPL is projecting a total of 126 MW of firm capacity from new renewable purchases and/or FPL's development efforts.

21. With respect to energy efficiency/conservation and load management, 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 2007, FPL has achieved 3,961 MW (at the generator) of summer peak demand reduction, 2,913 MW (at the generator) of winter peak demand reduction, and 42,301 GWh (at the generator) of energy savings. FPL has also completed more than 2,537,600 audits of customers' homes and facilities. This amount of peak demand reduction has eliminated the need for the equivalent of 12 power plants of 400 MW capacity each (after accounting for reserve margin requirements). FPL has achieved this level of demand reduction through DSM programs designed to reduce electric rates for all customers, DSM participants and non-participants alike.

22. FPL ranks at the highest level nationally in DSM achievement. The U.S. Department of Energy ("DOE") reports annually on the effectiveness of utility DSM efforts through its Energy Information Administration. DOE separately measures both energy efficiency/conservation and load management. Based on the most current comparative data available, which is for the year 2006, FPL is ranked number one nationally for cumulative energy efficiency/conservation achievement and number three in load management. FPL continually seeks ways to refine, improve and expand its portfolio of cost-effective DSM programs through its on-going program monitoring work as well as its research and development activities.

23. FPL's projection of resource needs takes into account all DSM found to be cost-effective and approved by the Commission. This includes both FPL's current DSM Goals established by the Commission plus additional DSM found to be cost-effective after FPL's DSM Goals were established. In addition, it also assumes a continuation of DSM implementation for 2015-2017 at annual implementation rates commensurate with planned DSM implementation rates in the years immediately preceding 2014.

IV. The Need for WCEC 3 (Rule 25-22.081(1)(c))

24. Based on FPL's 2008 load forecast, FPL projects that between 2011 and 2017 FPL will have to add, after accounting for its projected DSM contributions, about 4,844 MW of new generation capacity, equivalent to four generating units of the size of WCEC 3.

25. The resource plan that includes the addition of WCEC 3 in June of 2011 will result in significantly greater benefits to FPL's customers than the other seven resource plans that FPL has evaluated. As shown in the testimony and exhibits submitted in support of this petition, these benefits fall into six categories.

26. First, adding WCEC 3 in 2011 will result in customer savings of about \$460 million in cumulative present value of revenue requirements ("CPVRR") compared to adding a similar unit in 2013, and about \$137 million CPVRR compared to adding WCEC 3 in 2012. In addition, the selected resource plan that includes WCEC 3 in 2011 will result in customer savings of between \$600 million and \$1 billion CPVRR compared to the five other resource plans that include the proposals received in response to FPL's RFP.

27. Second, by adding the clean, highly efficient WCEC 3 in 2011, cumulative system air emissions will be reduced as follows: CO₂ by 2.2 million tons, SO₂ by 6,500 tons,

and NOx by 10,750 tons, compared to delaying until 2013 the amount of new generation capacity provided by WCEC 3.

28. Third, between June of 2011 and May of 2013, FPL's system average heat rate, the measure of system fuel efficiency, will improve from 8,311 Btu/kWh before the addition of WCEC 3, to 8,194 Btu/kWh. This 1.4% improvement to FPL's overall system fuel efficiency will occur because of the addition of WCEC 3 in 2011, compared to delaying the generation capacity addition until 2013. The fuel efficiency improvement from adding WCEC 3 in 2011 will reduce FPL's use of natural gas by about 18 million MMBtu and fuel oil by about 13.6 million MMBtu between June of 2011 and June of 2013. The reduction in fuel oil consumption alone amounts to 2.1 million fewer barrels of oil used to provide electric service to FPL's customers during this period.

29. Fourth, adding WCEC 3 in 2011 enables FPL and its customers to have far less uncertainty regarding the actual cost of that generating unit than would be the case if WCEC 3 were to be delayed, or if another similar generating unit were to be built at another site at a later date. The economic analysis results of WCEC 3 in 2011 reflect the fact that the costs of equipment, materials and labor for the addition of WCEC 3 in 2011 are significantly lower than they would be for a later addition at WCEC or elsewhere. But what is not reflected in the results is the fact that the rate of escalation beyond 2011 for all of these cost components is highly uncertain and may well be significantly higher than currently projected. Therefore, the lost benefit to FPL's customers of delaying the addition of WCEC 3 beyond 2011 could be significantly greater than the \$137 million or \$460 million CPVRR referred to above.

30. Fifth, adding WCEC 3 in 2011 would create for FPL the option of converting, by 2013 and 2014, four existing generating units, which would transform about 1,200 MW of

relatively less efficient oil and gas-fueled steam generation into about 2,400 MW of highly efficient, state-of-the-art, environmentally cleaner advanced combined cycle units. FPL's preliminary analysis shows that these conversions would save customers many additional millions of dollars CPVRR, prevent large amounts of air emissions including millions of tons of CO₂, and permit FPL's electric generating system to satisfy the 2017 CO₂ goal stated in the Governor's Executive Orders.

31. Sixth, the addition of WCEC 3 will continue to mitigate what would otherwise, in time, become a growing imbalance between the Southeast Florida load and generation capacity in that region. As a result, this generation addition will help reduce transmission-related costs.

32. In addition to the system electric load projected for FPL's retail customers, FPL's 2008 load forecast includes beginning to provide electric service to Lee County in 2010. Lee County is a not-for-profit electric distribution cooperative serving a five-county area in Southwest Florida. In August 2007, FPL and Lee County came to an agreement by which FPL will become Lee County's power supplier in two phases. In the short-term phase, FPL will provide partial requirements service to two of the three Lee County delivery points, which serve approximately 25% of Lee County's load, for the term January 1, 2010 through December 31, 2013. Lee County's peak load requirement will be approximately 200 MW during this first phase. In the long-term phase, which commences in January 2014, FPL will serve Lee County's full retail load. During this second phase, Lee County's peak load requirement will initially be about 900 MW, growing annually thereafter. Because Lee County's load is not reflected in FPL's historical loads, a line item adjustment was made to FPL's summer peak forecast to account for this load.

33. FPL expects costs to retail customers to be lower over the term of the contract as a result of the Lee County power sales than they would otherwise be. This is because, among other reasons, service under the Lee County contract will result in the allocation of a smaller share of total system costs to serving FPL's retail customers. On balance, FPL's retail customers would not be disadvantaged and, in fact, are expected to be better off as a result of the Lee County power sales.

34. 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 new resources additions that have already been approved by the Commission and have been reflected in FPL's resource plan. Consequently, this Lee County load addition does not require any adjustment in FPL's resource plan until 2014.

35. FPL's proposal to add WCEC 3 in 2011 does not depend on the addition of the Lee County load. Without the Lee County load, in the period through 2017 FPL would still need to add 3,665 MW of new generation capacity instead of the 4,844 MW stated above. Therefore, WCEC 3 would be needed to provide about one third of the total new generation capacity requirement to meet its customers' demand for electricity through 2017 even without the Lee County load.

36. Rather, adding WCEC 3 in 2011 will provide all of the significant benefits listed above, regardless of the Lee County load addition. The addition of WCEC 3 in 2011 is also essential to creating the option to implement the advanced technology conversion of existing FPL plants by 2013 and 2014. Therefore, FPL would be requesting from the Commission an affirmative determination of need for WCEC 3 in 2011 even without the Lee County load.

37. With respect to DSM, there is no currently identified additional cost-effective DSM beyond that reflected in FPL's resource plan for the period through 2017. Therefore, additional cost-effective DSM cannot be counted on to contribute to system reliability, and there is no evidence to suggest that additional DSM could provide economic or environmental benefits to FPL's customers that could in any way diminish the unquestionable benefits, including the significant amount of reserves necessary to create the opportunity to convert four existing units, provided by the addition of WCEC 3 in 2011.

38. Similarly, there are not significant cost-effective renewable resources identified that could provide any substantial amount of firm generating capacity in the period through 2017. Therefore, renewable capacity cannot be relied on to contribute to system reliability as does the addition of WCEC 3 in 2011. 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 addition of WCEC 3 in 2011, but rather would complement those benefits.

39. FPL's proposed addition of WCEC 3 in 2011 is not made in order to maintain a 20% reserve margin in that year. Rather, FPL's recommendation is based on the benefits described above. Taking these benefits into consideration, FPL believes that its customers' interests are best served by placing WCEC 3 in commercial operation in June of 2011. It is also important to note that in the period 2011 through 2017 FPL will need to add 4,844 MW of new generation capacity. WCEC 3 would provide 1,219 MW or about one-fourth of that total to meet its customers' demand for electricity. Therefore there is no question that WCEC 3 or equivalent generating capacity will have to be added to FPL's system. Rather, the operative question for decision in this proceeding concerns the identity and timing of the capacity addition that would

be most beneficial to FPL's customers. FPL's analyses show that adding WCEC 3 in 2011 is the most beneficial choice for FPL's customers, and approval for this addition is therefore requested in this proceeding.

40. Entering an affirmative need determination order under the circumstances shown with respect to WCEC 3 satisfies the statutory need requirement under Commission precedent, which under similar circumstances has expressly recognized economic or socio-economic need as an appropriate basis for approving need determinations.

41. For example, the Commission recently entered an affirmative need determination with respect to Progress Energy Florida's proposed expansion of the Crystal River 3 nuclear power plant. See, e.g., In Re Progress Energy Florida, Docket No. 060642-EI, Order No. PSC-07-0119-FOF-EI, 255 P.U.R.4th 422, 2007 WL 517088 (Fla. P.S.C.) (Order entered February 8, 2007). In its decision, the Commission stated:

In determining the need for the CR3 Uprate, we have taken into account the need for electric system reliability and integrity. The need for the CR3 Uprate is an economic need, not reliability need. The CR3 Uprate will displace higher cost fossil fuel and purchased power generation with low cost nuclear generation, resulting in substantial fuel savings that provide a net benefit to customers. The CR3 Uprate's substantial economic benefits satisfy the statutory need requirements under our prior precedent and Rule 25-22.081(3), F.A.C., recognizing an economic or socio-economic need for new generation.

In Re Progress Energy, 255 P.U.R.4th 422, *425; see also In Re: Petition for determination of need for Hines Unit 2 Power Plant by Florida Power Corporation, Docket No. 001064-EI, Order No. PSC-01-0029-FOF-EI, 2001 Fla. PUC LEXIS 34, (Order entered January 5, 2001) ("... We conclude ... that the decision to construct Hines 2 in the time frame sought is driven primarily by economics, including its equipment arrangements, and the use of the existing Hines Energy

Complex, as discussed below relating to cost-effectiveness....”), aff’d Panda Energy International v. Jacobs, 813 So.2d 46 (2002 Fla.). (Commission appropriately considered economic benefit to customers among other factors in granting need determination).

V. The Proposed Electrical Power Plant (Rule 25-22.081(1)(b))

42. West County Unit 3 is designed to use three Mitsubishi Power Systems 501G series advanced combustion turbines (“CTs”), three heat recovery steam generators (“HRSGs”) and one steam driven turbine generator. The resulting three-on-one (3x1) Combined Cycle (“CC”) unit is expected to have an approximate total rated capacity of 1,219 MW in summer (at 95° F) and 1,335 MW in winter (at 35° F).

43. FPL anticipates engineering and construction savings with WCEC 3 because the 3x1 configuration is similar to the units presently being constructed at the WCEC site. Accordingly, the project planning, detailed design, procurement, construction, commissioning and O&M will involve similar requirements. There are also substantial construction synergies and cost reductions associated with constructing WCEC 3 without demobilizing and remobilizing from constructing WCEC 1 and 2.

44. Generally, CC plants of the design to be used for WCEC 3 can be expected to achieve energy conversion rates (heat rates) of less than 7,000 Btu/kWh for base operation. This compares favorably to values on the order of 10,000 Btu/kWh for conventional boiler steam-electric generating units, such as for the existing four generating units that could be converted, and it results in a fuel savings of about 30%. FPL anticipates that the new WCEC 3 will achieve a highly efficient average base heat rate of 6,582 Btu/kWh (HHV at 75° F).

45. The CTs will use natural gas delivered by pipeline to the plant as their primary fuel. Natural gas will be transported to WCEC 3 using the same Gulfstream Natural Gas System (“Gulfstream”) facilities that will serve WCEC 1 and 2. Gulfstream is independently undertaking the permitting and construction activities for the necessary upgrades to the existing infrastructure.

46. To provide a backup fuel to the unit should there be a loss of natural gas to the site, WCEC 3 will be designed to use light oil. Light oil will be trucked to the site and stored in sufficient quantities to allow the entire West County Energy Center site to operate at full capacity for approximately 72 hours of continuous operation.

47. WCEC 3 will connect to a 230 kV system substation via new tie-lines which will be located adjacent and to the south of WCEC 1 and 2. The transmission interconnection and integration requirements costs are included in FPL’s cost estimate for WCEC 3.

48. The location of WCEC 3 will maximize the beneficial use of the existing West County Energy Center site while helping minimize environmental, land use and cost impacts. The site benefits from adjacent existing transmission infrastructure, which includes a transmission system substation for both the 230 kV and 500 kV systems. The site is also a developed reclaimed parcel that requires no impact to environmentally sensitive lands, which will further minimize environmental impacts. There are no water supply, fuel supply, transmission or other constraints that will interfere with FPL’s ability to successfully construct and operate WCEC 3.

49. The use of clean fuels and combustion controls will minimize air emissions from WCEC 3 and ensure compliance with applicable emission-limiting standards. FPL’s design

constitutes the Best Available Control Technology for air emissions and minimizes such emissions while balancing economic, environmental and energy impacts.

50. WCEC 3 will be a highly reliable source of energy for FPL's customers. The unit will have an estimated equivalent forced outage rate of about one percent, and an equivalent availability factor of approximately 97%. This highly reliable unit will help maintain the system reliability and integrity of FPL and Peninsular Florida.

51. The estimated total installed cost for West County Unit 3 is \$864.7 million in 2011 dollars. This cost includes \$735.8 million for the power block, \$41.6 million for transmission interconnection and integration (including GSU transformers), and \$87.3 million in allowances for funds used during construction (AFUDC) to an in-service date of June 2011.

52. FPL anticipates that adding WCEC 3 in June 2011 will result in savings of \$70.0 million in construction costs due to the efficiencies gained by building the unit in a continuous sequence with WCEC 1 and 2, rather than deferring construction to a later time. These cost savings are a result of not having to remobilize the construction team and construction facilities; sharing construction supervision and management among multiple units; and exercising options on equipment included in the original WCEC 1 and 2 procurement contracts.

VI. FPL's Analysis of Generating Alternatives (Rule 25-22.081(1)(d))

53. FPL periodically examines a variety of generation construction options in the course of determining the most economical self-build options for its system. Several factors influence the decision regarding the different types of alternatives that could reasonably be included in the resource planning process.

54. The major available generating alternatives for consideration include combined cycle technology utilizing advanced combustion turbines, simple cycle technology utilizing advanced combustion turbines, pulverized coal, gas or oil fired steam generator technology, integrated gasification combined cycle technology and nuclear steam generator technology. Due to permitting uncertainty associated with any coal-based generation, the pulverized coal and integrated gasification combined cycle technology options were ruled out as unfeasible technology options. Nuclear based generation was ruled out due to the estimated time to license and construct the facility, which is estimated to take at least 10 to 12 years. Traditional oil or gas fired steam generator technologies were also not considered in any detailed analysis due to the inherent efficiency advantages of the combined cycle technology and the cost advantages of simple cycle technology. Previous analyses consistently showed that combined cycle units were generally better economic choices for FPL's system than are combustion turbine units.

55. In its analyses that led FPL to select WCEC 3 in 2011 as its best, most economical self-build option, FPL compared adding WCEC 3 in 2011 to delaying, for one year, the addition of WCEC 3, or of an equivalent combined cycle unit at a different location. FPL also compared the addition of WCEC 3 in 2011 to the addition of generation of a different size at West County Energy Center in 2012. All the analyses FPL performed confirmed that adding WCEC 3 in 2011 is the best self-build alternative for FPL's customers. Consequently, FPL designated WCEC 3 in 2011 as its Next Planned Generating Unit ("NPGU") for purposes of developing and administering a capacity RFP as provided for pursuant to Rule 25-22.082, Fla. Admin. Code (the "Bid Rule").

56. FPL issued its RFP consistent with the requirements of the Bid Rule on December 13, 2007 after holding a Pre-Issuance meeting on December 11, 2007. In summary, the RFP was

similar in design and scope to capacity RFPs previously issued by FPL. This RFP sought proposals for up to 1,250 MW that could begin to provide firm capacity and energy starting in the June 2011 to June 2012 time frame.

57. The Bid Rule was used as the primary reference for the development and execution of the FPL RFP process. Where specific actions were required of the utility or participants, FPL ensured those actions were taken and the completion of the steps documented. Where the Bid Rule directed specific content be included in the RFP, such as the description of FPL's NPGU, FPL ensured that the specified content was included in clear and concise terms. Equally important, the Bid Rule provides general guidance as to how the RFP process is to be organized and conducted. Throughout the entire process FPL ensured that the RFP met the spirit and letter of the Bid Rule requirements.

58. As encouraged by the Bid Rule, FPL drafted its RFP to enable proposers to present a wide range of resource alternatives in a number of transactional formats. The RFP allows for purchased power sales from interconnected utility systems and purchased power sales from existing or new construction assets.

59. FPL took extensive measures to ensure that proposals solicited by the RFP would be fairly evaluated in comparison with WCEC 3, FPL's NPGU. In addition, as FPL has done in past solicitations, an independent evaluator, Sedway Consulting, was contracted to independently conduct an economic evaluation and review FPL's overall RFP evaluation process. Mr. Alan Taylor provides direct testimony to describe the results of Sedway Consulting's activities.

60. In accordance with the Bid Rule, FPL issued a press release for trade publications and newspapers and published a Notice in the New York Times, the Wall Street Journal and the Miami Herald newspapers announcing its intent to issue the RFP. FPL's press release and

notices also announced pre-RFP-issuance and pre-bid workshop meetings to be held in Miami that interested entities could attend in-person or by telephone. A website was established for the RFP where participants could register their interest in the RFP process and be retained on a listing to receive process communications and access to RFP documents, plus ask RFP-related questions and receive replies from FPL that were available to all potential Bidders.

61. Consistent with its press release and published notices, FPL conducted a pre-issuance meeting in Miami on December 11, 2007. Following RFP issuance, FPL conducted a Pre-Bid Workshop on December 20, 2007. Consistent with the Bid Rule, FPL invited not only the Commission Staff, but also the Office of Public Counsel to both the pre-RFP-issuance meeting and Pre-Bid Workshop.

62. Participants were provided an opportunity under the Bid Rule to raise objections if they felt that FPL's RFP did not comply with the Bid Rule. No objections were raised in the RFP process.

63. FPL continued to engage interested participants and observers throughout the period leading up to proposal submission. FPL maintained an open line of communication with participants, and fielded and answered questions as bidders developed their bids.

64. FPL received three proposals from two organizations. The proposals were labeled as Proposals 1, 2 and 3 ("P1, P2 and P3"). Detailed information regarding the proposals, including capacity, technology, in-service dates, and term-of-service is presented in exhibits submitted with testimony in support of this petition. FPL and the independent evaluator, Sedway Consulting, reviewed all proposals received on the Proposal Due Date of February 13, 2008. Questions regarding whether or not RFP Minimum Requirements had been met by the proposals were identified during this initial review. While following up to obtain information and

determine whether RFP Minimum Requirements could be satisfied, in order to avoid delays in the evaluation process, FPL proceeded with the economic and non-economic evaluations in hopes that the proposals would eventually be found to be in compliance with the RFP Minimum Requirements. Ultimately, none of the RFP alternatives proposed in response to FPL's RFP satisfied the RFP Minimum Requirements.

65. While determination of satisfaction of RFP Minimum Requirements remained pending, FPL developed resource plans for use in its analyses of the RFP proposals and its NPGU, WCEC 3. FPL's extensive economic evaluation of these alternatives included generation system-related costs and transmission-related costs, as well as the impact of each portfolio on FPL's capital structure. In the economic evaluation of individual proposals, generation system costs were developed in FPL's P-MArea production costing model and its Fixed Cost Spreadsheet, using the proposed pricing indicated in the proposal. Concurrently, the independent evaluator, Sedway Consulting, conducted a separate generation system cost analysis of the proposals using a different model, the Response Surface Model ("RSM"). The use of the RSM is explained in the Independent Evaluation Report attached to the testimony of Alan Taylor submitted by FPL in this proceeding.

66. FPL's analyses of the alternate resource plans utilizing the three proposals received in response to FPL's RFP showed that the best alternate plan to WCEC 3 was more than \$600 million CPVRR more costly than the resource plan with WCEC 3 in 2011. The most expensive resource plan utilizing the proposals received in response to FPL's RFP was almost \$1 billion CPVRR more costly than the resource plan with WCEC 3 in 2011. Therefore, the addition of WCEC 3 in 2011 results in a far more economic plan than can be achieved with the proposals submitted in response to FPL's RFP.

67. Accordingly, FPL's final cost comparisons from its RFP evaluation demonstrated a clear and substantial separation in cost between WCEC 3 and all other alternatives. Sedway Consulting's independent economic evaluations confirmed the significant cost difference between WCEC 3 and the competing alternatives.

68. In addition, FPL's analysis of the alternate resource plans incorporating the responses to FPL's RFP did not disclose any non-economic advantages compared to the addition of WCEC 3 in 2011. For example, the addition of WCEC 3 in 2011 results in improved system fuel efficiency, reduced emissions and reduced oil and gas use, as discussed above. In contrast, the generating units proposed in response to FPL's RFP do not provide comparable benefits.

69. Throughout the RFP process, FPL adhered to the requirements of the Bid Rule. FPL concluded the evaluation phase of the analysis with the determination that construction of WCEC 3 in 2011 is the best and most cost-effective alternative. The independent evaluation confirmed FPL's conclusion.

VII. FPL's Analysis of Non-Generating Alternatives (Rule 25-22.081(1)(e))

70. FPL employs comprehensive and cost-effective DSM programs to reduce peak load requirements and reduce energy consumption. FPL has long been one of the key innovators in the field of DSM, and is a nationally ranked industry leader in energy efficiency/conservation and load management. Without its DSM, FPL would require far more additional capacity to meet its present and projected needs.

71. Since the inception of FPL's DSM programs, FPL has avoided the need for 4,753 MW of generation capacity as a result of cost-effective DSM programs. From August 2008 to August 2010 FPL expects that 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 August 2011 through August 2017, FPL and its customers will have avoided a total of 6,268 MW of generating capacity by August 2017 as a result of DSM programs, equal to 21% of the projected amount of FPL-owned generating capacity (29,878 MW) in operation by 2017.

72. FPL has not identified any additional cost-effective DSM beyond that already reflected in its need calculations. Therefore, considering the need for resources through 2017, DSM is not available to avoid or indefinitely defer the need for WCEC 3. In fact, even after the addition of all the currently projected DSM increases reflected in FPL's resource plan, and after adding WCEC 3 in 2011, FPL would still need to add about 3,625 MW of new generating capacity by 2017.

73. In addition, FPL's resource plan already includes all the existing firm renewable generating capacity that FPL is currently purchasing, including about 143 MW from contracts that expire by 2012, which FPL will try to renew. FPL's resource plan also reflects another 126 MW of new capacity from renewable resources based on what FPL believes is a reasonable estimate of cost-effective firm capacity renewable energy that is likely to be delivered by responses to a Renewable RFP(s) and/or FPL's development efforts.

74. All of the existing and new potential cost-effective firm generating capacity from renewable resources has already been reflected in FPL's resource plan. Therefore, neither the need for, nor the benefits provided by, WCEC 3 in 2011 are diminished by DSM or renewable resources. FPL notes that adding WCEC 3 in 2011 and any additional cost-effective DSM and renewable energy that may hereafter be identified are complementary -- not competing -- options. FPL will continue to work to identify DSM and renewable energy opportunities that may be useful in providing service to FPL's customers.

VIII. Adverse Consequences of Delay (Rule 25-22.081(f))

75. If a determination of need for WCEC 3 in 2011 is not granted, FPL's analysis shows that delaying the addition of the 1,219 MW of capacity provided by WCEC 3 until 2013 will result in much higher costs to FPL's customers. FPL has estimated the incremental cost to be \$460 million CPVRR. However, because the cost uncertainty of capacity additions increases with time, the actual cost of a 2013 capacity addition could be significantly greater than has been estimated, and the adverse cost consequence to FPL's customers due to delaying WCEC 3 could be significantly higher than \$460 million CPVRR.

76. In addition, denying a need determination for WCEC 3 in 2011 will also result in higher air emissions and associated environmental compliance costs. For example, if addition of a comparable plant is delayed until 2013, higher cumulative amounts of CO₂ (2.2 million tons), SO₂ (6,500 tons), and NO_x (10,750 tons) will be emitted into the atmosphere. Resulting lower system fuel efficiency will also increase the amount of fuel oil and natural gas used by FPL's system by 31.6 million MMBtu in natural gas and oil during that two year period. The increased oil usage alone amounts to about 2.1 million barrels compared with constructing and operating WCEC 3 beginning in 2011.

77. In addition, not granting the need determination for WCEC 3 in 2011 would indefinitely defer the opportunity to convert the existing plants because without WCEC 3 in service by 2011, FPL cannot remove the existing plants from service to implement the conversions. Accordingly, for all of these reasons it is clear that FPL's customers would be adversely affected by denial of FPL's petition for a determination of need for WCEC 3 in 2011.

IX. Disputed Issues of Material Fact

78. FPL is presently unaware of any disputed issues of material fact affecting this proceeding. As noted above, no party objected that FPL's conduct of the RFP violated the Bid Rule. In any event, FPL will demonstrate that approving a need determination for WCEC 3 in 2011 will best serve FPL's customers by providing \$460 million CPVRR in economic benefits as well as substantially reducing FPL's system emissions, and making possible the consideration of converting four existing units, which in turn, if implemented would save customers many millions of dollars while reducing FPL's system CO₂ emissions by 2017 to the target levels stated in the Governor's Executive Orders issued at Florida Climate Summit. FPL also will demonstrate that there is no reasonably available DSM or other non-generation alternative that would significantly mitigate the need for WCEC 3.

CONCLUSION

The proposed West County Energy Center Unit 3 is a highly cost-effective and environmentally positive choice for serving FPL's customers. The project presents several key advantages to FPL and its customers. While delivering \$460 million CPVRR in cost reduction benefits and millions of tons of system CO₂ reductions, adding West County Energy Center Unit 3 will also make it possible for FPL to consider implementing the conversion of existing generating units while maintaining a sufficient reserve margin from an electric system reliability perspective.

Based upon the foregoing and the more detailed information in the pre-filed testimony and exhibits submitted contemporaneously with this Petition, FPL requests that the Commission grant a favorable determination of need for West County Energy Center Unit 3 in 2011 within the time limitations set forth in Rule 25-22.080, F.A.C.

Respectfully submitted this 8th day of April, 2008.

R. Wade Litchfield
Vice President and Associate General Counsel
Bryan S. Anderson
Stephen L. Huntoon
Jessica A. Cano
Attorneys for
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408-0420

By: 
Bryan S. Anderson
Fla. Authorized House Counsel No. 219511