FPL

R. Wade Litchfield
Senior Attorney
Florida Authorized House Counsel
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408-0420
(561) 691-7135 (Facsimile)

P.O. Box 029100, Miami, FL 33102-9100

ORIGINAL

ORIGINAL

Writer's Direct Dial:
(561) 691-7101

March 8, 2004

FPSC-8 AM 11:57
COMMISSION
CLERK

VIA HAND DELIVERY

Ms. Blanca S. Bayó, Director
Division of the Commission Clerk and
Administrative Services
Florida Public Service Commission
Betty Easley Conference Center, Room 110
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket No. 04 0206 -EI
In re: Florida Power & Light Company Petition to Determine Need for Turkey Point Unit 5 Electrical Power Plant

Dear Ms. Bayo:

Enclosed for filing on behalf of Florida Power & Light Company (FPL) are an original and fifteen (15) copies of (i) FPL's Petition to Determine Need for Turkey Point Unit 5 Electrical Power Plant; (ii) Need Study for Electrical Power Plant 2007; (iii) Appendices A-P to the Need Study; and (iv) ten volumes of testimony and exhibits.

Contemporaneous with this filing, FPL is submitting under separate cover confidential documents and a request for confidential classification. Also included in this submittal is a computer diskette containing FPL's Petition in WordPerfect format. Please contact me if you or your Staff have any questions regarding this filing.

Sincerely,

for R. Wade Litchfield

RWL:ec
Enclosures

RECEIVED & FILED
FPSC-BUREAU OF RECORDS

DOCUMENT NUMBER-DATE
03258 MAR-8 04
FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Florida Power & Light Company's Petition to Determine Need for Turkey Point Unit 5 Electrical Power Plant	)	Docket No. 040406-EI
	)	Dated: March 8, 2004

PETITION FOR DETERMINATION OF NEED FOR AN ELECTRICAL POWER PLANT

Pursuant to Section 403.519, Florida Statutes, and Rules 25-22.080 and 25-22.081, Florida Administrative Code ("F.A.C."), Florida Power & Light Company ("FPL") petitions the Florida Public Service Commission ("PSC" or the "Commission") for an affirmative determination of need for Turkey Point Unit 5 electrical power plant ("Turkey Point Unit 5"). In support of its Petition, FPL states:

1. Turkey Point Unit 5 will be a 1,144 megawatt ("MW") (summer rating) and 1,181 MW (winter rating) natural gas-fired, combined cycle ("CC") power plant with light oil backup capability. It will be located at FPL's existing Turkey Point plant complex in Miami-Dade County, Florida. FPL proposes to place Turkey Point Unit 5 in commercial service by June 2007. To this end, FPL filed its supplemental application for Site Certification with the Florida Department of Environmental Protection ("DEP") on November 20, 2003. DEP has scheduled a site certification hearing for September 7 through 10, 2004.

2. FPL submits in support of this Petition and incorporates by reference a detailed Need Study document and appendices (the "Need Study") that develop more fully the information required by Rule 25-22.081, F.A.C. As demonstrated below and in the Need Study, Turkey Point Unit 5 is needed to maintain electric system reliability and integrity and to provide

adequate power at reasonable cost. Turkey Point Unit 5 is the most cost-effective option for providing the generation capacity needed to meet the needs of FPL's customers. Additionally, there is no reasonably available, cost-effective demand-side management ("DSM") alternative that would mitigate the need for Turkey Point Unit 5.

I. Preliminary Information

3. The Petitioner's name and address are:

Florida Power & Light Company
9250 West Flagler Street
Miami, Florida 33102

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

William G. Walker, III
Florida Power & Light Company
Vice President
215 South Monroe Street
Suite 810
Tallahassee, Florida 32301-1859

R. Wade Litchfield, Esq.
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408
Telephone: 561-691-7101

II. The Primarily Affected Utility

5. 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.

6. FPL serves more than 4 million retail customers throughout Florida. Its service area comprises more than 27,500 square miles in 35 Florida counties. Approximately 8.1 million people live within FPL's service area. During 2003, 53 percent of FPL's retail kilowatt hour ("kWh") sales were to residential customers, 41 percent were to commercial customers, 4 percent were to industrial customers, and 2 percent were to public street and highway lighting (includes traffic signal and street lighting) and other customers.

7. FPL is charged with serving its existing customers, as well as new customers that locate in its service territory. FPL forecasts continued growth of customers in its service territory. The population in its service territory is expected to grow to 8.6 million by 2007. FPL projects that its annualized retail customer growth from 2003 to 2007 will be 1.6 percent and that its Net Energy Load ("NEL") will grow at an annualized rate of 2.2 percent for that period.

8. In 2003, FPL experienced a coincident peak demand of 19,668 MW (summer) and 20,190 MW (winter) and a NEL of 108,391 Gigawatt-hours ("GWh"). For 2007, FPL projects to experience summer peak demand of 21,851 MW (2007), and winter peak demand of 21,605 MW (2007), before accounting for DSM. FPL expects NEL to grow from its present level to 118,430 GWh in 2007.

9. 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 the Need Study. The FPL transmission system includes more than 1,105 circuit-miles of 500 kilovolt (kV) and 2,744 circuit-miles of 230 kV transmission lines, 2,530 circuit miles of lower voltage transmission lines, and 526 substations.

10. FPL presently meets its resource needs through a mix of conventional and nuclear generating units, purchased power and DSM. FPL is projecting a total resource capability of 22,689 MW in the summer of 2004. This capability includes four nuclear steam units (2,939 total summer MW), three coal units (912 summer MW), nine CC units (5,684 summer MW), 17 fossil-fueled steam units (7,031 summer MW), 52 simple-cycle CTs (2,564 summer MW), five diesel units (12 summer MW), and long-term firm-capacity contracts from two utilities (1,312 MW) and seven qualifying facilities (880 total MW). Additionally, FPL has short-term firm capacity contracts with 6 entities (1,355 MW) for the summer of 2004.

11. Based on a detailed reliability assessment discussed in the Need Study, FPL projects that it will need 1,066 MW of additional capacity to meet the needs of its customers and provide adequate reserve margins in 2007.

III. The Proposed Electrical Power Plant

12. Turkey Point Unit 5 will use four General Electric ("GE") 7-FA series advanced combustion turbines ("CTs"), four heat recovery steam generators ("HRSGs") and a steam driven turbine generator. The resulting four-on-one (4x1) CC unit will have an approximate total rated capacity of 1,144 MW in summer (at 95° F) and 1,181 MW in winter (at 35° F).

13. FPL anticipates engineering and construction savings with Turkey Point Unit 5 because the 4x1 configuration proposed for the unit is similar to the projects being constructed at the Manatee and Martin sites. Accordingly, the project planning, detailed design, procurement, construction, commissioning and O&M will involve similar unit configuration, which should result in engineering and construction savings to FPL's customers.

14. Generally, CC plants of the design to be used for Turkey Point Unit 5 can be expected to achieve fuel conversion rates of less than 7,000 Btu/kWh. This compares favorably to values on the order of 10,000 Btu/kWh for conventional steam-electric generating units, and it results in a fuel savings of about 30 percent. FPL anticipates that the new Turkey Point CC unit will achieve a highly efficient average base heat rate of 6,835 Btu/kWh (at 75° F).

15. The CTs will use natural gas delivered by pipeline to the plant as its primary fuel. Natural gas will be transported to Turkey Point Unit 5 through an existing Florida Gas Transmission ("FGT") owned and operated pipeline. This existing natural gas pipeline is not adequate to supply the entire demands of Turkey Point Units 1 and 2 after the addition of Turkey Point Unit 5. Therefore, it will be necessary to add off-site compression to this existing pipeline to ensure sufficient supply of natural gas to the Turkey Point site during peak periods. FGT will independently undertake the necessary permitting and construction activities for these off-site mainline improvements.

16. To provide a backup fuel to the unit should there be a loss of natural gas to the site, Turkey Point Unit 5 will be designed to use light oil for an equivalent of up to 500 hours per year per CT at baseload conditions. Light oil will be trucked to the site and stored in a new 4-million-gallon tank.

17. The new CC unit will connect to the existing onsite system substation via a new tie line. Additional bays will be added to the existing system substation to accommodate the new interconnection to FPL's electric transmission system. Infrastructure to serve the new unit includes the upgrade of several existing transmission lines due to an increased ampacity requirement in the lines. Transmission interconnection and integration are more fully discussed in the Need Study.

18. The project will use a number of existing facilities at the Turkey Point complex, thus increasing the generating capacity of the complex without increasing its overall size. The location of the new Unit 5 at the existing Turkey Point complex and the selection of the CC technology will maximize the beneficial use of the site while minimizing environmental, land use and cost impacts typically associated with development of a nominal 1,144 MW power plant. In addition, it will serve one of the underlying purposes of the Florida Electrical Power Plant Siting Act, Section 403.501, et. seq., and Section 403.519 -- to limit the number of power plant sites in the state. Turkey Point Unit 5 will not have an adverse impact on existing units 1-4 at the Turkey Point complex.

19. The new CC unit will be a highly reliable source of energy for FPL's customers. It will have an estimated equivalent availability factor of 97 percent and a low estimated equivalent forced outage rate of one percent. The existence of this highly reliable unit will maintain the system reliability and integrity of FPL and Peninsular Florida.

20. The estimated total installed cost of Turkey Point Unit 5 is $580.3 million (2007 dollars). This estimate includes the cost of the power block, transmission interconnection and integration costs, off-site gas mainline improvements and allowance for funds used during construction ("AFUDC"). Turkey Point Unit 5 represents the most cost-effective option for FPL to meet its need for an additional 1,066 MW of capacity by the summer of 2007.

IV. FPL's Need for Turkey Point Unit 5

21. FPL determined in its 2003 integrated resource planning ("IRP") work that it would need an additional 1,066 MW of capacity by the summer of 2007. In performing its

analysis, FPL employed two reliability criteria. First, FPL sought to maintain sufficient capacity to keep its loss of load probability to less than 0.1 day per year. Second, FPL sought to maintain the 20 percent reserve margin that it committed to maintain and the Commission approved in Order No. PSC-99-2507-S-EU. The results of FPL's 2003 IRP work are more fully discussed in the Need Study.

22. Without the completion of Turkey Point Unit 5 by June 2007, FPL and Peninsular Florida's electric system reliability and integrity will be significantly reduced, and FPL will fail to meet either its required 20 percent or even a 15 percent reserve margin in 2007. Absent this unit, FPL would have summer reserve margins of only 14.7 percent in 2007. Turkey Point Unit 5, therefore, is needed to maintain the electric system reliability and integrity of FPL and Peninsular Florida.

23. Further, as discussed in FPL's 2003 Ten Year Site Plan ("TYSP") and as highlighted in its 2003 Request for Proposals ("RFP"), there is a growing imbalance between the amount of generating capacity located in the southeast area of FPL's service territory and the electrical load for this region. The southeast area of FPL's system includes Dade County, Broward County and a portion of Palm Beach County and is referred to in this Petition and the Need Study as Southeast Florida. The electrical load for this region has traditionally been the largest portion of FPL's entire system load, and it continues to grow. There are no scheduled generation additions in the area or transmission upgrades that would increase the capability to import more power into this area.

24. New generating capacity and/or new transmission facilities will have to be built in Southeast Florida to maintain system reliability. Turkey Point Unit 5 will help address the pressing need for additional generating capacity in Southeast Florida. The Southeast Florida

generation/load imbalance and related cost and reliability issues are discussed in greater detail in the Need Study.

25. Turkey Point Unit 5 will add highly efficient and cost-effective generation that, as a utility-owned plant, will be committed to Florida retail customers and subject to Commission oversight. As shown in the accompanying Need Study, Turkey Point Unit 5 will produce adequate electricity at a reasonable cost, improve system efficiency, and maintain system reliability.

V. FPL's Analysis of Generating Alternatives

26. FPL analyzed a total of 25 CT and CC self-build generating alternatives. FPL's economic evaluation of its most cost-effective self-build options included consideration of each option's impact on FPL's system production costs and transmission-related costs. FPL calculated each option's impact on system production costs by using the Electric Power Research Institute's ("EPRI's") Electric Generation Expansion Analysis System ("EGEAS") model to determine cumulative present value revenue requirements ("CPVRR") for each option. FPL calculated each option's transmission-related costs by calculating the revenue requirements associated with transmission interconnection and integration for each option as well as each option's impact on FPL's transmission losses and costs of operating expensive gas turbines in Southeast Florida. Ultimately, FPL selected the Turkey Point CC option as the best, most cost-effective self-build option and its Next Planned Generating Unit ("NPGU").

27. FPL also engaged in an extensive capacity solicitation process. In accord with Rule 25-22.082, F.A.C. (the "Bid Rule"), FPL developed the RFP that it issued on August 25,

2003. In developing the RFP, FPL took into account the recent amendments to the Bid Rule and the results of FPL's 2003 IRP process. FPL also considered feedback from participants and interested persons. Also, FPL included measures for the protection of customers such as a minimum financial viability and completion and performance security requirements. In addition to identifying its NPGU, FPL notified potential participants that it would evaluate the RFP proposals against or potentially in conjunction with a second self-build option: a combination of four simple-cycle CTs with total capacity of 648 MW (summer rating) located at the Turkey Point site. The possibility of having outside proposals paired with a second self-build alternative to satisfy the entire 2007 need provided additional opportunity for outside proposals that offered to meet only a portion of that need to be selected to meet FPL's 2007 need. FPL's RFP development and selection process is described in more detail in the Need Study.

28. In accord with the Bid Rule, before issuing the RFP, FPL published advance notices in national, industry and statewide media outlets. FPL also established a dedicated website and hosted a 4-hour discussion session with potential participants. Fifty-eight potential participants requested and received a copy of the RFP and representatives of 21 organizations participated in person or by teleconference in a post-issuance workshop hosted by FPL. FPL posted answers to questions posed by interested parties on its dedicated website. In response to certain requests and feedback from various entities, FPL published two addenda to its RFP in early September 2003 that addressed or clarified specific issues. The capacity solicitation process is described in more detail in the Need Study.

29. On September 4, 2003, the Florida Partnership for Affordable Competitive Energy ("PACE"), an industry trade association, availed itself of a new provision of the Bid Rule and filed numerous objections to FPL's RFP. PACE asked the Commission to determine that

FPL's RFP violated the Bid Rule by placing "onerous, unfair and unduly burdensome" requirements on proposers. After reviewing the pleadings and hearing oral argument, the Commission concluded that PACE's objections did not demonstrate any violation of the Bid Rule. Notwithstanding the Commission's findings, FPL voluntarily published a third addendum to its RFP in early October 2003 to address certain points that were raised during the complaint proceeding. FPL also continued to respond to questions via its dedicated website and via e-mail. In total, during the pre-bid process, FPL answered a total of 233 questions.

30. On October 24, 2003, FPL received 5 capacity proposals from 4 entities offering resource options that differed in size, type and economic terms. Although some proposals did not satisfy the RFP's minimum requirements, FPL evaluated all proposals in the interest of moving forward with the process. Where proposals did not meet the minimum requirements, FPL notified those proposers of the nature and extent of the non-compliance and encouraged them to make changes to bring the proposals into compliance.

31. In the meantime, FPL clarified the price components of the proposals and initiated a full economic evaluation of all proposals, in the hope that the proposers might attain compliance.[1] FPL developed seven candidate portfolios by combining proposals and/or FPL's alternative self-build unit in configurations that satisfied the 2007 need. These seven portfolios competed against an eighth portfolio consisting of Turkey Point Unit 5.

32. As is described in more detail in the Need Study, FPL's extensive economic evaluation included generation-related costs and transmission-related costs, as well as the impact

[1] Ultimately, the proposers were either unable or unwilling to make the necessary changes to their proposals to bring them into compliance. Even so, the evaluation indicated that no bidder who had failed to meet the minimum requirements had a competitive bid.

of each portfolio on FPL's capital structure. Generation costs were developed in the EGEAS model using the proposed pricing indicated by proposal(s) in the portfolio or the cost data from the FPL self-build alternatives. Concurrently, an independent, third-party evaluator, Sedway Consulting, Inc., conducted a separate generation cost analysis using a different model, the Response Surface Model ("RSM"). The use of the RSM is explained in the Need Study and the Independent Evaluation Report, which is filed as Document No. AST-2 attached to the Direct Testimony of Alan S. Taylor. Transmission-related costs were individually developed for each portfolio. Similarly, each portfolio's impact on FPL's capital structure also was assessed using static capital structure assumptions for self-build options and making net equity adjustments (the equity adjustment less mitigating factors) for purchased power options.

33. The sum of each portfolio's generation costs, transmission costs, and impact on capital structure represented the total system costs to FPL customers for the portfolio. The results from the EGEAS model demonstrated that Turkey Point Unit 5 offered the lowest generation cost of all alternatives, with an advantage of $104 million CPVRR compared to the next most competitive portfolio. The independent evaluator's RSM confirmed FPL's results. The results of the transmission-related costs analysis increased the separation between the total of all generation and transmission-related costs for Turkey Point Unit 5 and the total of all such costs for other portfolios to a $204 million CPVRR advantage for Turkey Point Unit 5 compared to the next most competitive proposal. Finally, including the results of the equity adjustment analysis further demonstrated the cost-effectiveness of Turkey Point Unit 5. In total, Turkey Point Unit 5 offered a $266 million CPVRR advantage compared to the next most competitive proposal. The economic evaluation is discussed in more detail in the Need Study.

34. The next most competitive portfolio consisted of the only proposal that met the RFP's minimum requirements paired with the FPL self-build alternative. The next most competitive portfolio was selected to a Short List, and a Best and Final Offer ("BAFO") was requested of that proposer. The BAFO revealed an increase of approximately $4.8 million CPVRR to the initially proposed costs of the proposal.

35. FPL's final cost comparisons from its RFP evaluation demonstrated a clear and substantial separation in cost between Turkey Point Unit 5 and all other alternatives. The total economic benefit of Turkey Point Unit 5 relative to the next best alternative is $271 million CPVRR.

36. There are a wide range of non-economic attributes associated with each proposal. These attributes taken together affected the risk profile of each proposal. To evaluate these attributes, FPL identified three major areas to be reviewed by subject matter experts. The areas covered environmental, technical/operational and project execution factors. Based on the non-compliance of some proposals with the minimum requirements, only the next most competitive portfolio was reviewed and compared to the NPGU. The next most competitive portfolio did not offer non-economic advantages that overcame the economic separation between it and Turkey Point Unit 5. Non-economic considerations are discussed in more detail in the Need Study.

37. Throughout the process FPL adhered to the requirements of the Bid Rule. FPL concluded the evaluation phase of the analysis with the determination that Turkey Point Unit 5 is the best and most cost-effective alternative to satisfy FPL's 2007 capacity need. The independent evaluation confirmed FPL's conclusion.

VI. FPL's Analysis of Non-Generating Alternatives

38. Apart from considering all potentially viable supply-side alternatives, FPL also considered DSM alternatives. FPL employs comprehensive and cost-effective DSM programs to reduce load requirements and encourage conservation. FPL has long been one of the key innovators in the field of DSM, and is a nationally ranked industry leader in conservation and load management.[2] Without its DSM, FPL would require far more additional capacity to meet its present and projected needs.

39. The Commission approved FPL's current DSM Plan in 2000. The Plan is designed to achieve DSM Goals for the 2000 to 2009 time frame, and FPL's current DSM Goals are presented in Table II.B.3.1 to the Need Study. In its DSM Plan, FPL evaluated and proposed various DSM strategies which comply with the Florida Energy Efficiency and Conservation Act and Commission-approved tests of cost-effectiveness. This evaluation led to a DSM Plan consisting of six residential and eight commercial/industrial DSM programs, one research and development program and five research and development projects.

40. Since the inception of FPL's DSM programs in 1978, FPL has achieved (at the generator) 3,270 MW of summer peak demand reduction and an estimated cumulative energy saving of approximately 25,429 GWh at the generator. After accounting for reserve margin requirements, FPL's DSM efforts have eliminated the need to construct the equivalent of 10 new 400 MW nominal capacity power plants. FPL's current DSM Goals call for FPL to implement 625 MW of summer peak reduction during the 2000 through 2007 time frame.

---

[2] In 2001, the most recent year for which data was available, FPL was rated first in energy conservation achievement and fifth in load management among the nation's electric utilities by the U.S. Department of Energy.

41. FPL is actively implementing all of its DSM programs, and all were factored into FPL's reliability analyses. As shown in the accompanying Need Study, FPL's projected need for 1,066 MW of additional capacity in 2007 accounts for the cost-effective DSM options presently available. There is, therefore, no reasonably available, cost-effective DSM option that could eliminate or mitigate the need to add the generation capacity provided by Turkey Point Unit 5.

VII. Adverse Consequences of Delay

42. As noted above and detailed in the Need Study, FPL needs Turkey Point Unit 5 to maintain FPL system reliability through 2007. Because of this, it is critical to meet the June 2007 in-service date for the project. Without Turkey Point Unit 5, FPL's summer reserve margins will fall to 14.7 percent in 2007, well short of the Commission-approved 20 percent reserve margin planning criterion.

43. Any delay in licensing Turkey Point Unit 5 may adversely affect FPL's and Peninsular Florida's electric system reliability and integrity in 2007. Any delay in these projects also will delay the benefits of the reliable, cost-effective and environmentally benign power that would be provided upon the project's timely completion. The adverse consequences of delay are described in greater detail in the Need Study.

VIII. Disputed Issues of Material Fact

44. FPL is presently unaware of any disputed issues of material fact affecting this proceeding. However, as addressed above, in a proceeding contemplated by the revised Bid Rule, PACE attacked the RFP on numerous grounds. See Docket No. 030884-EU. The

Commission determined that PACE's objections did not demonstrate any violation of the Bid Rule. FPL is presently unsure which, if any, of those issues will resurface or whether new issues will be raised. In any event, FPL intends to prove Turkey Point Unit 5 is needed to maintain electric system reliability and integrity and to provide adequate electricity at reasonable cost. FPL will prove that Turkey Point Unit 5 is the most cost-effective option for providing the generation capacity needed to meet the needs of FPL's customers. FPL also will prove there is no reasonably available conservation or other non-generation alternative that would mitigate the need for Turkey Point Unit 5.

CONCLUSION

The proposed Turkey Point Unit 5 is a highly cost-effective and environmentally benign option for meeting FPL's capacity needs. It presents several key advantages to FPL and its customers. Most importantly, this resource addition is critically needed to meet reliability needs in 2007. It increases electric system reliability and integrity throughout Peninsular Florida, addresses the Southeast Florida load and generation imbalance, provides adequate power at reasonable cost and is the most cost-effective alternative to meet needed capacity to FPL's system.

Based upon the foregoing and the more detailed information in the Need Study and pre-filed testimony submitted contemporaneously with this Petition, FPL requests that the

Commission grant a favorable determination of need for Turkey Point Unit 5 within the time limitations set forth in Rule 25-22.080, F.A.C.

Respectfully submitted,

R. Wade Litchfield
Natalie F. Smith
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408
Telephone: 561-691-7100

Charles A. Guyton
Steel Hector & Davis LLP
Suite 601, 215 S. Monroe St.
Tallahassee, Florida 32301

By: