

State of Florida



Public Service Commission

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DATE: JANUARY 09, 2003

TO: DIRECTOR, DIVISION OF THE COMMISSION CLERK  
ADMINISTRATIVE SERVICES (BAYO)

FROM: DIVISION OF ECONOMIC REGULATION (L. COLSON, J. BREMAN, D. DRAPER, J. HARLOW, P. STALLCUP, T. BOHRMANN) TB  
OFFICE OF THE GENERAL COUNSEL (L. HARRIS, M. STERN) WBM  
DIVISION OF COMPETITIVE MARKETS & ENFORCEMENT (M. FUTRELL, W. MAKIN, M. MARSHALL) mm

RE: DOCKET NO. 020953-EI - PETITION TO DETERMINE NEED FOR HINES UNIT 3 IN POLK COUNTY BY FLORIDA POWER CORPORATION.

AGENDA: 01/21/03 - REGULAR AGENDA - POST HEARING DECISION-PARTICIPATION IS LIMITED TO COMMISSIONERS AND STAFF.

CRITICAL DATES: FEBRUARY 10, 2003 - ORDER TO BE SUBMITTED TO THE DEPARTMENT OF ENVIRONMENTAL PROTECTION PURSUANT TO SECTION 403.507(2)(a)2, FLORIDA STATUTES

SPECIAL INSTRUCTIONS: NONE

FILE NAME AND LOCATION: S:\PSC\ECR\WP\020953.RCM

CASE BACKGROUND

On September 4, 2002, Florida Power Corporation (FPC), n/k/a Progress Energy Florida, filed a Petition for Determination of Need for its proposed Hines Unit 3 power plant, a natural gas-fired, combined-cycle electrical power plant with expected winter and summer capacity ratings of 582 MW and 516 MW, respectively. The plant will consist of a 2-on-1 combined cycle unit. The Hines Unit 3 combustion turbines will be designed with the capability to burn oil as a backup fuel. The plant would be located at the Hines Energy Complex (HEC) in Polk County, Florida, and is expected to be placed in service by December 2005. In 1994, FPC obtained Site Certification from the Florida Power Plant Siting Board (Siting Board) for the HEC site to build Hines Unit 1 and ultimately to

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locate up to 3,000 MW of generating capacity at the site. In 2001, the Siting Board approved the supplemental site certification application (SSCA) for construction of Hines Unit 2. Pursuant to the requirements of chapter 403.501-523, Florida Statutes, the Power Plant Siting Act, and Chapter 62-17, Florida Administrative Code, FPC must submit a SSCA to the siting board for approval to build Hines Unit 3. On September 4, 2002, FPC filed the SSCA with the Department of Environmental Protection.

A separate public hearing will be held by the Department of Environmental Protection, the South West Florida Water Management District, local governments, and others before the Division of Administrative Hearings to consider the environmental and other impacts of the proposed plant. Ultimately the Siting Board will issue or deny Site Certification, considering the need for power balanced with the expected environmental impacts.

On November 26, 2001, FPC issued a request for proposals (RFP) seeking power supply resources from eligible bidders to meet an anticipated need for 500 MW of capacity in the Winter of 2005/2006. In this RFP, FPC described Hines Unit 3 as its next-planned generating alternative and invited interested persons to make alternative proposals to FPC that might offer superior value and other attributes. On February 12, 2002, seven bidders submitted proposals. FPC submitted detailed descriptions of the proposals on a confidential basis to the Commission.

Subsequent to FPC's filing, the Florida Partnership for Affordable Competitive Energy (PACE) petitioned to intervene in this proceeding. At the November 20, 2002, Prehearing Conference, the Prehearing Officer granted intervention and that ruling was incorporated into the Prehearing Order, Order No. PSC-02-1536-PCO-EI, issued November 25, 2002. PACE has taken positions on all issues except Issue 5.

The Commission's jurisdiction and the substantive considerations of this case are governed by Section 403.519, Florida Statutes, which contains the following five areas the Commission must review when determining the need for an electrical power plant:

- (1) the need for electric system reliability and integrity;
- (2) the need for adequate electricity at reasonable cost;

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- (3) whether the proposed plant is the most cost-effective alternative available;
- (4) conservation measures taken by or reasonably available to the applicant which might mitigate the need for the proposed power plant; and
- (5) other matters within the Commission's jurisdiction which it deems relevant.

At the Prehearing conference held on November 20, 2002, eight substantive issues were identified for resolution in this proceeding. A hearing was conducted on December 3 and 4, 2002 and briefs were filed on December 27, 2002.

DISCUSSION OF ISSUES

**ISSUE 1:** Is there a need for the proposed Hines Unit 3, taking into account the need for electric system reliability and integrity, as this criterion is used in Section 403.519, Florida Statutes?

**RECOMMENDATION:** Yes. Florida Power Corporation has a need for additional capacity by December 2005, the in-service date of Hines Unit 3. The Commission approved a joint proposal from the investor-owned utilities in Peninsular Florida to increase minimum planning reserves to at least 20 percent by the summer of 2004. Without the Hines Unit 3 capacity, FPC's reserve margin will decrease to approximately 17 percent in 2005/06 and 14 percent by 2006/07. The Hines Unit 3 addition allows FPC to maintain a minimum 20 percent Reserve Margin. FPC is projected to grow into the capacity to be provided by the addition of Hines Unit 3. (Colson, Stallcup)

POSITIONS OF THE PARTIES

**FPC:** Yes. Through FPC's planning process, the Company identified Hines Unit 3 as its next-planned generating addition. The Company needs Hines Unit 3 to meet its 20% Reserve Margin planning criterion for the Winter 2005/2006 and to appropriately balance its supply-side and demand-side resources.

**PACE:** No. FPC admits there is no present need for the Hines 3 Unit because it can operate its system with reliability and integrity at a 15% reserve margin. FPC's system will be at a 17% reserve margin in 2005-06 without Hines Unit 3, which more than ensures system reliability and integrity.

**STAFF ANALYSIS:** FPC has demonstrated a need for additional capacity through its Resource Planning process. FPC's System Demand and Energy Forecast, the first step in this process, provides the timing and magnitude of FPC's additional capacity needs. FPC made the decision to seek approval to build Hines Unit 3 after screening various other supply-side and demand-side alternatives as part of its resource planning process and then through a RFP process.

**LOAD FORECAST**

The company's load forecast supporting the petition was sponsored by FPC witness Crisp. Mr. Crisp offered direct testimony, exhibits attached to his testimony summarizing the forecasts, and the historical data, forecast assumptions, and the regression models used to create the projected system peaks. According to witness Crisp's direct testimony, between the winters of 2002/2003 and 2010/2011, net firm demand is projected to grow from 8,559 MW to 10,190 MW, which represents approximately a two (2) percent annual growth rate. (TR 34, Composite Exhibit 1, pp. 15 - 27). No other witness offered an alternative forecast to that presented by FPC witness Crisp.

Staff reviewed FPC's forecast assumptions, regression models, and the projected system peak demands and believes they are appropriate for use in this docket. The forecast assumptions were drawn from independent sources which the Commission has relied upon in prior power plant siting cases. The regression models used to calculate the projected peak demands conform to accepted economic and statistical practices. Finally, staff believes that the projected peak demands produced by the models appear to be a reasonable extension of historical trends. Therefore, staff recommends that FPC's system demand and energy forecast assumptions and regression models are appropriate.

**RESERVE MARGIN**

PACE questioned whether there is a present need for the Hines Unit 3. PACE argues that FPC has done well over the past with a 15 percent reserve margin and if this margin is maintained, Hines Unit 3 is not needed. (PACE brief at 3). Regardless of past experience, however, Order No. PSC-99-2507-S-EU, issued December 22, 1999, in Docket No. 981890-EU, requires Florida Investor Owned Utilities (IOUs) to increase minimum planning reserve margins to a 20% reserve margin by the summer of 2004. By approving the stipulation proposed by the IOUs and issuing the above Order, the Commission has determined that 20% is the appropriate reserve margin criterion, and the IOUs are required to utilize this criterion, unless modified in a subsequent proceeding.

Staff agrees with Witness Crisp that to provide reliable service, utilities are required to maintain a margin of generating capacity above the firm demand of their customers (planned

reserves). At any given time during the year, some generating plants will be out of service and unavailable due to forced outages, periodic maintenance, or refueling of nuclear plants. Therefore, adequate reserves must be available to provide for this unavailable capacity and for higher than projected peak demand due to forecast uncertainty and abnormal weather. (TR 29 - 30). Staff believes the proper forum to address what minimum reserves are necessary should be in a generic docket, as was previously done, and not in a particular utility's power plant need determination docket.

FPC witness Crisp testified that, as required by Order No. PSC-99-2507-S-EU, FPC agreed to have a minimum reserve margin planning criterion of 20 percent by the summer of 2004. This will provide protection to FPC's customers against the risk of unplanned outages or extreme temperature events. (TR 54). Without the addition of Hines Unit 3 in December 2005, FPC's reserve margin is projected to decrease to about 17 percent in the winter of 2005/06, and 14 percent by 2006/07. FPC's reserve margins would plummet after 2005/06 without additional electric generating capacity. (TR 46 - 47).

FPC's Witness Crisp also testified that FPC has relied heavily in the past on demand side management (DSM) to meet its reserve requirements. FPC cannot use DSM as often or with the same duration as physical generation without eventually affecting customer participation levels, as was demonstrated by FPC's customer attrition from its DSM programs in 1998 and 1999. (TR 47). According to witness Crisp, DSM programs are becoming less cost-effective compared to the cost of generation. For these reasons, FPC is trying to build up its physical reserve percentage. (TR 48, TR 58, TR 83).

#### UNDERFREQUENCY STANDARD

Hines Unit 3 is planned to be a state-of-the-art gas-fired, combined-cycle power unit with an expected winter rating of 582 megawatts. It will employ a Siemens-Westinghouse generator that replicates FPC's Hines unit 2. (TR 243). Staff had expressed concerns about the "trip point" of the Hines generator, where it could cease operation at 58 Hz with zero time delay. FPC has agreed to not connect Hines Unit 3 to the transmission grid unless the unit complies with the Florida Reliability Coordinating Council (FRCC) underfrequency standards. (TR 232). In FPC's response to

staff's Interrogatory No. 33 (EXH. 3), FPC stated that a FRCC study is underway to determine any potential reliability impacts. According to FPC's witness Crisp, the unit has a relay switch that can be modified to achieve the necessary criterion established by the FRCC. This change could be accomplished for little or no cost. (TR 74). Also, witness Crisp stated that FPC could comply with the FRCC standard by shedding load in the case of an underfrequency event. (TR 86 - 87). In addition, FPC, through witness Murphy, commits to the Commission that Hines Unit 3 will be in compliance with the FRCC's underfrequency generator interconnection requirements when the unit is brought on-line in 2005. (TR 232). In the unlikely event that Hines Unit 3 does not comply with the FRCC underfrequency standards or a load shedding equivalence cannot be found, whether FPC or its customers should bear any of the resulting incremental cost will be addressed at a later time.

In summary, FPC's load forecast appears to be reasonable. FPC's projected reserve margin in the winter of 2005/2006 is 17 percent if Hines Unit 3 is not brought into service. (Composite Exhibit 1, pp. 16). Also, if Hines Unit 3 is not brought into service, FPC will violate its 20 percent minimum reserve margin in the winter of 2005/06. FPC projects that the growth in winter peak demand will average approximately 159 MW a year from 2002/03 to 2006/07, with a projected peak in 2006/07 of 9,195 MW. FPC has projected a growth in winter peak demand of 416 MW for the period 2004/05 to 2006/07. (Composite Exhibit 1, pp. 16). Therefore, staff recommends that Hines Unit 3 will be needed by December 2005, to maintain FPC's electric system reliability and integrity.

**ISSUE 2:** Is there a need for the proposed Hines Unit 3, taking into account the need for adequate electricity at a reasonable cost, as this criterion is used in Section 403.519, Florida Statutes?

**RECOMMENDATION:** Yes. As discussed in Issue 1, Hines Unit 3 will contribute to the reliability of FPC's system. Also, the results of FPC's resource planning analyses show that the economics favor combined cycle units over combustion turbine (CT), coal, or nuclear

when a generator is needed to run more than approximately 20 percent of the time. With current projections, Hines Unit 3 is expected to provide adequate electricity at a reasonable cost. (Colson)

**FPC:** Yes. As proven through the evaluation of supply-side and demand-side alternatives, and FPC's evaluation of competing bids, Hines Unit 3 provides the most cost-effective alternative providing customers with benefits associated with economies of scale with the Hines site and below-market equipment costs while meeting FPC's need.

**PACE:** No. There is no present need for the Hines 3 Unit. Further, FPC's own data show that the 2005 capital-related costs of Hines Unit 3 are more than double FPC's claimed 2005 production cost savings, which demonstrate that adding Hines Unit 3 in 2005 is not economic.

**STAFF:** FPC has demonstrated that Hines Unit 3 will improve projected reserve margins and will result in FPC meeting its minimum 20% reserve margin criterion, as discussed in Issue 1. If Hines Unit 3 is not brought into service, winter reserve margins for the years 2005/06 and 2006/07 would be 17 percent and 14 percent, respectively. This would result in a violation of the 20 percent minimum reserve criterion. (TR 34 - 35, Composite Exhibit 1, pp. 16).

Hines Unit 3 is planned to be a state-of-the-art gas-fired, combined-cycle power unit consisting of two combustion turbines, two unfired heat recovery steam generators, one steam turbine, and a recirculating water cooling system. The unit is a dual-fuel generation system, meaning that the combustion turbines can be operated on natural gas or distillate oil. Natural gas is the primary fuel. Hines Unit 3 is projected to operate at capacity factors in the range of 50 - 60 percent. (TR 39, TR 224 - TR 226).

The total installed cost for Hines Unit 3 is projected to be approximately \$258,000,000 or \$443/kW. Hines Unit 3 is located at the Hines Energy Complex (HEC) on an 8200 acre site in southwest Polk County, Florida. The location of Hines Unit 3 at the HEC provides economies of scale by using existing infrastructure at the site. (TR 223 - 224).



FPC believes and staff agrees that by building Hines Unit 3 at the HEC instead of contracting with one of the bidders, FPC is able to take advantage of the existing access roads, cooling pond, reclaimed water supply pipeline, water treatment and wastewater disposal facilities, gas laterals, transmission facilities, and other site facilities. The location of Hines Unit 3 at HEC will save FPC the site development cost that otherwise would have been incurred. As a result, the Company and its ratepayers will save additional engineering and construction costs. (TR 225). In addition, FPC's equipment contract with Siemens Westinghouse plays a critical role in the cost advantage Hines Unit 3 enjoys over the RFP respondents. FPC originally contracted with Siemens Westinghouse to provide the equipment for Hines Unit 1. An option for additional units was included with favorable pricing discounts if FPC were to place those units in service by a certain date. Therefore, these factors give Hines Unit 3 a cost advantage over other generating technologies and alternatives evaluated pursuant to FPC's RFP. (TR 43). The existing infrastructure and contractor discounts result in Hines Unit 3 providing electricity at a reasonable cost due to it being the most cost-effective alternative, as will be discussed in Issue 4.

PACE argued that there is no present need for the Hines Unit 3 unit, but for a voluntary stipulation entered by FPC to increase its reserve margin from 15% to 20%. This argument has been addressed in Issue 1. In addition, PACE argued that the unit is not economic, and adding it in 2005 will raise the average cost of electricity delivered by FPC. The record evidence presented, however, indicates the Hines Unit 3 is approximately \$90 million less expensive than the next best proposal. (TR 116).

Staff believes that FPC has chosen a proven technology, and has experience with the construction and operations of combine-cycle units. (TR 231, 233). The estimated costs appear to be reasonable. Therefore, staff recommends that Hines Unit 3 will contribute to the provision of adequate electricity at a reasonable cost.

**ISSUE 3:** Has Florida Power Corporation met the requirements of Rule 25-22.082, Florida Administrative Code, "Selection of Generating Capacity"?

**RECOMMENDATION:** Yes. FPC administered its RFP process and evaluated the resulting bids fairly and appropriately. (Colson, Harris)

**FPC:** Yes. FPC complied with all aspects of the "bid rule." After a thorough analysis of the bids it received in response to its Request for Proposals, FPC concluded that Hines Unit 3 was the most cost-effective supply-side alternative available to FPC to meet its need for power.

**PACE:** No. Implicit in this rule is the requirement that a fair, "apples to apples" comparison be performed. FPC, when considering outside proposals, considered factors that were not set forth in its RFP and unfairly discriminated against outside proposals when applying other factors.

**STAFF ANALYSIS:** In accordance with Rule 25-22.082(3) Florida Administrative Code, FPC published notices in newspapers of state and national circulation on various dates between November 20-22, 2001. The notices provided a general description of FPC's next planned generating unit, the name and address of the contact person from whom an RFP package may be requested, and the schedule of critical dates for the RFP process. Fifty-five entities that had previously expressed an interest in other RFPs in the State of Florida were sent an electronic copy of the public notice, via e-mail. (TR 110).

In accordance with Rule 25-22.082(2) and (4), Florida Administrative Code, on November 26, 2001, FPC issued its RFP package to evaluate supply-side alternatives to its next planned generating unit. FPC also filed the RFP package with the Commission on December 20, 2001. (TR 110, Composite Exhibit 1; APP. H). On February 12, 2002, FPC received proposals from seven bidders. FPC labeled the bidders A thru G. Five of the seven proposals were Greenfield Proposals (new generation) and two were System Power Proposals. (TR 112). In accordance with the RFP, FPC informed each of the seven bidders of various deficiencies in their proposals. Witness Roeder stated that five of the seven bidders submitted clarification and additional information sufficient to pass the Threshold Requirements screening process. Two of the

proposals (Bidders A and G) were deficient in meeting the information requirement of the RFP and were eliminated from the RFP process. (TR 113, Composite Exhibit 4; No. 5). The next phase of the RFP process involved the economic evaluation process. FPC's economic analysis showed that all five proposals had present worth costs that were close to each other. According to witness Roeder, FPC passed all five proposals on to the RFP optimization analysis. (TR 118-119). The purpose of the optimization analysis was to develop an optimal resource plan for each bidder's proposal. The optimization analysis was performed for a period of 25 years to capture all the costs associated with each alternative. The PROVIEW optimization model was used to assess the impact of each proposal on total system costs. The PROVIEW optimization analysis showed that Hines Unit 3 to be approximately \$90 million less expensive than the least-cost proposal (Bidder E). (TR 120). None of the five proposals were eliminated in the evaluation process based on economics. (TR 116-117).

The results of the Technical Evaluation in the RFP process showed that four of the five proposals were technically viable. Bidder B's proposal failed to meet two of the Minimum Evaluation Requirements in the environmental category. (TR 131). Furthermore, Bidder B also failed to demonstrate site control and did not provide a transmission plan, both of which were Threshold Requirements. Thus, Bidder B was not placed on the short list. (TR 132). The four remaining bidders (Bidders C, D, E, and F) were notified on April 29, 2002, that they were placed on the short list. These bidders were provided with a list of questions for clarification or additional information derived from the technical evaluation of their proposals. The bidders were given 10 days to provide answers to the questions. At the same time FPC informed the bidders that FPC was lowering the cost estimate for Hines Unit 3 and that each of them could submit a revised bid. The bidders were given the new lower value for the Hines Unit 3 cost estimate. FPC encouraged the bidders to "sharpen their pencils" to see if they could reduce the price in their proposals. (TR 132 - 133). The bidders were given ten days to submit new prices. No bidder revised its prices within that time. However, one bidder (Bidder D) proposed a lower priced proposal 10 days after the expiration of the 10-day time limit. FPC used this new submittal in its detailed evaluation of the Bidder D proposal. (TR. 133)

According to witness Roeder, FPC performed a self-assessment of Hines Unit 3, and ranked it among the proposals on the short

list during the final technical evaluation. (TR 135, Composite Exhibit 4; No. 10). The technical evaluation included permitting certainty, financial viability, commercial operation date certainty, bidder experience, etc. The results of the evaluation showed that Hines Unit 3 was ranked either first or second among the proposals. (TR 136). In terms of cumulative present worth of revenue requirements, Hines Unit 3 was found to be over \$92 million (2002 dollars) less expensive than the present worth cost of the lowest cost bidder (Bidder E). Hines unit 3 was found to be more than \$187 million (2002 dollars) less expensive than the least-cost Greenfield proposal (Bidder D). (TR 142, EXH. 4).

PACE argues that FPC did not perform an "apples to apples" comparison when considering the costs of outside proposals with that of Hines unit 3 in evaluating the respondents' bids. The costs that PACE cited are associated with Hines Unit 3 cooling water. (PACE brief at 8). FPC's witness Roeder stated that cooling water costs (the amount of water consumed by Hines unit 3) are part of the variable plant O&M cost. (TR 161). According to witness Roeder, FPC knew what those costs are for Hines Unit 1, and assumed the same costs for Hines Unit 3 in terms of dollars per megawatt hour. Witness Roeder also stated that existing facilities at HEC (cooling pond, oil storage facilities, roads, etc.) are not included in the incremental cost to build Hines Unit 3 because these are sunk costs. FPC included the O&M costs related to those facilities that are shared by Hines 3 such as oil stored into the tanks, water usage, etc. (TR 160 - 164).

PACE also argues that the record supports the conclusion that the FPC evaluation team considered whether a bidder's proposal would facilitate development of a merchant plant, which would constitute an evaluation criterion that was not disclosed to bidders in the RFP. (PACE brief at 9). Staff does not agree that the record supports this conclusion. While there are two brief references to "merchant plants" in a document, the record is devoid of evidence that FPC considered this in any way in evaluating the proposals. PACE's further argument, that FPC used a double standard of requiring bidders to have a firm fuel transport contract, while not having one itself, is not supported by the record. To the contrary, the record indicates that FPC did not disqualify any bidder for failing to have a firm fuel transport contract. (TR 178).

In summary, prior to filing its petition for determination of need for an electrical power plant, FPC provided timely notification of the issuance of the RFP by publishing notices in major newspapers, periodicals, and trade publications to ensure statewide and national circulation. FPC then issued a RFP (Composite Exhibit 1, Appendix H) which has met or exceeded the minimum requirements of Rule 25-22.082(4), Florida Administrative Code. The RFP contains a detailed technical description of the utility's next planned generating unit on which the RFP is based, as well as the financial assumptions and the parameters associated with it. FPC received seven proposals in response to the RFP. FPC evaluated these supply-side alternatives to its next planned generating unit (Hines Unit 3).

Staff believes that the bidders were treated fairly and consistently by FPC during the RFP process. As discussed in Issue 4 below, Hines Unit 3 is the least-cost alternative when compared to the RFP proposals. Therefore, staff recommends that FPC has met the requirement of Commission Rule 25-22.082, Florida Administrative Code.

**ISSUE 4:** Is the proposed Hines Unit 3 the most cost-effective alternative available, as the criterion is used in Section 403.519, Florida Statutes?

**RECOMMENDATION:** Yes. Hines Unit 3 appears to be the most cost-effective alternative over the 25 years during which FPC's ratepayers will be obligated for the cost of the unit. (Colson)

**FPC:** Yes. FPC's detailed economic analysis of supply-side alternatives found Hines Unit 3 to be over \$92 million (2002 dollars) less expensive than the least cost alternative proposal. The least cost Greenfield Proposal (another combined cycle plant) was found to be more than \$187 million (2002 dollars) more expensive than Hines Unit 3.

**PACE:** No. FPC has failed to prove Hines Unit 3 is the most cost-effective alternative available due to uncertainties regarding water availability, estimated costs, operating heat rates, ability

to meet FRCC reliability guidelines and the actual need for Hines Unit 3.

**STAFF ANALYSIS:** FPC used an integrated resource planning process to evaluate FPC's need for power and available alternatives, including DSM in order to determine its Integrated Optimal Plan. (TR 28-29). FPC evaluated a variety of traditional and non-traditional supply sources using a commercially available computerized costing model named PROVIEW. The most cost-effective supply resource plans (or combinations) were evaluated, resulting in a ranking of various generation plans by system revenue requirement. Generally the generation plan with the lowest cumulative present worth revenue requirements (CPWRR) over the study period is chosen as the Base Generation Plan. (Composite Exhibit 1, pp, 18).

According to FPC's witness Murphy, FPC plans to build Hines Unit 3 at the HEC. That site contains the Hines 1 combined-cycle generation unit and associated facilities. Hines 2 is currently under construction with an expected commercial operation date in December 2003. Hines Unit 3 will share many of the existing facilities at the site with Hines 1 and 2. (TR 223).

**EQUIPMENT/SITE IMPACTS**

The total cost of Hines Unit 3 is approximately \$231 million (excluding AFUDC) in actual dollars. (TR 223). AFUDC is estimated to be approximately \$27 million, giving it a total installed cost of \$258 million. This cost was developed on the basis of replicating the design and layout of Hines unit 2. The project cost for Hines Unit 3 reflects competitive equipment pricing because FPC was able to negotiate and preserve beneficial combustion turbine equipment pricing and other favorable contract terms and conditions with Siemens Westinghouse and Gemma Power Systems. (TR 228, TR 240). In addition, FPC also has a cost advantage over the RFP respondents because it plans to site Hines Unit 3 on the existing HEC in Polk County. This will require minimal additional site preparation costs compared to a greenfield site which five of the seven bidders were proposing. (TR 228 - 229).

**COST-EFFECTIVE EVALUATION**

FPC's Integrated Resource Planning process established a resource plan with Hines Unit 3, with an in-service date of December 2005, as the least cost plan. (TR 33 - 34). This analysis was based on FPC's internal review of alternative technologies, as well as DSM (see Issue 5), for meeting FPC's need for power. Once this plan was finalized, FPC issued its RFP in November, 2001. (TR 110). As discussed in Issue 3, FPC received proposals from seven bidders. Five of the seven proposals were greenfield proposals (new generation at new sites) and two were system power proposals. There were four proposals that were put on the Short List and compared to FPC's self-build alternative, Hines Unit 3. FPC performed a significant amount of analysis, evaluating the price and non-price attributes of the four alternatives. The final analysis showed Hines Unit 3 to be approximately \$92 million (2002 dollars) less expensive than the least-cost alternative. (TR 42). The lowest cost greenfield proposal (another combined-cycle plant) was found to be more than \$187 million (2002 dollars) more expensive than Hines Unit 3. (TR 142).

**PACE Water Use Issue** - PACE alleges that the Southwest Florida Water Management District (SWFMUD) has raised concerns regarding Hines units 1 and 2 water consumption, which will impact the cost of siting Hines Unit 3. (PACE brief at 15). According to FPC's witness Hunter, ground water usage for Hines Unit 3 was approved in FPC's 1994 original site certification. (TR 308). This certification allowed up to 17.5 million gallons per day to be withdrawn from the aquifer to support the ultimate site capacity and 5 million gallons per day for the operation of Hines Unit 3. (TR 86, TR 321, TR 332). Therefore, staff recommends that the water issue raised by PACE will have minimal impact on the ultimate certification of Hines Unit 3. As with any other environmental cost that may come to light after a need determination has been issued, FPC should prudently manage its costs as it proceeds with construction and abandon its self-build project if it becomes less cost-effective than any alternative.

**PACE Cost-Effective Options** - PACE argued that other options, including shorter term purchased power arrangements, are available to FPC that are more cost-effective and that impose less risk to FPC's customers. According to witness Roeder's direct testimony, FPC placed the five proposals that passed the RFP's Minimum Evaluation Requirements in the optimization analysis. The

optimization analysis assessed the impacts of each proposal on total system costs. Such an analysis explicitly examines the relative impacts on system costs for fuel and variable O&M of the other units on FPC's system, and any impact the alternative would have on FPC's purchased power costs. The analysis showed that a resource plan built around Bidder E's proposal (five year purchase power) has the lowest future cost for FPC's customers of any of the responses received to the RFP. This analysis also showed Hines 3 to be approximately \$90 million less expensive than the least-cost proposal from Bidder E. (TR 116 - 120). FPC has assumed in its planning process that its ratepayers will be obligated for the costs of Hines 3 for 25 years. (Composite Exhibit 1, pp. 51).

**PACE Heat Rate Issue** - PACE alleged that FPC used different values for the heat rate for Hines Unit 3 than were listed in the RFP. (PACE brief at 16). According to FPC's witness Crisp, the heat rate used in the RFP was 7,100 BTU per kWh at 80 percent net operating factor. (TR 97). The heat rates used to evaluate proposals to the Hines unit were a spectrum from minimum load to full load conditions. The heat rate at full load, when the unit is projected to be most efficient, was stated to be 6,900 BTU per kWh. (TR 185). The record reflects that if the full load heat rate of 7,100 was used, the cost of Hines Unit 3 would increase approximately 20 million dollars. (TR 192). This does not affect the end result which showed Hines Unit 3 to be the most cost-effective alternative.

**PACE Underfrequency Issue** - PACE asserts that the potential for the Hines 3 generators to trip off if frequency drops to 58 Megahertz without any time delay does not meet current FRCC standards and will require remediation. (PACE brief at 12-14). PACE further asserts that there will be costs to bring the generators into compliance with FRCC standards, but the costs are currently unknown. PACE alleges that since the costs of remediation are unknown, the Hines 3 proposal cannot be considered the most cost effective option.



Staff disagrees with this argument. The record evidence in this case clearly demonstrates that a "fix" to this issue will be available prior to the unit being placed in service in December, 2005. (TR 232). Further, the record indicates that the fix may be as simple as replacing a single circuit. (TR 250-251). While the costs of the remediation may be unknown, staff does not believe this will amount to more than the \$90 million cost difference between Hines Unit 3 and the next nearest proposal.

**PACE Reserve Margin Issue** - PACE alleged that FPC's reserve margin of 17% in 2005-06 is adequate to ensure reliability and is undoubtedly more cost effective than building Hines Unit 3. (PACE brief at 11). Staff has addressed this in Issue 1.

For the foregoing reasons, staff recommends that Hines Unit 3 is the most cost effective alternative over the 25 years during which FPC's ratepayers will be obligated for the cost of the unit.

**ISSUE 5:** Are there any conservation measures taken by or reasonably available to Florida Power Corporation which might mitigate the need for the proposed power plant?

**RECOMMENDATION:** No. There are no conservation measures reasonably available to FPC which might mitigate the need for the proposed power plant. (Colson)

**FPC:** No. The Company has attempted to avoid or defer constructing the unit by considering and pursuing all demand-side options reasonably available to it, but the Company has nonetheless concluded that it cannot avoid or defer its need to build the unit.

**PACE:** No position.

**STAFF:** The Commission approved FPC's DSM Goals and DSM plan in Docket Nos. 971005-EG and 991789-EG, respectively. These cost-effective DSM programs include both dispatchable and non-dispatchable DSM resources. FPC's DSM programs have successfully met the Commission established DSM goals and if FPC achieves its

future goals, then there appears to be very little additional conservation measures that can be taken by or reasonably available which might mitigate the need for the proposed power plant. (TR 44). According to witness Crisp, FPC cannot avoid the need to build Hines Unit 3 by relying much more than they have on load management or any other conservation measures. FPC made the decision to seek permission to build Hines Unit 3 after screening various other supply-side and demand-side alternatives as part of FPC's resource planning process and then through conducting an RFP process. (TR 81 - 84).

Therefore, staff recommends that there appears to be no additional cost-effective conservation measures available that might mitigate FPC's need for Hines Unit 3.

**ISSUE 6:** Has Florida Power Corporation adequately ensured the availability of fuel commodity and transportation to serve Hines Unit 3?

**RECOMMENDATION:** Yes. While FPC has yet to sign a contract to supply natural gas to the proposed unit, FPC will provide the Commission with a copy of the signed contract for commodity and transportation to serve Hines Unit 3. (Makin)

**FPC:** Yes. Hines Unit 3 will have the ability to obtain natural gas that is both economic and readily available from two interstate gas pipelines, and will also be constructed so that distillate oil can be used as a back-up fuel.

**PACE:** No. Ensuring fuel transportation and fuel availability is accomplished through firm contracts, which Hines Unit 3 lacks. FPC stated that it should not contract for capacity and energy with bidders who do not have firm gas transportation contracts. FPC should be held to its own standard regarding fuel transportation.

**STAFF ANALYSIS:** At the present time there are no signed firm natural gas supply or transportation contracts in place. FPC witness Pamela Murphy indicated, however, that FPC is confident

that it will be able to arrange for all of the firm gas transportation service it will require for Hines Unit 3 in time to meet the expected in-service date for that unit. (TR 271). In addition witness Pamela Murphy states that FPC has relationships with a number of gas producers and marketers, and are confident that they will be able to negotiate a contract at competitive prices closer to the in-service date. It would not be cost-effective to execute those contracts now since most suppliers would require significant up-front and standby payments to reserve supply this far in advance. (TR 279).

Staff notes that the HEC is currently being served with natural gas for the Hines 1 plant, and in order to place Hines 2 in service by December, 2003, additional fuel will be required. In order to supply fuel to Hines Unit 3, it will only be necessary to add the laterals to the plant from the existing pipeline. Given that FPC currently has fuel supplies for both Hines 1 and Hines 2, staff does not foresee any difficulty in obtaining additional fuel for Hines Unit 3.

PACE asserts that FPC has not adequately ensured the supply and transportation of fuel to serve Hines Unit 3 because no contract has yet been signed. (PACE brief at 18). Staff believes that it is appropriate for FPC to gain regulatory approval for a generating unit prior to signing a firm gas transportation contract. The preponderance of the evidence indicated that FPC will not have difficulty acquiring fuel commodity or transportation. For the reasons stated herein, staff recommends that FPC has adequately ensured the availability of fuel commodity and transportation to serve Hines Unit 3.

**ISSUE 7:** Based on the resolution of the foregoing issues, should the Commission grant Florida Power Corporation's petition to determine the need for the proposed Hines Unit 3?

**RECOMMENDATION:** Yes. FPC's petition for determination of need for Hines Unit 3 meets the statutory requirement of Section 403.519, Florida Statutes, as discussed in prior issues. FPC should continue to monitor the cost-effectiveness of Hines Unit 3 prior to committing substantial capital dollars. (Colson, Stallcup, Makin, Harris)

**FPC:** Yes. For the foregoing reasons, as more fully developed in the testimony and exhibits filed by FPC in this proceeding, the Commission should grant FPC's petition for a determination of need for the proposed Hines Unit 3.

**PACE:** No. The Commission should not approve the expenditure of \$258 million for a power plant that does not meet FRCC reliability guidelines, in violation of Section 403.519, Florida Statutes. Moreover, without Hines 3, a 17% reserve margin exist in 2005-06, a figure that FPC admits provide system integrity and reliability.

**STAFF ANALYSIS:** FPC's petition for determination of need for Hines Unit 3 meets the statutory requirements of Section 403.519, Florida Statutes, as discussed in prior issues and summarized here:

- Hines Unit 3 will help ensure that FPC does not violate its Commission-approved stipulation to increase reserves to at least 20 percent by the summer of 2004.
- Hines Unit 3 will allow for a transition from reliance on load management to generation for reserves.
- The equipment supply arrangements for Hines Unit 3 provides a benefit to FPC's ratepayers.
- FPC's evaluation of alternative supply options, DSM options, and its RFP analysis shows Hines Unit 3 to be the most cost-effective option in the short-term and over the long-term.
- There are no conservation measures taken by or reasonably available to FPC which might mitigate the need for the proposed power plant.

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Based on the discussion above, which summarizes other issues within this recommendation, staff believes FPC's petition satisfies the statutory criteria. Therefore, staff recommends that FPC's petition for determination of need for Hines Unit 3 be granted.

**ISSUE 8:** Should this docket be closed?

**RECOMMENDATION:** The docket should be closed after the time for filing an appeal has run. (Harris, Stern)

**FPC:** Yes, following the issuance of an affirmative determination of need for Hines Unit 3.

**PACE:** Yes, after FPC's petition for need determination is denied. Alternatively, this docket should remain pending for additional evidence regarding whether Hines Unit 3 can safely be connected to the electric grid without violating FRCC reliability standards, particularly given FPC's unwillingness to assume the risk associated with the underfrequency issue.

**STAFF ANALYSIS:** Upon expiration of the appeal period, if no party has timely appealed the order, this docket should be closed.