

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Determination)
of Need of Hines Unit 2 Power)
Plant)
_____)

DOCKET NO. DD1064-EI

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ORIGINAL

**DIRECT TESTIMONY
OF W. JEFFREY PARDUE

ON BEHALF OF
FLORIDA POWER CORPORATION**

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**IN RE: PETITION FOR DETERMINATION OF NEED
BY FLORIDA POWER CORPORATION
FPSC DOCKET NO. _____**

DIRECT TESTIMONY OF W. JEFFREY PARDUE

I. INTRODUCTION AND BACKGROUND.

1 **Q. Please state your name and business address.**

2 **A.** My name is W. Jeffrey Pardue, and my business address is Florida Power
3 Corporation, One Power Plaza, 263 13th Avenue, South, St. Petersburg, Florida
4 33733.

5

6 **Q. By whom are you employed and in what position?**

7 **A.** I am employed by Florida Power Corporation (“FPC” or the “Company”), as the
8 Director of Environmental Services.

9

10 **Q. Please describe your duties and responsibilities with Florida Power**
11 **Corporation.**

12 **A.** As Director of Environmental Services, I am responsible for managing the
13 Company’s Environmental Services Department. The Environmental Services
14 Department consists of separate subject matter areas, including Air Programs, Water
15 Programs, Operations and Special Projects, Hazardous Materials Management and
16 Site Remediation, Corporate Compliance, and Natural Resources. The

1 Environmental Services Department serves as the primary interface with federal,
2 state, and local regulatory agencies and handles, among other things, all
3 ~~environmental siting, licensing, and permitting matters for the Company. The~~
4 Department also conducts or oversees all environmental monitoring, environmental
5 studies, and environmental impact assessments; audits environmental compliance;
6 and provides numerous other environmental services. Among these are: air
7 emission testing and monitoring, Prevention of Significant Deterioration (“PSD”)
8 review, Best Available Control Technology (“BACT”) analysis, air quality
9 modeling, Acid Rain compliance and reporting, Surface and Groundwater permitting
10 and assessments, new facility siting, site certification and permitting, site
11 remediation, and water supply analysis and permitting.

12
13 **Q. Please summarize your educational background.**

14 **A.** I earned a Bachelor of Science degree in Biology from Bowling Green State
15 University. I earned a Masters of Science degree in Biology from Wright State
16 University, and a Masters of Business Administration from the Florida Institute of
17 Technology.

18
19 **Q. Please summarize your employment history and work experience.**

20 **A.** Prior to coming to FPC in 1984 I was employed by the Tennessee Valley Authority
21 (“TVA”). I held various positions including project leader for multidisciplinary field
22 studies siting new generation for fossil, nuclear, and hydroelectric facilities. I

1 prepared environmental documentation for environmental impact statements, and I
2 designed and implemented studies to assess the impacts of power generation and
3 ~~transmission facilities on the environmental resources in the seven-state TVA area.~~

4 In 1984, I joined FPC as a senior environmental coordinator. Among other
5 responsibilities, I identified wetland boundaries using the vegetation index and
6 provided environmental input to the route site selection team for new transmission
7 and distribution line projects. I prepared the wetland boundary data and reviewed
8 that data with the Florida Department of Environmental Protection ("FDEP") as part
9 of the certification application and review of the proposed Lake Tarpon-Kathleen
10 500kV transmission line. I also conducted scientific studies and managed
11 environmental consultants in the conduct of various field studies and analyses. In
12 1987, I was promoted to supervisor of the Air & Water Programs in the
13 Environmental Services Department. In addition to performing my supervisory
14 responsibilities, I served as the primary point of accountability for all issues
15 involving air quality, water quality, and wetland resource permitting. I also served
16 on the route site selection team for transmission and distribution line site and route
17 selection.

18 In 1991, I was promoted to Manager, Environmental Programs. In this
19 position I was accountable for site selection, assessment, and permitting for power
20 generation projects as well as transmission line projects. I managed an expanding
21 technical staff in the areas of air quality, water quality, storage tank management,
22 and regulatory affairs. I was responsible for overseeing the installation of

1 continuous emission monitors throughout the system and provided recommendations
2 to senior management on environmental strategies and policies.

3 In 1994, I was promoted to my current position as Director of Environmental
4 Services. Generally my responsibilities are described above in response to the
5 question regarding my current position. More specifically, as it relates to this
6 testimony, I am responsible for obtaining site certification for Hines 2 at the Hines
7 Energy Complex ("HEC").

8
9 **Q. What is your experience in power plant siting and licensing?**

10 **A.** I prepared post-certification submittals for Crystal River Units 4 and 5 and
11 negotiated amendments to the Conditions of Certification at various times over the
12 past 15 years.

13 I represented the Company with respect to environmental analysis as part of
14 the HEC site selection process. During the site certification, I was responsible for
15 the review of air quality and water quality information and the analysis of
16 environmental impact.

17 I currently am responsible for obtaining certification for Hines 2 at the HEC.
18 This includes overall management of the project, providing technical resources,
19 overseeing all aspects of the application preparation, handling responses to
20 comments, meeting with regulatory agency managers, and ensuring that the
21 certification project is completed on schedule and under budget. I will also be

1 responsible for meeting with and briefing Cabinet Staff with respect to the Hines 2
2 project.

3
4 **II. PURPOSE AND SUMMARY OF TESTIMONY.**

5
6 **Q. What is the purpose of your testimony in this proceeding?**

7 A. I am testifying on behalf of FPC in support of its Petition for a Determination of
8 Need (1) to describe the HEC site, (2) to discuss the environmental benefits of the
9 HEC site and the Hines 2 power plant that FPC proposes to build, and (3) to discuss
10 the environmental approval process associated with the construction and operation of
11 the Hines 2 plant.

12
13 **Q. What are your responsibilities with respect to the Hines 2 power plant that is
14 the subject of this proceeding?**

15 A. I am responsible for preparation and submittal of the Supplemental Site Certification
16 Application for the proposed Hines 2 power plant, which includes the application for
17 PSD approval, obtaining the FDEP's approval of the PSD application, negotiating
18 Conditions of Certification with the participating regulatory agencies, and obtaining
19 certification approval from the Governor and Cabinet sitting as the Siting Board.

20

1 **III. DESCRIPTION OF THE SITE AND THE PROPOSED POWER PLANT.**

2

3 **Q. Are you familiar with the HEC site?**

4 A. Yes.

5

6 **Q. Please describe the HEC.**

7 A. The 8,200 acre HEC is located in an industrial section of southwest Polk County.
8 The HEC site had been altered and disturbed by prior mining activity.

9

10 **Q. Is the HEC permitted for electric power plant usage?**

11 A. Yes. In 1994, the Governor and Cabinet, sitting as the Siting Board pursuant to the
12 Florida Electrical Power Plant Siting Act ("PPSA"), granted certification to FPC to
13 construct and operate Hines Unit 1 ("Hines 1") and for 3,000 megawatts ("MW") of
14 ultimate site capacity. Similar to its proposed sister unit, Hines 2, the Hines 1 plant
15 consists of two combustion turbines ("CTs"), each equipped with one heat recovery
16 steam generator ("HRSG"), and a single steam turbine electrical generator ("ST").
17 The Siting Board specifically made a determination that the HEC had the ultimate
18 site capacity to support 3,000 MW of electrical generating facilities fired by either
19 natural gas or coal gasification. The original proceeding that culminated in that 1994
20 Certification included extensive evaluations of the worst case capacity constraints
21 and maximum potential environmental effects of the operation of the expected 3,000
22 MW of capacity. These evaluations included assessments of air quality impacts,

1 water quality and wildlife impacts, water use and noise impacts, socioeconomic
2 impacts and benefits, traffic impacts from construction and operation, and other
3 impacts of the entire planned capacity of 3,000 MW. This evaluation was
4 undertaken, in large measure, to provide assurances that the HEC has adequate air,
5 water, and land resources to accommodate additional electrical generating units like
6 those proposed in the current Supplemental Site Certification Application (“SSCA”).
7 Confirming the Polk County Board of County Commissioners' finding, the Siting
8 Board also concluded that the HEC was consistent and in compliance with the land
9 use plans and zoning requirements of Polk County.

10 After receiving the Certification, FPC constructed the 470 MW (nominal)
11 Hines 1 plant. Hines 1 began commercial operation in April 1999.

12

13 **Q. Are you familiar with the proposed Hines 2 plant?**

14 **A. Yes.**

15

16 **Q. Please briefly describe the proposed plant.**

17 **A.** The Hines 2 power block will be a state-of-the-art gas-fired, combined cycle power
18 plant with a nominal rating of 530 MW. FPC will build the plant at the HEC. The
19 Company proposes to place the plant into commercial operation by November 30,
20 2003. The plant will use distillate oil as a backup fuel source. The plant will be a
21 highly efficient, intermediate or baseload unit with a heat rate of 6,975 Btu/kWh.

22

1 **Q. What environmental permits are necessary for the construction and operation**
2 **of the proposed Hines 2 plant?**

3 A. Although the Company has previously obtained Site Certification from the Florida
4 Siting Board for an ultimate capacity of 3,000 MW at the HEC and for the
5 construction and operation of Hines 1, the proposed addition of Hines 2 requires the
6 approval of a Supplemental Site Certification Application (“SSCA”). Pursuant to
7 the requirements of the PPSA and Chapter 62-17, F.A.C., FPC has submitted a
8 SSCA for the purpose of building Hines 2. This SSCA will be reviewed by state
9 agencies, the water management district, local government, and others. After
10 extensive review, a DOAH administrative law judge will issue an order
11 recommending approval or denial to the Governor and Cabinet, sitting as the Siting
12 Board. If approval is recommended the FDEP will also recommend Conditions of
13 Certification as part of the Siting Board’s approval. Ultimately the Governor and
14 Cabinet will issue or deny Site Certification considering the need for power balanced
15 with the expected environmental impacts.

16
17 **Q. What information does FPC's Supplemental Site Certification Application**
18 **include?**

19 A. The SSCA addresses the environmental and socioeconomic aspects of the additional
20 generating unit at the HEC by presenting information on the existing natural and
21 human environments, the additional generating facilities proposed to be constructed
22 and operated, and the impacts of those additional facilities on those environments.

1 Much of the information contained in this SSCA is updated information from the
2 Site Certification Application filed in 1992 (the "1992 SCA") for Hines 1 and
3 ~~ultimate site certification for the HEC, with a focus on the environmental impacts of~~
4 the construction and operation of Hines 2. Similar to Hines 1, Hines 2 will consist of
5 two combustion turbines ("CTs"), each equipped with one heat recovery steam
6 generator ("HRSG"), and a single steam turbine electrical generator ("ST").
7 Existing and previously permitted infrastructure, including fuel delivery and storage
8 facilities, electrical transmission lines, potable water, wastewater treatment/disposal,
9 and transportation facilities at the HEC are adequate with some minor enhancements
10 for the operation of Hines 1 and 2.

11
12 **IV. ENVIRONMENTAL BENEFITS OF THE SITE AND THE PROPOSED**
13 **PLANT.**

14
15 **Q. What environmental benefits do the HEC and the proposed plant offer?**

16 A. The HEC and proposed plant offer several environmental benefits. First, Hines 2
17 will be located at the HEC, an existing power plant site. The HEC continues to
18 represent a beneficial reuse of an environmentally impacted mined-out phosphate
19 area and was specifically selected as a power plant site because of its minimal
20 environmental impact. As such, there were and are no major environmental
21 limitations. Most, if not all, of the environmental issues associated with the site were
22 resolved when Hines 1 was certified. Accordingly, Hines 2 requires only a

1 supplemental application and review that will require less time, and, as an additional
2 benefit, it will cost less to obtain the necessary environmental approvals.

3 ~~Because the Florida Siting Board approved the HEC for up to 3,000 MW and~~
4 given that the Company previously developed the property for the Hines 1 plant,
5 little additional development is necessary for Hines 2. In fact, the principal
6 infrastructure is already in place, including extensive site development (excavation,
7 fill, access roads, sewer systems), a 722 acre cooling pond, and a fully sized natural
8 gas lateral pipeline. Most other common facilities, such as the site administration
9 building including the control room, will require only minor modifications. There
10 will be some minor incremental increase in staffing. In addition, all onsite distillate
11 oil delivery, storage, and handling facilities, including unloading areas, piping, and
12 storage tank systems, and the containment tanks are in place and adequate for Hines 1
13 and 2. The existing on-site cooling pond provides circulating water for cooling of the
14 plant auxiliary systems and steam turbine condenser.

15 The HEC's large size also provides a substantial buffering of the proposed
16 plant, which minimizes environmental and socioeconomic impacts. The HEC is
17 located in a low population density area not close to any residential areas and is
18 zoned to accommodate electrical power plants.

19 FPC will enhance the wildlife corridor, which was acquired with FPC funds
20 during the initial certification, by conveying the Tiger Bay wetland to the state and
21 by granting a conservation easement over approximately 1,000 acres on the eastern
22 and northeastern areas of the property.

1 Vehicular access is provided by County Road 555 ("CR 555"), with rail access
2 provided by existing CSX rail lines, including an on-site rail spur. FPC completed a
3 traffic impact analysis to assess traffic impacts for the construction and operation of the
4 full build-out of the HEC (3,000 MW) on Polk County roadways. Conditions of
5 Certification addressing those impacts were included in the 1994 Certification. Area
6 roadways have capacity to accommodate traffic from construction and operation of
7 Hines 2 as previously demonstrated.

8 The existing Certification also minimizes potential impacts on water and air
9 quality. Under the terms of the original Site Certification, the facility is designed for
10 zero discharge of industrial wastewater to off-site surface waters. Process wastewater
11 streams are treated on-site and are used as makeup for the cooling pond. The major
12 consumption and/or loss of water occur through evaporation from the cooling pond,
13 both natural and from heat rejected by the Combined Cycle units. The proposed Hines
14 2 plant will utilize treated effluent and storm water for cooling with no discharge
15 offsite.

16 Under the 1994 Certification, FPC is required to secure alternative sources of
17 water, rather than use groundwater, for makeup cooling water for the first 940 MW of
18 generation except, if approved by the Southwest Florida Water Management District
19 ("SWFWMD"), in case of emergency. Reclaimed water from the City of Bartow, on-
20 site storm water runoff and water cropping (use of onsite rainfall collection basins), and
21 reuse of process water will be used to provide makeup water to the cooling pond during
22 operation of Hines 1 and 2.

1 The Company is also conducting research on a new project, the Aquifer
2 Recharge and Recovery Project ("ARRP"). This project, along with other initiatives
3 the Company is investigating, may serve to lessen future ultimate site demands for
4 groundwater withdrawal.

5 The existing site storm water management system (detention pond) is located
6 within the Plant Island area. This system is adequate for Hines 1 and 2 and provides
7 overflow to the onsite cooling pond. Ground water is currently used only to meet the
8 potable and sanitary needs of the facility.

9 In accordance with the existing Conditions of Certification, in order to enhance
10 flows to Camp Branch and McCullough Creek (and ultimately to the Peace River), FPC
11 has modified the drainage systems onsite and offsite in order to contribute runoff to
12 these surface water systems. No changes to these enhanced flows are required for
13 Hines 2.

14 Air emission control will be achieved using the best available control
15 technology. Selective catalytic reduction ("SCR") technology will be used to control
16 nitrogen oxide (NO_x) emission levels while firing natural gas. While firing distillate oil
17 as a backup, water injection along with SCR will be used to limit NO_x levels. The
18 combustion of clean fuels to minimize sulfur dioxide (SO₂) and particulate matter
19 emissions is accomplished by burning fuels low in ash and sulfur content in
20 conjunction with good combustion practices to ensure complete combustion. These
21 technologies will ensure compliance with applicable air quality standards.

1 Finally, noise impacts from the full 3,000 MW site were assessed for several
2 residential receptors around the HEC as part of the 1994 Certification. Fractional noise
3 increases observed at any nearby residential receptor will not be noticeable or
4 significant. The isolated location and buffer area around the HEC results in the lack of
5 a significant noise impact.

6
7 **Q. What is the licensing schedule for the Hines 2 plant?**

8 A. FPC filed the SSCA with the FDEP on July 24, 2000, which will allow for the
9 commencement of commercial operations by November 30, 2003.

10
11 **V. CONCLUSION.**

12
13 **Q. Do you have an opinion with respect to the ability of the Company to obtain all
14 necessary licenses to allow for commercial operation by November 30, 2003?**

15 A. Yes.

16
17 **Q. What is your opinion?**

18 A. Based on our review and analysis, it is my professional opinion that certification of
19 the Hines 2 plant should be approved by the Governor and Cabinet and the PSD
20 permit issued by FDEP in a timely fashion and in accordance with all applicable
21 environmental laws and regulations.

1 Q. Are you aware of any reason that the Hines 2 plant could not be successfully
2 approved?

3 A. No.

4

5 Q. Does this conclude your direct testimony?

6 A. Yes.