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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

AUG -5 AM 11:03

In re: Petition for Determination
of Need for of Hines Unit 4 Power Plant

COMMISSION
CLERK

DOCKET NO. 040817-E1
Submitted for filing:

DIRECT TESTIMONY
OF JOHN J. HUNTER

ON BEHALF OF
PROGRESS ENERGY FLORIDA

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IN RE: PETITION FOR DETERMINATION OF NEED

BY PROGRESS ENERGY FLORIDA

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DIRECT TESTIMONY OF JOHN J. HUNTER

I. INTRODUCTION AND QUALIFICATIONS

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

2 **A.** My name is John J. Hunter and I am employed by Progress Energy Florida (PEF
3 or the Company). My business address is 100 Central Avenue, St. Petersburg,
4 Florida, 33701.

5
6 **Q. Please state your position with the Company and describe your duties and
7 responsibilities in that position.**

8 **A.** I am employed by the Company as a Lead Environmental Specialist in the
9 Environmental Services Section of the Technical Services Department. My
10 primary responsibilities currently include project management of environmental
11 activities related to siting, licensing, and permitting of new electric power
12 generating facilities in the State of Florida. This includes activities related to
13 obtaining the necessary certification under Florida's Electrical Power Plant Siting
14 Act for new facilities, as well as any additional Federal environmental permits
15 required to construct new generating facilities. In addition to the above, I also
16 coordinate activities related to the management of water resources required to

1 support the existing and proposed water supply demands associated with the
2 Hines Energy Complex (HEC).

3
4 **Q. Please summarize your educational background and work experience.**

5 **A.** I earned a Bachelor of Science degree in Chemical Engineering from the
6 University of South Florida. Prior to coming to PEF in 2001, I was employed for
7 14 years by Tampa Electric Company (TECO) where I held various engineering
8 and supervisory positions within TECO's Environmental Affairs Department,
9 including Administrator of Water Programs (1995-1998) and Administrator of Air
10 Programs (1998-2000). In these various positions, I was responsible for ongoing
11 environmental permitting and compliance activities for existing generating
12 facilities, and I was involved in studies for the siting of new generation.

13 In 2001, I joined PEF where my responsibilities largely consist of those
14 previously outlined. More specifically, as it relates to this testimony, I am
15 responsible for obtaining the supplemental site certification for Hines Unit 4 at the
16 HEC. This includes overall management of the project, providing technical
17 resources, overseeing all aspects of the application preparation, handling
18 responses to comments, meeting with regulatory agency managers, and ensuring
19 that the certification of the project is completed on schedule.

20

21 **II. PURPOSE AND SUMMARY OF TESTIMONY**

22

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

1 A. I am testifying on behalf of PEF in support of its Petition for a Determination of
2 Need for Hines Unit 4 to (1) describe the HEC site, (2) discuss the environmental
3 benefits of the HEC site and the Hines 4 unit that Progress Energy Florida
4 proposes to build, and (3) discuss the environmental approval process associated
5 with the construction and operation of Hines 4.

6 I am responsible for preparation and submittal of the Supplemental Site
7 Certification Application (SSCA) for the proposed Hines 4 unit, which includes
8 the application for the Prevention of Significant Deterioration (PSD)/Air
9 Construction Permit approval, obtaining the Florida Department of Environmental
10 Protection (DEP) approval of the PSD application, negotiating appropriate
11 Conditions of Certification with the participating regulatory agencies for the
12 addition of the Hines 4 unit to the existing site, and obtaining final certification
13 approval from the Governor and Cabinet sitting as the Florida Power Plant Siting
14 Board.

15
16 **Q. Are you sponsoring any sections of Progress Energy Florida 's Need Study?**

17 A. Yes, I am sponsoring "Environmental Considerations" in Section II of the Need
18 Study.

19
20 **Q. Please summarize your testimony.**

21 A. I am responsible for preparation and submittal of the SSCA for the proposed
22 Hines 4 unit. The Hines 4 unit will be a state-of-the-art gas-fired, combined cycle
23 power unit that will be located at the HEC.

1 The HEC continues to represent a beneficial reuse of an environmentally
2 impacted, mined-out phosphate area that was specifically selected as a power
3 plant site because of its minimal environmental impact. Site certification
4 evaluations included assessments of air quality impacts, water quality and wildlife
5 impacts, water use and noise impacts, socioeconomic impacts and benefits, traffic
6 impacts from construction and operation, and other impacts of the entire planned
7 site capacity of 3,000 megawatts (MW).

8 Hines 4 requires only a supplemental application and review that will
9 require less time, and, as an additional benefit, it will cost less to obtain the
10 necessary environmental approvals. In the original Hines 1 proceeding, the Siting
11 Board specifically made a determination that the HEC had the ultimate site
12 capacity to support 3,000 MW of electrical generating facilities fired by either
13 natural gas or coal gasification.

14 Based on my review and analysis, it is my professional opinion that
15 certification of the Hines 4 unit should be approved by the Governor and Cabinet
16 and the PSD permit issued by DEP in a timely fashion and in accordance with all
17 applicable environmental laws and regulations to allow for its commercial
18 operation by December 2007.

19
20 **III. DESCRIPTION OF THE SITE AND THE PROPOSED UNIT**

21
22 **Q. Is the HEC permitted for electric power plant usage?**

1 A. Yes. In 1994, the Governor and Cabinet, sitting as the Siting Board pursuant to
2 the Florida Electrical Power Plant Siting Act, granted certification to Florida
3 Power to construct and operate Hines Unit 1 and for 3,000 MWs of ultimate site
4 capacity. In 2001 and 2003, the Siting Board approved the separate SSCA's
5 allowing for the construction and operation of Hines Units 2 and 3, respectively.

6 In the original proceeding, the Siting Board specifically made a
7 determination that the HEC had the ultimate site capacity to support 3,000 MWs
8 of electrical generating facilities fired by either natural gas or coal gasification.
9 The original proceeding that culminated in that 1994 Certification included
10 extensive evaluations of the worst case capacity constraints and maximum
11 potential environmental effects of the operation of the expected 3,000s MW of
12 capacity. These evaluations included assessments of air quality impacts, water
13 quality and wildlife impacts, water use and noise impacts, socioeconomic impacts
14 and benefits, traffic impacts from construction and operation, and other impacts of
15 the entire planned capacity of 3,000 MWs. This evaluation was undertaken, in
16 large measure, to provide assurances that the HEC has adequate air, water, and
17 land resources to accommodate additional electrical generating units like those
18 proposed in the current SSCA. Confirming the Polk County Board of County
19 Commissioners' finding, the Siting Board also concluded that the HEC was
20 consistent, and in compliance, with the land use plans and zoning requirements of
21 Polk County.

22 After receiving the initial Certification, the Company constructed the
23 Hines 1 unit, which began commercial operation in April 1999. Under previous

1 SSCA processes, the Hines 2 and Hines 3 units were approved. The Hines 2 unit
2 has been constructed and began commercial operation in December 2003. The
3 Hines 3 unit is currently under construction and is expected to begin commercial
4 operation in December 2005. The combined total power rating for these three
5 units is approximately 1500 MWs, half of the certified site capability.

6

7 **Q. Please briefly describe the proposed unit.**

8 A. The Hines 4 unit will be a natural gas-fired, combined cycle power block
9 consisting of two combustion turbines, two heat recovery steam generators and
10 one steam turbine generator. The Hines 4 unit will add approximately 500 MWs
11 of additional generation capacity to the HEC site. The Company proposes to place
12 the unit into commercial operation in December 2007. The Hines 4 unit will also
13 be capable of firing a low sulfur (0.05 percent) distillate fuel oil as a backup to
14 natural gas.

15

16 **Q. What environmental permits are necessary for the construction and
17 operation of the proposed Hines 4 unit?**

18 A. Siting Board approval of the Conditions of Certification developed through the
19 SSCA process and the PSD/Air Construction permit are necessary to begin
20 construction and operation of Hines 4. Although the Company has previously
21 obtained Site Certification from the Florida Siting Board for an ultimate capacity
22 of 3,000 MWs at the HEC, and for the construction and operation of the Hines 1,
23 2 and 3 units, the proposed addition of Hines 4 requires that a SSCA process

1 specific to the issues related to Hines 4 be performed and approved. Pursuant to
2 the requirements of the Electrical Power Plant Siting Act and Chapter 62-17,
3 F.A.C., Progress Energy Florida has submitted a SSCA for the purpose of adding
4 the Hines 4 unit to the HEC. This SSCA will be reviewed by various state and
5 local agencies, including the DEP, the Southwest Florida Water Management
6 District, local government, and others. After extensive review, a Department of
7 Administrative Hearings (DOAH) administrative law judge will issue an order
8 recommending approval or denial to the Governor and Cabinet, sitting as the
9 Siting Board. If approval is recommended, the Florida DEP Siting Office will
10 also recommend Conditions of Certification as part of the Siting Board's
11 approval. Ultimately the Governor and Cabinet will issue or deny Site
12 Certification for the addition of the Hines 4 unit to the HEC site, considering the
13 need for power balanced with the expected environmental impacts.

14
15 **Q. What information does Progress Energy Florida's SSCA include?**

16 A. The SSCA addresses the environmental and socioeconomic aspects of the
17 additional generating unit at the HEC by presenting information on the existing
18 natural and human environments, the additional generating facilities proposed to
19 be constructed and operated, and the impacts of those additional facilities on those
20 environments. Much of the information contained in this SSCA is updated
21 information from the SCA filed in 1992 for Hines 1 and ultimate site certification
22 for the HEC, as well as the SSCA's for Hines 2 and 3, with a focus on the
23 environmental impacts of the construction and operation of Hines 4. Similar to

1 Hines 1, 2 and 3, Hines 4 will consist of two combustion turbines, each equipped
2 with one heat recovery steam generator, and a single steam turbine electrical
3 generator.

4

5 **IV. ENVIRONMENTAL BENEFITS OF THE SITE AND THE PROPOSED**
6 **UNIT**

7

8 **Q. What environmental benefits do the HEC and the proposed unit offer?**

9 A. Hines 4 will be located adjacent to Hines 3 at the HEC, an existing power plant
10 site in Polk County, Florida, that the Florida Siting Board approved on January
11 25, 1994 for up to 3,000 MW of generating capacity. The addition of Hines 4 to
12 the site is well within the confines of the site's ultimate generating capacity. The
13 HEC is an 8,200-acre site located on land used formerly for a phosphate mining
14 operation. Progress Energy Florida specifically selected the HEC as a power
15 plant site because of its minimal environmental impact. As such, there are no
16 major environmental limitations that will be associated with the addition of the
17 Hines 4 unit to the site. Most, if not all, of the environmental issues associated
18 with the site were resolved during the initial certification of the site, along with
19 the first Hines 1 unit. Accordingly, Hines 4 requires only a supplemental
20 application and review that will require less time, and, as an additional benefit, it
21 will cost less to obtain the necessary environmental approvals.

22 With regard to air emissions, Hines 4 will be considered a major stationary
23 emission source and will be subject to Prevention of Significant Deterioration

1 (PSD) permitting requirements. Air emissions will be minimal because the Hines
2 4 unit will burn a relatively clean fuel with good combustion practices to ensure
3 complete combustion and will use appropriate emission control technologies.
4 Combined cycle units operating on natural gas, like the Hines 4 unit, are one of
5 the cleanest sources of fossil generation.

6 Both natural gas and distillate fuel oil are low sulfur, low ash fuels. Flue
7 gas is the only byproduct of the combustion process at the HEC, whether burning
8 natural gas or distillate fuel oil. Full load nitrogen oxide (NOx) emission levels of
9 2.5 ppm or less are expected for Hines 4 while burning natural gas. This will
10 require the installation of selective catalytic reduction (SCR) technology to
11 control NOx emission levels. While firing distillate fuel oil as a backup fuel,
12 water injection along with SCR will be used to limit NOx levels.

13 The HEC is a zero surface water discharge facility with respect to the
14 National Pollution Discharge Elimination System (NPDES) program for industrial
15 wastewater, and therefore does not require a NPDES water discharge permit.
16 Process wastewater streams are treated and retained on-site or are returned to the
17 cooling pond as a source of make-up water. An on-site groundwater monitoring
18 system is in place to monitor groundwater discharges.

19 Water consumption at the site occurs primarily through evaporation from
20 the cooling pond. Accordingly, a key feature of the HEC design is the existing
21 cooling pond, which serves as the heat dissipation device and the source of most
22 process water at the site. Additional cooling pond modifications will be required
23 for the Hines 4 addition.

1 Reclaimed water from the City of Bartow, direct rainfall, on-site storm
2 water runoff, and water cropping (use of on-site rainfall collection basins), limited
3 groundwater, and re-use of process water provide the makeup cooling water
4 required to maintain the cooling pond level within acceptable operating limits.
5 The incremental water supply necessary to support the addition of Hines 4 to the
6 site will come from additional groundwater. Alternative water supply sources
7 will be utilized to offset the incremental groundwater if they become available.

8 Because the Florida Siting Board approved the HEC for up to 3,000 MWs,
9 and given that the Company developed the property to support the construction
10 and operation of the Hines 1, 2 and 3 units, little additional development is
11 necessary for Hines 4. In fact, the principal infrastructure is already in place,
12 including extensive site development (excavation, fill, access roads, sewer
13 systems), a cooling pond, and two fully-sized natural gas lateral pipelines. Many
14 other common facilities will require only minor modifications to support the
15 addition of Hines 4.

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

20 County Road 555 provides vehicular access, with rail access provided by
21 existing CSX rail lines, including an on-site rail spur. Progress Energy Florida
22 completed a traffic impact analysis to assess traffic impacts for the construction and
23 operation of the full build-out of the HEC (3,000 MWs) on Polk County roadways.

1 Conditions of Certification addressing those impacts were included in the original
2 1994 Certification. Area roadways have capacity to accommodate traffic from
3 construction and operation of Hines 4 as previously demonstrated.

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

9
10 **Q. What is the licensing schedule for the Hines 4 unit?**

11 A. Progress Energy Florida filed the SSCA and the PSD/Air Construction Permit
12 Application with the Florida DEP in August 2004 for the Hines unit 4. The final
13 approvals are expected prior to the end of 2007. This schedule will allow for the
14 commencement of commercial operations of Hines 4 by December 2007.

15
16 **V. CONCLUSION**

17
18 **Q. What is your opinion regarding the Company's ability to obtain all necessary**
19 **licenses to allow for commercial operation by December 2007?**

20 A. Based on my review and analysis, it is my professional opinion that certification
21 of the Hines 4 unit should be approved by the Governor and Cabinet and the PSD
22 permit issued by Florida DEP in a timely fashion and in accordance with all
23 applicable environmental laws and regulations.

1

2 **Q. Are you aware of any reason why the Hines 4 unit would not be successfully**
3 **approved?**

4 A. No.

5

6 **Q. Does this conclude your direct testimony?**

7 A. Yes.