

STATE OF FLORIDA
DIVISION OF ADMINISTRATIVE HEARINGS

IN RE: PROGRESS ENERGY FLORIDA)
LEVY NUCLEAR PROJECT UNITS 1)
AND 2) Case No. 08-2727EPP
_____)

RECOMMENDED ORDER ON CERTIFICATION

Pursuant to notice, the Division of Administrative Hearings, by its duly-designated Administrative Law Judge, J. Lawrence Johnston, held a certification hearing in the above-styled case on February 23, 24, and 26 and March 3, and 9-12, 2009, in Inglis, Crystal River, Lutz, Brooksville, and The Villages, Florida.

APPEARANCES

For Progress Energy Florida:

Douglas S. Roberts, Esquire
Brooke E. Lewis, Esquire
Hopping Green & Sams, P.A.
Post Office Box 6526
Tallahassee, Florida 32314-6526

Lawrence Curtin, Esquire
Gigi Rollini, Esquire
Holland & Knight, LLP
315 South Calhoun Street, Suite 600
Tallahassee, Florida 32301-1872

For the Department of Environmental Protection:

W. Douglas Beason, Esquire
Department of Environmental Protection
3900 Commonwealth Boulevard
Mail Station 35
Tallahassee, Florida 32399-3000

For Levy County:

Anne Bast Brown, Esquire
Levy County Attorney
380 South Court Street
Bronson, Florida 32621-6517

For Hillsborough County:

Marva M. Taylor, Esquire
Hillsborough County Attorney's Office
601 East Kennedy Boulevard, 27th Floor
Tampa, Florida 33602-4156

For City of Tampa:

Janice McLean, Esquire
Office of the City Attorney
Old City Hall, 5th Floor
315 East Kennedy Boulevard
Tampa, Florida 33602-5211

For the Southern Alliance for Clean Energy:

E. Leon Jacobs, Esquire
Williams & Jacobs
1720 South Gadsden Street, Suite 201
Tallahassee, Florida 32301-5506

STATEMENT OF THE ISSUES

The issues to be resolved in this proceeding are: whether the Governor and Cabinet, sitting as the Siting Board, should approve the application of Progress Energy Florida (PEF) to certify and license the construction and operation of a 2200 megawatt (MW) (nominal) nuclear electrical generating facility and associated facilities, including electrical transmission lines; and, if so, what conditions of certification should be imposed.

PRELIMINARY STATEMENT

This proceeding was conducted pursuant to the Florida Electrical Power Plant Siting Act (PPSA), Section 403, Part II, Florida Statutes, and Florida Administrative Code Chapter 62-17, to consider PEF's application for certification of the Levy Nuclear Project Units 1 and 2, associated facilities and nine electrical transmission line corridors (Project).¹

On August 12, 2008, the Florida Public Service Commission (PSC) issued a determination of need for the Project. That order was not appealed and is now final.

On June 2, 2008, PEF filed its application for site certification (SCA) with the Department of Environmental Protection (DEP). The application was distributed to 28 agencies, with multiple copies provided to several of those agencies. Agencies requested, and PEF provided, additional information on the Project. DEP found the transmission line portion of the application complete on August 13, 2008. The plant portion of the application was found complete on October 30, 2008.

PEF exercised its option pursuant to Section 403.5064(1)(b), Florida Statutes, to allow parties to file alternate electrical transmission line corridors. However, no alternate transmission line corridors were filed in this proceeding.

On October 6, 2008, PEF amended the SCA to remove sections addressing two proposed substations called Citrus and Central Florida South. On November 26, 2008, PEF amended the SCA to remove sections addressing a proposed rail corridor.

Various reviewing agencies have submitted reports and have proposed conditions of certification. DEP filed its corrected Staff Analysis Report (SAR) for the transmission line portion of the application on September 26, 2008. On January 12, 2009, DEP issued its SAR for the plant portion of the application, incorporating the reports of the reviewing agencies and proposing a compiled set of conditions of certification for the plant and associated facilities, including transmission lines. These compiled conditions of certification have been superseded by the Fourth Amended Conditions of Certification set forth in DEP Exhibit 1, as amended.

PEF and DEP are parties to the certification hearing pursuant to Section 403.508(3)(b), Florida Statutes. The following filed notices of intent to be parties: (1) the Environmental Protection Commission of Hillsborough County (Hillsborough EPC); (2) Hernando County; (3) Sumter County; (4) the Southwest Florida Water Management District (SWFWMD); (5) Polk County; (6) the Florida Department of Community Affairs (DCA); (7) Lake County; (8) City of Oldsmar; (9) Hillsborough County; (10) Levy County; (11) the St. John's River Water

Management District (SJRWMD); (12) Citrus County; (13) the Rainbow River Railroad Committee (RRRC); (14) the Rainbow Springs Property Owners Association, Inc.; (15) the City of Dunnellon; (16) the City of Tampa; (17) Marion County; (18) the Suwannee-St. John's Group of the Sierra Club (Sierra Club); (19) the Florida Fish and Wildlife Conservation Commission (FWC); (20) Pinellas County; (21) the Florida Department of Transportation (DOT); and (22) the City of Wildwood.

The following parties intervened: the Withlacoochee Area Residents, Inc. (WAR); Calvin Partin, LeRoy Partin, Anne Stevens, Mary Holmes, Mary Humphries, John Lott, and Louise Partin (collectively the Partin Family); Cool Springs Farm, LLC; Southern Alliance for Clean Energy (SACE); Rainbow IV Partners, RLLP; Rainbow IV Investments, RLLP; and the RRRC.

The Partin Family; the RRRC; the Rainbow Springs Property Owners Association; Cool Springs Farm, LLC; Rainbow IV Partners, RLLP; Rainbow IV Investments, RLLP; WAR; and Sierra Club all subsequently voluntarily withdrew from this proceeding.

Hernando County, Hillsborough County, Levy County, and Sumter County all requested that public hearings be held within their respective county boundaries concerning transmission facilities pursuant to Section 403.527(4), Florida Statutes, which was incorporated in the PPSA pursuant to Section 403.5064(4), Florida Statutes. The intent of these public

hearings is to give members of the public who reside within the jurisdiction of the local government and who are not parties to the certification hearing an opportunity to provide testimony.

See § 403.527(4)(b), Fla. Stat.

Citrus County and Levy County issued determinations on July 17, 2008, and September 23, 2008, respectively, that components of the Project were consistent with their land use plans and zoning ordinances. Pursuant to Section 403.5115(1)(c), Florida Statutes, PEF timely published notice of Citrus and Levy Counties' Determinations of Land Use and Zoning Consistency on August 1, 2008, and October 16, 2008, respectively. No person challenged these determinations; therefore, land use hearings pursuant to Section 403.50665, Florida Statutes, were not required.

On January 26, 2009, PEF filed a Motion to Strike Portions of Southern Alliance for Clean Energy's Petition to Intervene in part on the ground that the PSC already has determined issues relating to need and reliability and in part on the ground that radiological safety is preempted under the Supremacy Clause of the United States Constitution by federal regulation of nuclear energy by the Nuclear Regulatory Commission (NRC). On February 11, 2009, an Order on Motion to Strike was entered. Issues relating to need and reliability were stricken to the extent of the matters properly determined by the PSC under

Section 403.519, Florida Statutes; and radiological safety issues were stricken under the Supremacy Clause. As a result, those issues were not considered in the certification hearing.

The parties entered into a detailed prehearing stipulation prior to the certification hearing, agreeing to numerous findings of fact and conclusions of law. All agency parties who provided position statements recommended or did not object to certification of the Project. Of the now-remaining parties, only SACE recommended that the Project not be certified.

All notices required by law were timely published in accordance with Section 403.5115, Florida Statutes. The certification hearing was held on February 23, 24, and 26 and March 3, and 9-12, 2009. At the final hearing, PEF presented the testimony of twenty-five witnesses, mostly experts, and had PEF Exhibits 1-32, 36-39, 42-45, 55-76, 78, 80-83, 85-91, 93-96, and 98-148 admitted into evidence. DEP presented two witnesses and had DEP Exhibits 1 (as amended) and 2 admitted into evidence. No other party presented testimony or exhibits.

Public testimony and comment were also received during the hearing: in Inglis, on February 26, 2009; in Crystal River, on March 3 and 9, 2009; in Lutz, on March 10, 2009; in Brooksville, on March 11, 2009; and in The Villages on March 12, 2009. A total of thirty hours was devoted to receiving public comment from approximately 85 individuals at these six separate

sessions. Public Exhibits 1-30 also were received, some subject to valid hearsay objections by PEF. (Three exhibits were submitted by members of the public who did not attend any public comment session.) PEF presented rebuttal evidence during the final public testimony session in The Villages.

At the conclusion of the hearing, the parties were allowed to file proposed recommended orders (PROs). The Transcript of the final hearing (including four volumes of hearing transcript, plus one volume for each public testimony session) was filed with the Division of Administrative Hearings on April 6, 2009. After two agreed requests for extensions of time were granted, PEF and DEP filed a joint PRO on April 24, 2009. SACE filed a PRO a day late. Both PROs have been considered in the preparation of this Recommended Order.

FINDINGS OF FACT

Background

1. Florida Power Corporation, doing business as Progress Energy Florida, Inc. (PEF), provides electricity and related services to approximately 1.7 million customers in the state of Florida. PEF's retail service area spans 35 counties over about 20,000 square miles in central and west Florida. In Florida, PEF operates and maintains more than 43,600 miles of distribution and transmission lines that serve a population of more than 5 million people.

2. PEF owns and operates a diverse mix of electrical generating units in Florida, including approximately 47 combustion turbines, 5 combined cycle units, 12 fossil units, and one nuclear unit at PEF's Crystal River Energy Complex (CREC). The CREC is located in northwest Citrus County approximately four miles west of U.S. Highway 19 on the Gulf of Mexico. There are five generating facilities within the CREC; four units are coal-fired and one is a nuclear unit. PEF considered locating new nuclear generating capacity at the CREC, but determined that would concentrate too much electrical generation at one site.

3. PEF proposes to build and operate a two-unit nuclear-powered electrical generating facility in Levy County (LNP). Directly associated facilities include a heavy haul road used for construction (Levy County), two site access roads (Levy County), and cooling water intake and discharge pipelines (Levy and Citrus Counties). PEF also seeks certification of nine transmission corridors associated with eleven electrical transmission lines:

(a) Citrus 1 and 2 Transmission Lines – proposed LNP to proposed Citrus Substation, two 500-kV Transmission Lines (Levy and Citrus Counties), also referred to as the "LPC" Lines;

(b) Crystal River Transmission Line – proposed LND to existing CREC Switchyard, one 500-kV Transmission Line (Levy and Citrus Counties), also referred to as the "LCR" Line;

(c) Sumter Transmission Line – proposed LNP to proposed Central Florida South Substation, one 500-kV Transmission Line (Levy, Citrus, Marion, Sumter and Lake Counties and Municipalities of Wildwood and Leesburg), also referred to as the "LCFS" Line;

(d) Levy North Transmission Line – proposed LNP to existing 69-kV Inglis-High Springs Transmission Line, one 69-kV Transmission Line for LNP construction/administration (Levy County), also referred to as the "IS" Line;

(e) Levy South Transmission Line – proposed LNP to existing 69-kV Inglis-Ocala Transmission Line, one 69-kV Transmission Line for LNP construction/administration (Levy County and Town of Inglis), also referred to as the "IO" Line;

(f) Brookridge Transmission Line – existing CREC Switchyard to existing Brookridge Substation, one 230 kV Transmission Line (Citrus and Hernando Counties), also referred to as the "CB" Line;

(g) Brooksville West Transmission Line – existing Brookridge Substation to existing Brooksville West Substation, one 230-kV Transmission Line (Hernando County), also referred to as the "BBW" Line;

(h) Crystal River East 1 and 2 Transmission Lines – proposed Citrus Substation to existing Crystal River East Substation, two 230-kV Transmission Lines (Citrus County), also referred to as the "CCRE" Lines; and

(i) Polk-Hillsborough-Pinellas Transmission Line – existing Kathleen Substation to existing Lake Tarpon Substation, one 230-kV Transmission Line (Polk, Hillsborough and Pinellas Counties and municipalities of Tampa, Plant City and Oldsmar), also referred to as the "Kathleen" Line.

Need for the Project

4. The PSC issued its Final Order determining the need for the Project on August 12, 2008. The PSC found: "a need for Levy Units 1 and 2, taking into account the need for electric system reliability and integrity"; "a need for Levy Units 1 and 2, taking into account the need for fuel diversity"; "a need for Levy Units 1 and 2, taking into account the need for base-load generating capacity"; "a need for Levy Units 1 and 2, taking into account the need for adequate electricity at a reasonable cost"; "[t]here are no renewable energy sources and technologies or conservation measures taken by or reasonably available to PEF which might mitigate the need for Levy Units 1 and 2"; and "Levy Units 1 and 2 will provide the most cost-effective source of power."

5. The PSC also found a need for the associated transmission lines. New transmission lines are required to interconnect and integrate the proposed plant into PEF's existing transmission grid and to reliably deliver bulk power to PEF's load centers. Load flow studies were conducted by PEF system planners to identify the appropriate transmission end-points and voltages. The proposed transmission lines in PEF's proposed corridors satisfy the need for transmission lines as determined by the PSC.

Public Notice and Outreach

6. PEF has engaged in extensive public outreach for the selection of the LNP site and for the transmission line corridors.

7. With regard to the plant portion of the Project, PEF's outreach efforts have included communications with local community leaders, press releases, communications with state and federal legislators, dissemination of information to the general public and property owners in the vicinity of the plant via mailings and open houses, and participation in community and advisory groups.

8. With regard to the electrical transmission line portion of the Project, public involvement has been key to the corridor selection process. PEF developed a Community Partnership for Energy Planning (CPEP) process to gain feedback

from members of the community in a manner that would most effectively involve the community in the transmission line corridor selection process.

9. Through the CPEP process, PEF established leadership teams in three geographic regions: Hillsborough, Pinellas, Pasco, and Polk Counties; Citrus, Hernando, and Levy Counties; and Lake, Marion, and Sumter Counties. The leadership teams identified and selected more than 100 community representatives to participate in regional Utility Search Conferences. The Utility Search Conferences involved intensive two-day discussions of local issues and the future of electricity supply in the region. The purpose of the conferences was to inform the participants about the Project, to gain public input, and to allow participants to nominate community members to become part of the Community Working Groups for the remainder of the Project. PEF formed the Community Working Groups to further study and refine the recommendations of the conferences as well as to provide ongoing input to PEF throughout the Project.

10. PEF also held open houses in February and March 2008 to involve the public in the transmission line corridor selection process. PEF used newspaper advertisements, press releases, and direct mail letters to facilitate public awareness of the open houses. Over 2,900 people attended the open houses,

and PEF received completed written questionnaires from 2,071 attendees.

11. The goal of PEF's public outreach program (with regard to both the plant and transmission lines) was to provide information in a transparent manner to the public and to provide ample opportunity and many avenues for the public to provide input during all phases of the Project. In total, PEF has conducted over 40 public presentations and sent communications to more than 125,000 property owners and stakeholders regarding the Project. Many of PEF's outreach efforts have been beyond the efforts required by law.

12. Pursuant to Section 403.5115(6), Florida Statutes, PEF provided direct notice by mail of the filing of the SCA to all landowners whose property and residences are located within: (1) three miles of the proposed main site boundaries of the LNP; (2) one-quarter mile of a transmission line corridor that only includes a transmission line as defined by Section 403.522(22), Florida Statutes; and (3) one-quarter mile for all other linear associated facilities extending away from the main site boundary. PEF timely submitted a list of the landowners and residences notified to DEP's Siting Coordination Office (SCO), as required by Section 403.5115(6)(b), Florida Statutes.

13. PEF made copies of the SCA available at two of its offices and ten public libraries. In addition, PEF provided

copies to all local governments and agencies within whose jurisdiction portions of the Project will be located. DEP made an electronic version of the document available on its website.

14. On June 19, 2008, PEF published notice of the filing of the SCA in the Ocala Star-Banner, the Hernando Today, the Tampa Tribune, The Lakeland Ledger, The Villages Daily Sun, the Levy County Journal, the Orlando Sentinel, the Gainesville Sun, the Citrus County Chronicle, the Sumter County Times, the Hernando Times, and the North Pinellas Times, satisfying the requirements of Section 403.5115(1)(b), Florida Statutes, and Florida Administrative Code Rule 62-17.281(3). On December 18, 2008, PEF published notice of the certification hearing in the same newspapers, satisfying the requirements of Section 403.5115(1)(e), Florida Statutes, and Florida Administrative Code Rule 62-17.281(7). PEF published amended notices of the site certification hearing in the same newspapers on February 17, 2009. DEP also published notices in the Florida Administrative Weekly. All notices required by law were timely published and/or provided in accordance with Section 403.5115, Florida Statutes.

Agency Reports and Stipulations

15. Agency reports and proposed conditions of certification on the plant-related facilities of the Project were submitted to DEP by: (1) the PSC; (2) DCA; (3) SWFWMD; (4)

Levy County; (5) FWC; (6) the Withlacoochee Regional Planning Council; and (7) DOT. All of these agencies either recommended approval of the Project or otherwise did not object to certification. Although Citrus County did not file an agency report, it recommended approval of the LNP in the prehearing stipulation of the parties.

16. Affected state, regional, and local agencies reviewed the SCA and submitted to DEP reports concerning the impact of the transmission lines on matters within their respective jurisdictions and proposed conditions of certification, as required by Section 403.507(2), Florida Statutes. None of the agencies involved in the review process have recommended that the proposed electrical transmission line corridors be denied or modified. On September 25, 2008, DEP issued its written analysis on the transmission line portion of the Project, incorporating the reports of the reviewing agencies and proposing a compiled set of conditions of certification. The conditions of certification were subsequently revised to reflect agreed-upon language. DEP recommended that the PEF proposed transmission line corridors be certified subject to the conditions of certification.

17. On January 12, 2009, DEP prepared a Staff Analysis Report (SAR) compiling all of the agency reports on the power plant, proposing conditions of certification, and making an

overall recommendation. DEP recommended certification of the Project subject to conditions of certification. The conditions of certification attached to the SAR have been superseded by the Fourth Amended Conditions of Certification filed by DEP as DEP Exhibit 1 on March 23, 2009. PEF is committed to constructing the LNP in accord with these conditions.

I. Plant and Associated Facilities²

Project Overview

18. PEF's proposed nuclear-powered electric generating facility (the LNP) will be located in Levy County. The LNP site is east of U.S. Highway 19 and approximately four miles north of the Town of Inglis and the Levy-Citrus County border.

19. The LNP site contains approximately 3,105 acres, with the two reactors and ancillary power production support facilities located near the center of the site. The majority of the LNP site is currently active silviculture and is unimproved. The proposed heavy haul road and pipelines will be located in corridors south of the LNP site. Two site access roads will tie into U.S. Highway 19 west of the site and proceed east to the main plant area.

20. PEF also owns a second 2,000-acre tract contiguous with the southern boundary of the LNP site, which provides access to a water supply in the Cross Florida Barge Canal (CFBC)

as well as containing the heavy haul road and electrical transmission line corridors that exit the LNP site.

Project Description

21. The LNP will include two 1,100 megawatt (MW) (nominal) generating units (LNP 1 and LNP 2) designed by Westinghouse Electric Company, LLC (Westinghouse). The reactor design has received an official design certification from the NRC and is referred to as the Westinghouse AP1000 Reactor (AP1000). The AP1000 is a standardized, advanced passive pressurized-water nuclear reactor. PEF proposes to place LNP 1 in commercial service by 2016 and LNP 2 in commercial service by 2017.

22. In the AP1000, the reactor core heats water which flows through the reactor cooling system in the primary loop. The reactor coolant pump circulates water through the reactor core. A pressurizer is used to maintain a constant pressure in the primary loop. The heated water flows to the steam generator and through a combination of U-shaped tubes, transferring heat to a separate, independent closed-loop water system, or the secondary loop. Inside the steam generator, the water in the secondary loop boils and is separated in dryers which produce high quality steam. The reactor, the four coolant pumps, and the two steam generators are contained in the containment shield building for each unit. Within the shield building, a steel containment structure surrounds the reactor and steam

generators. A passive cooling water tank, which will provide emergency cooling, sits in the top of the containment shield building.

23. The steam in the secondary loop is routed to the adjacent turbine building where it goes into a high-pressure turbine and then three low pressure turbines. The steam produces the force to turn the turbines, which then turn the electrical generator. Electricity is then sent to the on-site switchyard for transmission.

24. The steam exhausting from the turbines moves into the condenser where it comes into contact with the cold surfaces of the tubes in the condenser, which contain water circulating from the cooling tower. The steam condenses back to water. The condensed water is collected in the bottom of the condenser and pumped back into the steam generator. The cycle then repeats.

25. Other components of the AP1000 design include an annex building which contains the main control room; a fuel handling area where new fuel is received and spent fuel is stored; and a diesel generator building. Two cooling towers, three stormwater runoff ponds, and one electrical transmission 500 kV switchyard serving both units are also to be located near the generating units.

26. Each LNP unit will be equipped with a recirculating cooling water system, including a cooling tower, that supplies

cooling water to remove heat from the main condensers. The cooling tower makeup water system supplies water to the cooling tower to replace water consumed as a result of evaporation, drift, and blowdown.

27. The LNP's cooling water intake will be located on the CFBC. Cooling water will be conveyed to the LNP site via pipelines. The proposed corridor for the cooling water intake and wastewater discharge pipelines is approximately 13 miles long and 0.25 miles wide. The intake pipeline corridor extends south from the LNP site to the CFBC. The wastewater discharge corridor then turns westerly along the CFBC for six miles before turning south along the western side of an existing PEF transmission line and enters the CREC. As part of its pending application for an NPDES permit, PEF has proposed that LNP wastewater be released into the existing CREC discharge canal.

28. Materials needed to construct the LNP will be delivered via: (1) U.S. Highway 19; and (2) a barge slip on the CFBC in conjunction with the heavy haul road for large components.

29. The heavy haul road, to be used primarily during construction, will be co-located with the makeup and blowdown pipeline corridor south of the LNP site.

Federally-Required Approvals

30. The LNP is also subject to the construction and operation approval of the NRC. As part of the federal permitting process for nuclear power plants, PEF has submitted a Combined Operating License Application (COLA) to the NRC. PEF submitted the COLA for the LNP on July 30, 2008. The NRC's review is in progress, and a decision on the application is expected in late 2011. PEF has also requested a Limited Work Authorization (LWA) from the NRC. The LWA request covers the installation of a perimeter diaphragm wall and preliminary foundation work for the two units, and related buildings that are not nuclear safety-related items.

31. An NRC-certified design for the AP1000 allows an applicant for NRC COL approval to avoid readdressing matters that the NRC has already considered when reviewing an individual COLA that uses that standard design. This approach is expected to provide more predictability and reduce the NRC's licensing review process. For PEF, the advantages of a standard design include the ability to apply lessons learned from other projects being constructed ahead of the LNP, as well as improved performance in cost and scheduling.

32. PEF is seeking certification under the PPSA prior to completion of the NRC approval because state site certification will allow PEF to begin early site preparation (such as access

roads) and will allow PEF to proceed to acquire property rights within the electrical transmission corridors.

33. The NRC regulates radiological effluents and monitoring at nuclear power plants. The state of Florida does not have regulations specifically applicable to regulation of spent nuclear fuel. Under NRC regulations, nuclear power plants are required to have radiological environmental monitoring programs (REMPs). Part of the REMP is an offsite dose calculation manual (ODCM). The Florida Department of Health (FDOH), Bureau of Radiation Monitoring, performs much of the monitoring in the ODCM at nuclear power plants under an agreement with the NRC. See 42 U.S.C. § 2021(b); Florida Administrative Code Chapter 64E-5. The FDOH also monitors groundwater wells in the vicinity of a nuclear plant for numerous parameters, including radiological releases.

34. In addition to the separate NRC approvals, PEF has filed applications with DEP for [a federally-required Prevention of Significant Deterioration (PSD) air construction permit under the federal Clean Air Act, a National Pollutant Discharge Elimination System (NPDES)] permit under the federal Clean Water Act, and (in accordance with 403.506(3), Florida Statutes) a state-required environmental resource permit (ERP) from DEP for construction of a new barge slip on the CFBC. DEP issued the final PSD air construction permit on February 20, 2009. DEP has

not taken final agency action on the pending NPDES permit application.

35. Federally-required permits issued by the DEP under the Clean Air Act and Clean Water Act are not subject to the PPSA. The PPSA provides that federal permits are reviewed and issued separately by the DEP, but in parallel with the PPSA process to the extent possible. Upon issuance, these federal permits will be incorporated into the conditions of certification. The separate DEP-issued ERP will also be incorporated by reference into the final site certification.

Water Use

36. The LNP has two primary needs for water: (1) saltwater to cool the steam condensers (circulating water); and (2) freshwater for power generation and component cooling (service water). Freshwater will be drawn from the upper Floridan aquifer. Saltwater will be supplied from the Gulf of Mexico via the CFBC.

37. A circulating water system can be designed to use either freshwater or saltwater. Common design practice is to use the most abundant source; so saltwater was selected for the LNP. The service water system components for the LNP are established by Westinghouse for the AP1000 standard design and require freshwater. The service water system for the AP1000 reactor has been designed to provide an efficient means of

cooling plant components with a relatively small demand for freshwater.

38. Most of the water to be used at the LNP site will be needed for steam condenser cooling which will take place in two cooling towers; one for each unit. The source for cooling tower makeup water will be surface saline water withdrawn from the CFBC. Approximately 122 million gallons per day (mgd) will be withdrawn from the CFBC for cooling water needs. A new intake structure would be constructed on the canal bank at a site south of the LNP site and west of the Inglis Lock on the CFBC, approximately 6.5 miles inland from the Gulf of Mexico.

39. Saltwater will be pumped from the CFBC and directed into the cooling tower basin. The circulating water system is a closed-cycle cooling system and is the primary heat sink for the plant during normal operation. Circulating water pumps direct water to the steam condenser to cool the steam after it passes through the main turbines. The heated saltwater is then returned to the cooling towers where it is cooled by air flow and returned to the cooling tower basin.

40. The LNP recirculating cooling water will be cooled by induced draft, counter-flow, mechanical cooling towers. For each unit's cooling tower, there are 44 cooling tower cells, grouped into two banks of 22 cells each. Each of the cooling tower cells will be approximately 75-feet tall. The total

length of each 22-cell cooling tower is approximately 1,200 feet.

41. The LNP will have a continuous need to utilize cooling water. Most of the water loss in the cooling towers is a result of evaporation of the water being cooled in the cooling towers. A small amount of circulating water is lost from the cooling towers as liquid droplets entrained in the exhaust air stream. This is known as "drift."

42. When water evaporates from the cooling tower, minerals and solids are left behind. As more water evaporates, the concentration of these materials increases. This concentration is controlled by continuously releasing and replenishing some water from the tower. Accordingly, both saltwater and freshwater are continuously discharged from the plant to help maintain proper water chemistry. This continuous release of water is called "blowdown" and, as proposed in PEF's pending NPDES application, it will be discharged to the discharge canal for the CREC and then into the Gulf of Mexico, a Class III marine water.

43. The LNP will require up to 1.58 mgd, annual average, of freshwater. This freshwater will be used for plant operations, fire suppression, potable water needs, and demineralized water needs. Groundwater will be withdrawn from

four supply wells at the south end of the PEF-owned property south of the LNP site.

44. The AP1000 service water system requires freshwater for use in component cooling. The service water system provides cooling water for the nonsafety-related component cooling water heat exchangers.

45. Demineralized water is processed to remove ionic impurities and dissolved oxygen and is used for plant operations that require pure water, primarily the feed water and condensate systems used in power production.

46. When operational, the LNP site must be capable of supplying potable water to approximately 800 employees and visitors daily. Potable water will also be needed for onsite construction.

47. The fire protection system will be capable of providing water to points throughout the plant where wet system fire suppression could be required. The fire suppression system is designed to supply water at a flow rate and pressure sufficient to satisfy the demand of automatic sprinkler systems and fire hoses for a minimum of 2 hours.

Cooling Water Intake Structure

48. The LNP cooling water intake structure (CWIS) will be located on the berm that forms the north side of the CFBC

approximately 3 miles south of the LNP, downstream of the Inglis Lock.

49. The CWIS will withdraw surface water into four intake pipelines (two for each nuclear unit) that will convey water to the cooling tower basins for use in the cooling towers. These 54-inch diameter pipelines will generally be buried to a minimum depth of five feet. The pipelines will cross over the Inglis Lock Bypass Channel located north of the CFBC on an approximately 33-foot-wide utility bridge.

50. For each of the LNP units, the CWIS will contain three 50 percent capacity makeup pumps, each with a design flow rate of 23,800 gallons per minute (gpm). Two pumps will provide normal cooling tower makeup flow requirements for each unit. The third spare pump will be in standby mode and automatically start if one of the operating pumps shuts down for any reason.

51. A dual-flow traveling screen upstream of each makeup pump will screen floating and suspended materials in the CFBC water. The screen opening will be 3/8-inch. The screens will be sized to ensure that the through-screen water velocity is no more than 0.5 feet per second (fps) to reduce the impingement and entrainment of aquatic life that could enter the pump bay. The velocity of the water in the intake bay upstream of the traveling screens (the approach velocity) will be about 0.25 fps. Upstream of the traveling screens will be trash racks

(also referred to as bar racks). These are a series of steel bars (4 inches apart) to prevent large objects from entering the CWIS.

Potential Impacts of Surface Water Intake

52. Cooling water will be withdrawn via the CWIS from a section of the CFBC that extends approximately 7 miles from the Inglis Lock west to the Gulf of Mexico. Operation of the Inglis Lock was discontinued in 1999; the lock separates Lake Rousseau (to the east) from this section of the CFBC. This section of the CFBC has a continuous opening to the Gulf of Mexico. The CFBC bisects the Withlacoochee River, severing the original hydraulic connection between Lake Rousseau and the Lower Withlacoochee River. To maintain flow to the Lower Withlacoochee River which is north of the CFBC, the Inglis Lock Bypass Channel and associated Inglis Lock Spillway were built adjacent to the Inglis Lock (north of the CFBC).

53. Flows in the CFBC are primarily a result of tides coming in and out from the Gulf of Mexico and, to a lesser extent, rainfall. Periodically, freshwater is released from Lake Rousseau into the CFBC via the Inglis Dam. Also, there is some groundwater seepage into the CFBC as well as minor leakage from the Inglis Lock. Residence time for water in the CFBC near the proposed CWIS is currently over 200 days; there is very little outflow.

54. Waters in the CFBC downstream of the Inglis Lock vary in salinity seasonally, with tidal influences, and depending on freshwater releases from the Inglis Dam. On average, the salinity in the area of the CFBC where the intake structure is proposed to be located is approximately 10 parts per thousand (ppt). As the CFBC approaches the Gulf of Mexico, salinity increases, averaging over 20 ppt and as high as 30 ppt.

55. The CFBC ranges from approximately 200-to-260 feet wide. There is vegetation along the banks, as well as riprap, the latter consisting of huge rocks to limit erosion. The upper end of this section of the CFBC has algal blooms during the summer and muddy, silty bottom conditions that limit biological activity. The CFBC does not have seagrass beds that serve as aquatic habitat, except downstream where it joins with the Gulf of Mexico.

56. The CFBC does not serve as significant habitat for endangered fish species, such as the Gulf Sturgeon or Smalltooth Sawfish. Although freshwater and saltwater species may use the CFBC occasionally, it does not serve as significant spawning habitat for any migratory, sport, or commercial fish species. Pursuant to the proposed conditions of certification, pre-operational monitoring and sampling in the CFBC will be used to identify any changes in the use of that canal by such fish species.

57. With regard to the remnant section of the Withlacoochee River between the Inglis Dam and the CFBC (Old Withlacoochee River, or OWR), the biota in the middle and lower reaches of that waterbody currently show the effects of variable salinity levels; these areas are characterized by organisms typically found in marine conditions. The upper reach of the OWR has species normally found in freshwater systems. Aquatic species in the OWR are affected by periodic releases from the Inglis Dam.

58. The LNP CWIS hydraulic zone of influence on the CFBC extends about 5 miles to the west down the approximately 7-mile long CFBC. The hydraulic zone of influence defines the point at which the flow of the CFBC would be affected by the CWIS, under static conditions. In its biological analysis, PEF assumed that potential intake impacts would extend beyond this hydraulic zone of influence.

59. After installation and operation of the LNP CWIS, the dominant forces affecting flow conditions in the CFBC will continue to be primarily tidal activity and releases from Lake Rousseau. The CFBC will become more saline. However, installation and operation of the LNP CWIS will improve flow conditions in the CFBC by adding consistent and very slow upstream movement of about 122 mgd.

60. The LNP CWIS will cause the saline-freshwater transition zone to move up the remnant channel of the OWR, south of the CFBC. The increased salinity is not expected to affect the small enclave of freshwater organisms living in that upper segment of the OWR.

61. Potential adverse impacts from a CWIS include entrainment (when organisms smaller than the screen openings enter the cooling water) and impingement (when organisms larger than the screen openings become trapped on the screen). Potential impacts of entrainment and impingement will be minimized because the LNP CWIS will utilize a closed-cycle recirculating cooling water system which will reduce the amount of cooling water required by approximately 90 percent; the through-screen velocity will be 0.5 fps or less; and the LNP will not disrupt thermal stratification in the CFBC. Under federal law, DEP will make the final determination of compliance with Section 316(b) of the Clean Water Act requirements in the NPDES permit.

62. The LNP CWIS is not expected to pose a threat to threatened or endangered species or migratory, sport, or other fish species. Monitoring for fish species in the CFBC will be undertaken under the FWC's proposed conditions of certification to identify any actual impacts to such species and the need for any mitigation for such impacts.

63. Locating the CWIS near the Inglis Lock on the CFBC will result in less entrainment and impingement impacts compared to potential locations closer to the mouth of the CFBC or in nearby off-shore waters.

64. Proposed conditions of certification require PEF to submit a post-certification survey and monitoring plan for the CFBC and Withlacoochee River to assess actual impacts of the withdrawals for the LNP on these water bodies. If, after review of the annual reports required by these conditions by FWC, DEP, and SWFWMD, there is an indication of adverse impacts, PEF must submit a CFBC and/or Withlacoochee River mitigation plan to mitigate those impacts.

65. As part of its pending NPDES permit application, PEF submitted a "316(b) Demonstration Study" to address compliance with intake standards applicable to the LNP CWIS. Final agency action on the NPDES permit application, including a determination of compliance with Section 316(b) regulations, has not been taken by DEP. Under 40 C.F.R., Subpart I, Sections 125.80-125.89, if pre- and post-operational monitoring demonstrates unacceptable adverse impacts associated with the CWIS, operational and technological improvements to the CWIS may be required. Under the proposed conditions of certification, the final NPDES permit for the LNP will be incorporated by reference into the conditions of certification.

66. Operation of the CWIS is expected to have a negligible impact on saltwater intrusion in the area bounded to the south by the CFBC and to the north by the Lower Withlacoochee River. The waters of the CFBC are marine waters. There currently is stratification in the CFBC, with higher salinity along the bottom of the water column. The change in density of water in the CFBC as a result of the increased salinity due to the LNP's proposed water use in the CFBC is not expected to affect freshwater resources. The tide in the CFBC currently fluctuates 2-3 feet twice per day.

67. The construction of the CFBC and the bisection of the Withlacoochee River have resulted in reduced freshwater flows in the lower portion of the Withlacoochee River north of the CFBC. There is no direct connection between the CFBC and the Lower Withlacoochee River (north of the CFBC). The flow in the Bypass Channel provides less freshwater from Lake Rousseau to the Withlacoochee River than historically flowed into the lower portion of the River. This has caused saltwater to move up the Lower Withlacoochee River, particularly during periods of low flow.

68. SWFWMD has evaluated restoration of the River to its original condition, but has not advocated reconnection. Reconnection of the Withlacoochee River or downstream impoundment of the CFBC probably would not prevent the impacts

of increased salinity in the Lower Withlacoochee River during periods of low freshwater flow. Although no agency is currently pursuing a project of this type, DEP has proposed a condition of certification to address future public projects for the maintenance, preservation, or enhancement of surface waters requiring modifications to the CFBC.

Potential Impacts to Manatees

69. Manatees use the Withlacoochee River and the CFBC year round, but primarily during the warmer months. The CFBC, including the area of the LNP intake, is not listed as critical habitat for manatees under the federal Endangered Species Act.

70. Construction activities in the CFBC can take place in a manner reasonably likely to avoid adverse impacts to manatees. The FWC has proposed conditions of certification designed to protect manatees from adverse impacts of in-water construction through monitoring and mitigative measures. Compliance with these conditions will minimize impacts to manatees.

71. The operation of the LNP cooling water intake structure (CWIS) is not likely to adversely impact manatees. The potential impacts of the LNP CWIS on manatees will be minimized by the system design and location. Additionally, DEP and FWC have proposed conditions of certification requiring PEF to submit a final CWIS plan for review by FWC prior to construction of the CWIS with regard to manatee safety issues.

72. Potential impacts to manatees from barge traffic on the CFBC related to delivery of Project components and materials for the construction of the LNP is not expected to adversely impact manatees. FWC has proposed conditions of certification to protect manatees during in-water construction. Compliance with the proposed conditions of certification will minimize potential impacts to manatees.

Impacts of Groundwater Withdrawals

73. The LNP's proposed groundwater use meets all of the SWFWMD's water use criteria. To demonstrate that the proposed groundwater withdrawals associated with LNP operations will comply with the SWFWMD water use criteria, including not causing unacceptable adverse environmental impacts, PEF performed a groundwater modeling analysis using the SWFWMD's District-Wide Regulation Model 2 (DWRM2) groundwater flow model. The DWRM2 is an acceptable groundwater flow model for evaluating the effects of groundwater withdrawals. The DWRM2 modeling demonstrated that the proposed groundwater withdrawals would not lower surficial aquifer levels to the point of causing unacceptable adverse impacts to wetlands and other surface waters, or interfere with existing legal users.

74. Groundwater pumping for the LNP is not expected to adversely impact Lake Rousseau, the Withlacoochee River, or other streams or springs in the Project area. Groundwater

withdrawals for the LNP are likewise not expected to induce saline water intrusion, cause the spread of pollutants in the aquifer, adversely impact any offsite land uses, cause adverse impacts to wetland systems, or adversely impact any other nearby uses of the aquifer system.

75. To confirm the values used in the groundwater flow model supporting the application, proposed certification conditions require that an aquifer performance testing plan be submitted by PEF, approved by the SWFWMD, and implemented. If leakance and transmissivity values derived from actual onsite well tests differ more than 20 percent from values determined through earlier modeling, PEF is required to revise its groundwater model to incorporate the aquifer test results and undertake further modeling. Updated groundwater modeling results will be used to determine whether alternative water supplies or additional mitigation will need to be implemented.

76. To help ensure that the proposed groundwater use does not cause unacceptable adverse environmental impacts, SWFWMD and DEP recommended that conditions be included in the site certification requiring an environmental monitoring plan to evaluate the condition of surface waters and wetlands in areas that could potentially be affected by groundwater withdrawals. Monitoring will continue for a minimum of five years after groundwater withdrawals reach a quantity of 1.25 mgd on an

annual average basis. Annual monitoring summaries will be submitted. If, after five years, this monitoring demonstrates that no adverse impacts of groundwater withdrawals are occurring or predicted, PEF may request that monitoring be discontinued.

77. Groundwater withdrawals will be metered and reported to DEP and SWFWMD on a monthly basis. Proposed conditions of certification require periodic water quality sampling be performed on the withdrawn groundwater to ensure no adverse impacts to water quality. Proposed conditions also address ongoing monitoring and compliance by requiring a full compliance report every five years throughout the life of the LNP, to demonstrate continued reasonable assurance that the groundwater use is meeting all of the applicable substantive water use requirements set forth in SWFWMD rules.

78. The SWFWMD has not established water reservations or minimum flows or levels for any waterbody in the vicinity of the LNP. Therefore, the use of water from the CFBC and from the ground will not violate any currently established water reservation or minimum flow or level.

79. Fracture sets (also called solution channels) are small openings through which groundwater moves. Fracture sets are only an issue in groundwater flow if preferential flow paths develop near one of the solution channels. Preferential flow paths tend to develop near existing springs. There are no

springs on the LNP site, and subsurface investigations did not reveal any evidence of solution channels under the site.

80. PEF also proposes to withdraw groundwater as part of the dewatering needed for plant construction. PEF proposes to install an impervious diaphragm wall around and below the foundation excavations for each nuclear unit to minimize water flow into the construction site. It is anticipated that dewatering at each unit could last as much as two years. Additional construction dewatering will also be necessary in some locations for installation of the pipelines and other linear facilities.

81. Naturally-occurring groundwater collected during dewatering and excavation activities will be directed into stormwater runoff ponds and allowed to filter back into the ground to recharge the surficial aquifer. Dewatering is expected to cause only a modest amount of drawdown of the surficial aquifer.

82. Construction-related dewatering activities will be approved by DEP and SWFWMD on a post-certification basis after final construction designs are submitted.

Potential Surface Water Discharge Impacts

83. The LNP will have a combined wastewater discharge comprised of several wastewater streams. Blowdown from the cooling towers will comprise about 98 percent of the LNP

wastewater. The blowdown will be combined with significantly smaller quantities of plant wastewaters, treated plant sanitary wastewater, and occasionally stormwater. LNP wastewaters consist of effluents from process equipment, floor drains, laboratory sample sinks, demineralized water treatment system effluent, and treated steam generator blowdown. Wastewaters will be processed before discharge. The treatment systems include oil separators (to separate oily wastes from the rest of the waste stream) and a wastewater retention basin (to settle out suspended particles). The combined LNP wastewater, as proposed by PEF in its pending NPDES permit application, will be piped to the CREC and released into the existing CREC discharge canal which flows into the Gulf of Mexico.

84. The cooling tower blowdown discharges from the LNP will include saltwater blowdown from the plant recirculating cooling water system and freshwater blowdown from the service water cooling system; the vast majority of this will be saltwater blowdown from the plant recirculating cooling water system. The normal 2-unit recirculating water blowdown rate is expected to be 57,400 gallons per minute (gpm) or 81.4 mgd, and the maximum blowdown rate is expected to be about 59,000 gpm or 84.9 mgd. The 2-unit service water blowdown rate is expected to vary from about 130 gpm during normal operation, to a maximum of about 400 gpm.

85. The CREC currently has two NPDES permits authorizing discharges to surface waters of the State. CREC Units 1, 2, and 3 are cooled with once-through cooling water from the CREC intake canal that is then discharged into the Gulf of Mexico via the existing CREC discharge canal. Once-through cooling water is cooling water that is released after condensing the steam, without being recycled in a cooling tower system. CREC Units 4 and 5 have cooling towers that receive make-up water from the CREC discharge canal and release blowdown into the discharge canal. The discharges for all five CREC units are released to the Gulf of Mexico through a single discharge canal at the CREC site. PEF has proposed to utilize the CREC discharge canal for the LNP discharge; however, the final location will be subject to approval as part of DEP's final agency action on PEF's pending application for an NPDES permit.

86. The wastewater flow at the CREC is limited under the existing CREC NPDES permits to 1,898 mgd during the summer and 1,613 mgd during the winter. The expected day-to-day total wastewater flow from the LNP will be 83.4 mgd, with a conservative maximum total flow rate of 87.9 mgd. The proposed LNP discharge would be equivalent to 4-5 percent of the permitted discharge from the CREC.

87. The design temperature of the LNP wastewater discharge is 89.1°F, which is expected to be met more than 99.5 percent of

the time. This LNP design temperature is cooler than the existing permitted temperature of the existing combined CREC discharge (96.5°F). Even the expected worst case temperature of the LNP discharge (96.4°F), will be cooler than the existing temperature limit applicable to CREC. With the addition of the LNP discharge, the CREC is expected to continue to meet its existing thermal permit limit.

88. The addition of the LNP wastewater to the CREC discharge canal is not expected to significantly change the existing area of thermal impact associated with existing CREC discharges. Evaluation of the Project wastewater in this certification proceeding indicates that impacts to flora and fauna, including seagrasses and shellfish beds, will be minimized. PEF has committed to a condition of certification requiring the post-certification submittal of a surface water monitoring plan to DEP to ensure there will be no adverse impacts to seagrasses. The finding related to shellfish beds is supported by a letter from the Florida Department of Agriculture and Consumer Services to the DEP stating that "[r]eclassification of the shellfish harvesting areas will not be necessary if the Project is built as proposed."

89. The LNP wastewater is projected to meet the limits defined under 10 C.F.R. Part 20. Evaluation of the LNP

wastewater discharge in this certification proceeding indicates that impacts to surface water quality will be minimized.

90. Adding the LNP discharge to the CREC discharge canal is not expected to have an adverse impact on manatees. The LNP discharge structure at the CREC is likewise not expected to cause adverse impacts to manatees that may be present in the CREC discharge canal.

91. Evaluation of the LNP wastewater in this certification proceeding indicates that impacts to benthic invertebrates, fish, and other organisms in the Gulf of Mexico will be minimized. The discharge is not expected to have adverse impacts on endangered fish species.

92. Proposed conditions of certification require PEF to submit a discharge monitoring plan to ensure that the addition of the LNP wastewater to the CREC discharge does not cause adverse impacts. If, after review of the annual reports required under these conditions by FWC, DEP, and SWFWMD, there is an indication of adverse impacts, PEF must submit a mitigation plan to address those impacts.

93. DEP's final agency action on PEF's application for an NPDES permit for the LNP, if issued, will include final action on compliance with water quality standards and will be incorporated by reference into the conditions of certification.

Surface Water Management System

94. The LNP surface water management system consists of pipes and ditches that collect and convey stormwater from the plant area into onsite wet treatment ponds before discharge. Stormwater along the heavy haul road will be collected in roadside swales.

95. The plant area will be raised approximately eight feet. Stormwater will drain from this area into three stormwater ponds. Any cross-flows from the plant site toward the raised areas will pass around the site through culverts or ditches. The stormwater ponds and swales are sized to treat stormwater releases to meet SWFWMD rules. In addition, all construction-related surface water management facilities will comply with SWFWMD's surface water management criteria.

96. The design and proper construction and operation of the surface water management system will satisfy SWFWMD's water quantity and water quality criteria in Rules 40D-4.301 and 40D-4.302. PEF has committed to a post-certification submittal of detailed stormwater design information to address floodplain impacts as required by section 4.7 ("Historic basin storage") of the SWFWMD Basis of Review for Environmental Resource Permit Applications (adopted in Rule 40D-4.091, which is incorporated by reference in Rule 62-330.200(3)(e)).

Solid Waste Disposal

97. There will be no onsite disposal of hazardous waste during construction of the LNP. All hazardous waste will be handled in accordance with applicable federal, state, and local regulations. Contractors will be responsible for having detailed procedures in place to handle hazardous waste.

98. During operation, hazardous waste will be managed and disposed of in accordance with federal and state regulations under the federal Resource Conservation and Recovery Act. PEF has procedures in place for management and control of hazardous materials; such materials will be disposed of offsite through permitted facilities.

99. All solid waste generated during construction will be disposed of at a permitted offsite landfill. There will be no onsite disposal of solid waste. Non-nuclear solid waste generated during operation of the LNP will be disposed of offsite at a permitted landfill. A proposed condition of certification precludes processing or disposal of solid waste onsite.

Air Emissions, Controls, and Impacts

100. The LNP is a nuclear-fueled power generating facility that will use uranium dioxide pellets in fuel rods. The LNP will also use a relatively small amount of diesel fuel in its emergency diesel generators, ancillary generators, and fire pump

engines. Therefore, the LNP will not emit the typical types and quantities of air pollutants from fossil-fueled power generation such as sulfur dioxide, nitrogen oxides, particulates or carbon dioxide (CO₂).

101. The sources of air emissions at the LNP will include the two banks of mechanical draft cooling towers and diesel-fueled emergency power generators and fire pump engines.

102. Air pollutants that will be emitted during normal facility operation will be limited to particulate matter (PM), both more than and less than 10 microns in diameter, which will be emitted from the low profile cooling towers. There will be a small amount of air emissions from the diesel-fueled emergency power generators and fire pump engines; however, these emissions are only expected to occur during the few hours per month when the engines are run for maintenance and testing purposes. There will be no other significant sources of air emissions from operation of the LNP.

103. PM emissions from the draft cooling towers will occur as a result of the entrainment of a small amount of water, as small-diameter droplets, in the exhaust stream from the towers. Particulate matter, consisting of the naturally occurring dissolved solids that will be present in the cooling water, will be contained in these entrained droplets. The droplets and the associated suspended solid particulate matter are known as

cooling tower "drift." The amount of cooling tower "drift" is controlled through the use of very high efficiency mist eliminators that will be in the cooling tower.

104. The use of high efficiency mist eliminators on the LNP cooling towers is consistent with state and federal regulations that require the use of Best Available Control Technology to limit such air emissions.

105. The LNP will be located in Levy County which is currently attaining all ambient air quality standards for all pollutants.

106. The LNP will not have an adverse or discernible impact on ambient air quality at the LNP site, or at any location, for any regulated air pollutant.

107. The LNP will not generate power by combusting any fuel. Therefore, there will be no measurable greenhouse gas emissions, including carbon dioxide, during normal plant operation. The estimated CO₂ emissions from a natural gas-fired combined-cycle generating facility capable of generating the same amount of electricity as the LNP is approximately 6.4 million tons per year. For comparison, the estimated CO₂ emissions from the LNP, which result from periodic testing of the facility's diesel-powered emergency equipment, is only 618 tons/year.

108. Visible plumes from the cooling towers will remain very close to the cooling towers (within approximately 300 feet) under most meteorological conditions. The occurrence of visible vapor plumes at offsite locations is expected to be infrequent.

109. The operation of the cooling towers is expected to have no significant or adverse impacts due to ground level fogging on any roadway or at offsite locations during plant operation.

110. The maximum predicted offsite solids deposition rate from operation of the LNP cooling towers is six pounds per acre per month immediately adjacent to the nearest LNP property boundary. This is below the de minimis adverse impact threshold of nine pounds per acre per month published by the NRC. The rate of deposition is predicted to decrease rapidly and significantly with increasing distance from the plant.

111. Operation of the LNP cooling towers is not expected to cause discernible impacts on any natural resources, including surface waters or wetlands.

Noise Impacts of Construction and Operation

112. The noise limits applicable to the LNP site are set by the Levy County Code of Ordinances. The noise limits defined by the County ordinance for the area surrounding the LNP site are 65 dBA from 7 a.m. to 10 p.m. and 55 dBA from 10 p.m. to

7 a.m. There are no other local, state, or federal noise regulations that apply to the plant.

113. PEF conducted noise impact evaluations for construction and operation of the LNP. Ambient noise levels were measured at six locations around the LNP site. Noise levels were conservatively estimated by adding the composite average noise levels that would be generated by construction equipment during the loudest phases of construction. Equipment sound propagation factors were obtained from industry references. The noise model known as CADNA/A was used to predict noise levels at onsite and offsite locations, including the nearest residences for both construction and operation.

114. The noise levels during construction activities and during normal maximum operation of the LNP plant site are projected to be below the Levy County noise limits for all hours at all offsite locations, including the locations of the nearest residences. Due to the large buffer surrounding the developed area of the site, and the relatively low noise levels associated with the LNP, there are not expected to be any significant or adverse noise impacts during construction or operation of the LNP.

Wetlands and Terrestrial Ecology
(Plant and Transmission Line Corridors)

115. The proposed LNP site has been used for many decades for the production of pine. The clearing of native vegetation, furrowing, bedding, planting, and harvesting (primarily for pine) has altered the site from a natural Florida landscape into a monotypical landscape in both upland and wetland areas with reduced functional attributes.

116. There are no open water bodies or streams on the LNP site. There are some flow-way connections between some of the wetlands, but they are not of the kind that will support long-term fish habitat or aquatic insect communities.

117. Due to the silvicultural nature of the site and recent clearing, the ideal complement of biodiversity on the LNP site is no longer present. The predominant wildlife species are those that tolerate a mono-specific pine tree habitat, such as deer, turkey, and wild hogs. While pre-application surveys indicate that protected species occur at and in the vicinity of the LNP site, several of Florida's listed species are not likely to extensively use the LNP site. Impacts to State-listed and important wildlife species that have been documented or may occur on the LNP site and adjacent uplands will be further minimized under the proposed conditions of certification, including pre-construction wildlife surveys and consultation

with FWC on the results and needed measures to avoid and mitigate such impacts.

118. Historically, the 3,105-acre LNP site was dominated by forested cypress wetland systems. However, over the last century or more, those have been harvested and allowed to re-grow, so that many of the wetlands are no longer dominated by cypress trees. Today, most of the forested wetland systems in the footprint of development have been cleared of trees.

119. The anticipated maximum wetland impacts for the entire Project, including the impacts from associated facilities and electrical transmission lines, are estimated to be 765 acres. These impacts are estimated to be: 13.3 acres of open water; 638.4 acres of forested wetlands; and 113.0 acres of herbaceous wetlands. Approximately one-half of the wetland impacts are expected to occur on the LNP site and one-half are expected to occur offsite.

120. The Project's 765-acre wetland impact is a conservative estimate, including long-term and short-term impacts that are the result of direct dredging and filling as well as temporary disturbance. It is likely that the actual impact will decrease as the routing of facilities is refined within the electrical transmission and other corridors and on the LNP site.

121. Based on these anticipated wetland impacts and the functions being provided by these wetlands, PEF calculated the proposed maximum wetland functional loss for the LNP to be 410.9 functional units, as determined under Florida's Uniform Mitigation Assessment Methodology (UMAM) contained in Rule Chapter 62-345.

122. The UMAM scoring indicates that, on average, the wetlands being impacted have approximately one-half of the functional ecological value of an ideal wetland system.

123. To comply with the applicable SWFWMD ERP rules under the PPSA process, PEF must offset the wetland impacts caused by the construction and operation of the LNP, associated transmission lines, roads, and pipelines.

124. PEF submitted to DEP a Wetlands Mitigation Plan for the Progress Energy Levy Nuclear Plant and Associated Transmission Lines (WMP). A primary value of the WMP is an overall increase in ecological function provided across several thousand acres in a regionally-significant location. This regional landscape-level ecosystem benefit substantially augments the value of local-scale mitigation activities. The proposed mitigation for the LNP will potentially achieve greater offset of wetland impacts from a regional perspective and is expected to provide significant long-term ecosystem benefit.

125. The WMP identifies a series of possible scenarios from which the appropriate and ultimate mitigation can be derived. Because impacts are still being refined as corridors are narrowed into actual routes, the information in the WMP is designed to demonstrate that there is available and desirable mitigation to affect the final degree of wetlands impacts, once calculated.

126. The comprehensive mitigation plan, as described in the WMP, is an acceptable alternative to traditional "in-basin" mitigation. DEP conceptually approved this WMP with the understanding that more detailed information will be submitted when final routes are established and actual wetland impacts are known. The amount of mitigation PEF will undertake will be based on the amount of wetlands actually impacted. A condition of certification has been included to require submittal of refinements to the mitigation plan for DEP's approval following final certification.

127. PEF looked at ways to reduce and eliminate wetland impacts at several levels, including site selection, routing of roadways, and commitments through discussions with agencies to further reduce impacts as transmission line routes are selected within the transmission corridors.

128. The Project is designed to comply with SWFWMD ERP criteria in Rules 40D-4.301 and 4.302.

129. There are not expected to be unacceptable secondary wetlands impacts due to the construction of the Project. Under SWFWMD rules, as long as a disturbance is at least 25 feet from a wetland, secondary impacts are deemed avoided. For the LNP site, unimpacted wetlands are dozens to thousands of feet away from Project development. Further, the rural and remote location of the facility, along with the high level of security associated with a nuclear facility (i.e., fencing, buffering, and reduced public access) makes causally-connected offsite development unlikely (with regard to the LNP site).

130. The LNP will comply with the cumulative impact requirements of Section 373.414(8), Florida Statutes. The conceptual WMP is designed to be regionally significant and provides ecological benefits beyond the calculated UMAM functional value increase. For example, the WMP has the potential to connect the Goethe State Forest to the historic floodplain of the Withlacoochee River, which will maintain and enhance a large natural wildlife corridor.

131. The LNP is not anticipated to adversely affect the value or functions provided to fish and wildlife and listed species, including any aquatic and wetland species, or other related-water resources. There are no documented listed aquatic or wetland-dependent species that might be adversely affected by construction at the plant site. Impacts to wetland dependent

species will be further minimized under the proposed conditions of certification, including pre-construction wildlife surveys and consultation with FWC on the results.

132. PEF has addressed all of the wildlife issues subject to the site certification process. The FWC has recommended certification, subject to conditions related to surveying of development areas and appropriate buffers for species prior to clearing, construction, and development to ensure appropriate relocation or mitigation opportunities and implementation of management activities to ensure the long-term well-being of the species.

133. Project wetlands impacts are not expected to adversely affect the quality of receiving waters with respect to the applicable water quality criteria for those receiving waters, or adversely affect fishing or recreational values or marine productivity.

134. Through implementation of the WMP, construction of the Project is not expected to adversely affect the current condition and relative value of the functions being performed by wetlands.

Transportation

135. The primary roadways in the vicinity of the LNP are U.S. Highway 19 (U.S. 19) and County Road 40 (C.R. 40). U.S. Highway 19 is a Florida DOT-maintained, four-lane arterial

roadway west of the Project site. C.R. 40 is a Levy County-maintained, two-lane roadway approximately five miles to the south of the plant site.

136. The Levy County Comprehensive Plan has adopted level of service (LOS) standards for roadways within Levy County. While LOS standards do not apply to temporary construction traffic, PEF evaluated the impacts of both LNP construction and operation traffic on adjacent roadways. This evaluation shows that future traffic levels with the addition of the Project construction and operation traffic are projected to be less than one-half the adopted LOS standards for U.S. 19 and C.R. 40.

137. Roadway links during construction and operation of the LNP are projected to operate within adopted LOS standards.

Socioeconomic Impacts and Benefits

138. There is an approximate population of 4,700 persons within a five-mile radius of the LNP site. This equates to a population density of approximately 60 people per square mile.

139. The closest towns to the LNP site are Inglis and Yankeetown, which are located approximately 4.1 miles and 8.0 miles southwest of the LNP site, respectively.

140. The total cost of the LNP, including the proposed electrical transmission lines, is approximately \$17 billion. The LNP construction workforce is expected to peak at approximately 3,300 workers in 2014. The operation workforce

will consist of approximately 800 employees, with an additional 800 workers needed every 18 months for between 20 and 30 days to refuel the facility.

141. PEF sees retention rate benefits when hiring locally and would like to employ the local workforce for construction and operation of the LNP. PEF has programs in place to train local residents to become part of the future workforce for the LNP. These programs focus on both construction and operation personnel and include programs or potential programs at Bronson High School, Chiefland High School, Dixie County High School, the Withlacoochee Technical Institute, and Santa Fe Community College. PEF is also working in partnership with Dunnellon High School (which draws students from Levy, Citrus, and Marion Counties) on a Power Academy to prepare students for the construction and operation of the LNP. PEF has a successful nuclear engineering program partnership with the University of Florida to train both nuclear engineers and plant operators, including the use of a first-of-its-kind digital training simulator. PEF has provided grants to modernize the nuclear facilities at the University of Florida.

142. In 2005, there were approximately 395,000 workers in the region (defined as a 50-mile radius around the LNP, including Levy, Citrus, Marion, Alachua, Dixie, Gilchrist, Hernando, and Sumter Counties). Specific to construction of a

nuclear power plant, there were 4,900 heavy construction workers in the region in 2006. It is probable that more of these 4,900 workers will be available due to rising unemployment rates across the region. Unemployment rates for the three counties immediately surrounding the LNP site have risen from around four percent in 2005 to eight percent in late 2008.

143. There is sufficient housing available in the region to accommodate both LNP construction and operation employees.

144. Construction of the LNP is not expected to significantly increase the number of pupils in the surrounding school systems. The school systems in the region of the LNP will be able to accommodate the increased number of pupils as a result of LNP operations workers and their families.

145. Public services and facilities in the region of the LNP are sufficient to absorb any incremental population growth associated with construction and operation workers and their families.

146. Construction of the LNP will have little, if any, impact on recreational facilities and uses in the area around the LNP site in Levy and Citrus Counties. During LNP operation, recreational facilities and uses will not be impacted. There are no officially-designated landmarks within five miles of the LNP site.

147. The peak construction workforce in 2014 will result in approximately \$152 million in annual earnings. Construction earnings in other years will also be substantial. In addition to jobs and earnings, the construction of the LNP will contribute an estimated \$263 million annually to the regional economy via direct, indirect, and induced goods and services.

148. The direct social and economic impacts of the LNP operation are expected to include approximately 800 direct jobs; 1,100 indirect or induced jobs; and associated increases in sales, property tax, and output revenues. These operations workers are expected to generate over \$53 million in annual payroll. The LNP overall is expected to contribute nearly \$521 million annually to the regional economy via direct, indirect, and induced goods and services. Local property tax collections will begin when Unit 1 is brought on-line, resulting in approximately \$63 million in tax revenue to Levy County in the first year of operation. Annual property tax collections in Levy County of approximately \$18 million are projected to increase by \$104 million once both LNP units are operational.

Archaeological and Historic Sites

149. Construction and operation of the LNP will not adversely impact archaeologically significant sites or historic standing structures. The Project complies with all federal and

state standards for identification and protection of archaeological sites.

150. Field surveys of the plant site, the corridor extending south to the CFBC, and the pipeline corridor to the CREC did not reveal any archaeological sites or historic standing structures eligible for listing in the National Register of Historic Places (NRHP). The Florida State Historic Preservation Officer (SHPO) concurred with PEF's survey methodology and the determination that no sites are NRHP-eligible.

151. PEF has guidelines designed to protect historic sites, landmarks, artifacts, and archaeological sites in the event of an inadvertent discovery. The Florida SHPO has concurred with PEF's approach to protect inadvertent discoveries during land-disturbing activities.

Land Use

152. PEF filed applications with Levy County for a comprehensive plan amendment and special exception zoning approval for the LNP. Those applications were approved and are now final.

153. The majority of the existing land use on the LNP site is silviculture, and the property is unimproved. The primary existing land use of the property to the south of the LNP, where the heavy haul road, water pipelines, and other facilities will

be located, is likewise silviculture and otherwise unimproved. The properties along the blowdown pipeline corridor to the CREC are primarily vacant and largely unimproved.

154. The nearest residence to the LNP is approximately 1.5 miles to the northwest of the power block generating facilities, measured from the edge of the nearest power block to the residence. The electrical generating facilities are designed with a minimum 1,000-foot setback from the property line of any property not under the control of PEF. A natural 100-foot vegetative buffer is required to be maintained around the LNP's perimeter where the adjacent property is not under PEF's control. Given the setbacks, the perimeter vegetation, and the 250-foot maximum height limitation under Levy County's special exception for the LNP, the physical structures at the LNP site will not be visible from surrounding properties at ground level.

155. The location of the LNP is consistent with the existing and future land uses surrounding the site. The cooling water blowdown pipelines are located to have the least impact on the existing land uses in the area. The LNP will have little impact on land uses in the vicinity.

156. The LNP is consistent with the Levy County Comprehensive Plan and land development regulations (LDRs), the Strategic Regional Policy Plan of the Withlacoochee Regional

Planning Council, and the State Comprehensive Plan contained in Chapter 187, Florida Statutes.

II. Electrical Transmission Lines

Project Description

157. Generally, the purpose of electrical transmission lines is to transmit large amounts of electricity from a generating facility to one or more substations. Transmission lines operate at voltages above 69 kilovolts (kV). Bulk power, generally operating at 230-kV or 500-kV, is transferred from the generating plant to the substation. At the substation, the voltage of the electricity is changed through transformers and other electrical equipment for further transportation or distribution directly to customers.

158. PEF is seeking certification of nine proposed corridors for transmission lines associated with the LNP. A proposed corridor is associated with each of the proposed transmission lines identified in Findings of Fact 182-189. All of the proposed transmission lines will directly support the construction and operation of the LNP.

Corridor Selection Methodology

159. PEF established a multi-disciplinary team to identify a corridor for each of the proposed transmission lines. The role of this team was to select a proposed corridor for certification for each line based on an evaluation of

environmental, land use, socioeconomic, engineering, and cost considerations. The multi-disciplinary team was composed of experts in transmission line design, land use planning, system planning, real estate acquisition, corporate communications, and environmental disciplines as they relate to transmission lines.

160. The multi-disciplinary team engaged in four major steps in this process. The first was to establish and define a project study area for each transmission line. The second step was to conduct regional screening and mapping. The third step was to select and evaluate candidate corridors using both quantitative and qualitative analysis. The fourth step was to select the proposed corridors and identify the boundaries of those corridors. Data collection was performed in connection with this effort from the databases of federal, state, regional, and local agencies and organizations, as well as from the public in a series of conferences and open houses described in Findings of Fact 8-11. A number of field studies, internal meetings, and individual and small group meetings were held with members of the public as a part of the process.

161. In defining the project study area for each transmission line, the multi-disciplinary team considered the starting and ending points for the lines and other linear facilities in these areas.

162. Within each study area, the multi-disciplinary team gathered regional screening data from a variety of sources to identify the different types of opportunities and potential constraints for siting a transmission line in the project study areas, such as various environmental and land use features, existing infrastructure, archeological and historical sites, roads, railroads, rivers, waterbodies, and similar features.

163. The multi-disciplinary team evaluated each corridor using quantitative environmental, land use, and engineering criteria. Relative weights for each quantitative criterion were developed and validated with input from agency representatives and the public during the public outreach portion of the corridor selection process. The weights were applied to the quantitative values for the criteria for each candidate corridor segment and the scores were tabulated for all candidate corridors. The candidate corridors were then ranked in order from best to worst based on quantitative weighted scores.

164. The high-ranking candidate corridors were then evaluated using predetermined qualitative criteria which do not lend themselves easily to quantification, such as the types of wetlands and vegetation present, safety, constructability considerations, and other similar considerations.

165. Based on the quantitative and qualitative evaluation of the high-ranking candidate corridors, the multi-disciplinary

team ultimately chose the nine proposed corridors. Once the proposed corridors were selected, the multi-disciplinary team refined the boundaries of each of the PEF proposed corridors. The team developed corridor boundaries of varying widths by narrowing the corridor to avoid siting constraints where practicable or widening the corridor to take advantage of siting opportunities.

Transmission Line Design

166. A transmission line generally consists of a steel or concrete structure, the conductor, which is attached to the structure by an insulator, and overhead groundwires used for lightning protection and communications for the protection and control systems located in the substation. Access roads and structure pads are also associated with transmission lines.

167. The Project's 230-kV and 69-kV transmission lines will be constructed using single-shaft tubular steel or spun concrete structures. The conductors will be attached to the structures with braced line post or V-string insulators. The braced line post arrangement is a compressed construction design which minimizes the amount of right-of-way needed. The V-string insulator design allows longer span lengths due to the increased strength of this assembly. Typical heights will range from 80 to 145 feet for the 230-kV structures and 60 to 90 feet for the 69-kV structures.

168. The 500-kV transmission lines will be constructed using tubular steel H-frame or monopole structures. The conductors will be attached to the structures with V-string insulators which provide the necessary strength and minimize the amount of right-of-way needed. Structure heights will range from 110 to 195 feet.

169. The span length between structures and the pole height will vary due to natural or man-made constraints such as wetlands, waterbodies, property boundaries, existing utility poles, utility lines, and roadways.

170. The typical spans between structures supporting 230-kV transmission lines will range from approximately 500 to 700 feet for the braced line post structures and 700 to 1,400 feet for the V-string structures. The typical spans between structures supporting 69-kV transmission lines will range from approximately 250 to 600 feet. The typical spans between structures supporting 500-kV transmission lines will range from approximately 1,000 to 1,500 feet.

171. Access roads and structure pads will be constructed only where necessary. When new roads are required, they will typically be 18 feet wide and unpaved, with the top elevation, two feet above the expected seasonal high water line. Generally, the existing ground will be leveled, a geotextile fabric will be installed, and compacted sand and gravel will be

added to arrive at the desired road elevation. Culverts will be installed as required to maintain preconstruction waterflows.

172. Structure pads will typically be 70 feet wide and 100 feet long and unpaved, with the top elevation, two feet above the expected seasonal high water line. The size of the structure pads will vary depending upon the heights of the structures supported and other site-specific factors. The designs for these access roads and structure pads have been used by PEF in the past and have been previously approved in Florida.

Design Standards

173. The transmission lines will be designed in compliance with all applicable design codes and standards. These include the National Electrical Safety Code, the standards of the North American Electrical Reliability Corporation, DEP's regulations on electric and magnetic fields, applicable local government requirements such as noise ordinances, and the DOT Utility Accommodation Manual. PEF's own internal design standards incorporate appropriate provisions or guidance from design codes and standards of the American Society of Civil Engineers, the Institute of Electrical and Electronics Engineers, and American Society of Testing Materials, the American National Standards Institute, and the American Concrete Institute.

Transmission Line Construction

174. PEF will work with the regulatory agencies and landowners to determine where the rights-of-way, transmission structures, access roads, and structure pads should be located. As rights-of-way are being selected, they will be surveyed to facilitate acquisition of the necessary property interests.

175. After the right-of-way is established within the certified corridor, the initial phase of construction involves clearing the right-of-way. Where the proposed right-of-way is in uplands, the right-of-way clearing for the project will consist of vegetation and tree removal as necessary. Where the proposed right-of-way is in wetlands, vegetation will be cleared utilizing restrictive clearing techniques as necessary for specific sites. Restrictive wetlands clearing will be done by hand, with chainsaws or low ground-pressure shear or rotary machines, to reduce soil compaction and damage to vegetation. The cut material will be removed from the right-of-way utilizing either low ground-pressure equipment or temporary construction mats. Care will be taken to minimize rutting and disturbance of root mat.

176. After the right-of-way is cleared, any necessary access roads and structure pads will be constructed. Existing access roads and structure pads will be used whenever practicable. Where a transmission line will be constructed

adjacent to an existing transmission right-of-way, improvements to the associated access roads and paths may be made. Where adequate access roads or structure pads do not exist, new roads and pads will be constructed.

177. The next phase of construction will involve the erection of the structures. All structures will be supported with engineered foundations. Tangent structure foundations will normally consist of either direct buried structures with concrete backfill or reinforced-concrete drilled piers. Structures may also utilize guys and anchors at angle and deadend structures to help support the load. Transmission structures are generally delivered to the site using semi-trucks with open trailers and are assembled onsite as close as possible to the foundation. Typically, the structures are framed with the structure arms and insulator assemblies while lying on the ground. During the assembly process, poles are maneuvered into place using cranes and other lifting equipment to facilitate connections. Once assembled, a crane is used to lift the structures for final placement on the foundation.

178. After the structures are erected, conductor installation will commence. The process of installing conductors involves stringing a pilot line into each structure stringing block to form a continuous connection between stringing end points. This pilot line is then used to pull the

conductor into position. The conductor is then tensioned to design specifications, transferred to the support clamp, and clipped into position. The operation is performed on all overhead ground wires and conductors. Typical equipment used in the conductor installation operation includes bucket trucks, wire pulling equipment, guard structures, wire reels, trailers, tensioners, and support vehicles.

179. The final stage of construction will be right-of-way restoration which includes removal of all construction equipment and supplies, grading the right-of-way if needed, and planting or seeding of the disturbed area if needed.

180. During all stages of construction, PEF will maintain traffic on any adjacent county, state, or federal roadways in compliance with DOT regulations. Sedimentation management techniques, including turbidity screens, temporary culverts, silt fences or staked hay bales, and the seeding or mulching of side slopes, will be utilized to minimize potential impacts to water quality from erosion and sedimentation.

Corridor Descriptions

181. The LNP will add approximately 185 miles of new 69-kV, 230-kV, and 500-kV transmission lines to be placed within nine proposed corridors. The proposed corridors provide significant opportunities for collocation with other linear facilities such as roads and transmission lines which provides

the opportunity to reduce costs, the amount of new access road construction, impacts to wildlife habitat, and other impacts. The width of the proposed corridors varies along the routes to provide flexibility within the corridors to avoid impacts to existing developments, large wetland areas, and other features. After certification, and following the selection of rights-of-way, the boundaries of the corridors will be reduced to those of rights-of-way.

182. The first proposed corridor is associated with the Citrus 1 and 2 lines. The Citrus lines are also referred to as the "LPC" transmission lines and the proposed corridor is referred to as the LPC corridor. The Citrus lines are two 500-kV transmission lines that will connect the LNP to the proposed Citrus Substation, which is not a facility for which PEF is seeking certification. The Citrus 1 and 2 lines will be located in Levy and Citrus Counties. This proposed corridor is approximately seven miles long and one mile wide. The LPC Corridor begins at the LNP site boundary and proceeds south on PEF-owned property south of the LNP site. Through the southern property, the LPC Corridor is collocated with the proposed Sumter and Crystal River 500-kV lines, the Levy South Administration 69-kV line, and is adjacent to the proposed LNP heavy haul road and water pipeline corridors. Continuing south, the LPC Corridor remains collocated with the Sumter and Crystal

River lines as well as PEF's existing IO 69-kV line at some locations. The LPC corridor will cross C.R. 40, the CFBC and Inglis Island (which is wedged between the LWR and the CFBC), and will terminate at the proposed Citrus Substation located just north of PEF's existing Crystal River Central Florida transmission line in Citrus County.

183. The second proposed corridor is associated with the Crystal River line, which is also referred to as the "LCR" transmission line and the corridor is referred to as the LCR Corridor. The Crystal River line is a 500-kV transmission line that connects the LNP to the existing CREC switchyard in Citrus County. The Crystal River line will be located within Levy and Citrus Counties. The LCR Corridor is approximately 14 miles long and one mile wide. It begins at the LNP site boundary and proceeds south on the PEF-owned property south of the LNP site. Through the southern property, the LCR corridor is collocated with the proposed Sumter and Citrus 1 & 2 500-kV lines, and the Levy South Administration 69-kV line, and is adjacent to the proposed LNP heavy haul road and water pipeline corridors. Continuing south, the corridor remains collocated with the Sumter and Citrus 1 & 2 lines as well as PEF's existing IO 69-kV line in some locations. The LCR Corridor will cross C.R. 40, the CFBC and Inglis Island, and will enter the existing PEF Crystal River to Central Florida transmission line right-of-way.

At this point, the LCR Corridor turns west and follows the general alignment of the existing PEF Crystal River to Central Florida Transmission right-of-way into the CREC where it terminates at the CREC 500-kV switchyard.

184. The third proposed corridor is associated with the Sumter line, which is also referred to as the "LCFS" transmission line. This corridor is referred to as the LCFS Corridor. The Sumter line is a 500-kV transmission line that will connect the LNP to the proposed Central Florida South Substation in Lake and Sumter Counties, which is not a facility for which PEF is seeking certification. The Sumter line will be located in Levy, Citrus, Marion, and Sumter Counties. The LCFS Corridor is approximately 59 miles long and ranges in width from approximately 1,000 feet to one mile wide. For most of its length, the 500-kV LCFS Corridor is collocated with the existing PEF transmission lines, except in the vicinity of the Central Florida South Substation, where it is collocated with the Florida Turnpike. The LCFS Corridor begins at the LNP site boundary and proceeds south on the PEF-owned property south of the LNP site. It will be collocated with the proposed Citrus 1 & 2 and Crystal River 500-kV lines and the Levy South Administration 69-kV line. The LCFS Corridor crosses C.R. 40, the CFBC and Inglis Island, and continues south until reaching the existing PEF Crystal River to Central Florida transmission

line right-of-way. At that point, the LCFS Corridor turns east and follows the existing transmission line right-of-way through Citrus and Marion Counties for approximately 45 miles. The corridor turns southeast crossing into Sumter County and crosses S.R. 44 and I-75. The remaining five miles of the LCFS Corridor follows the general alignment of the Florida Turnpike to the southeast and terminates in the area of the proposed Central Florida Substation near Wildwood.

185. The fourth proposed corridor is associated with the Crystal River East 1 & 2 lines, which are also called the "CCRE" transmission lines. This is the CCRE Corridor. The Crystal River East lines are two 230-kV transmission lines that will connect the proposed Citrus Substation to the existing Crystal River East Substation in Citrus County. The lines will be located entirely within Citrus County. The CCRE Corridor is approximately 2.7 miles in length and one mile wide. The west end of the north boundary of the corridor is approximately one-half mile west of U.S. 19 and runs east approximately one-half mile north of West Dunnellon Road (CR-488). The west end of the south boundary of the corridor starts approximately 1 mile west of U.S. 19 and runs east along the northern boundary of the existing PEF transmission right-of-way. At a point approximately 0.3 miles east of U.S. 19, the corridor shifts south approximately one-half mile and continues east for another

mile. The corridor also includes five existing 115-kV, 230-kV and 500-kV transmission lines and the Crystal River East Substation.

186. The fifth and sixth proposed corridors are associated with the Levy North and South lines, which are also referred to as the "IS" and "IO" transmission lines. The Levy North and South lines are 69-kV transmission lines required to supply power for the construction and administration of the LNP. These lines will be located entirely within Levy County, and are mostly located on property owned by PEF in the immediate vicinity of the proposed LNP. The IS Corridor is approximately 373 feet in length and 400 feet wide. The IO Corridor is approximately 4.5 miles in length and one mile wide. The IO Corridor will begin at the south boundary of the LNP site and extend south to encompass the existing 69-kV transmission line located south of C.R. 40 in Levy County. The IS Corridor will begin at the west boundary of the LNP site and extend west to encompass the existing 69-kV transmission line that is located parallel to and east of U.S. 19 in Levy County.

187. The seventh proposed corridor is associated with the Brookridge line, which is also referred to as the "CB" transmission line. The corridor is referred to as the CB Corridor. The Brookridge line is a 230-kV transmission line that will connect the existing CREC to the existing Brookridge

Substation in Hernando County. The Brookridge line will be located in Citrus and Hernando Counties. The overall length of the CB corridor is approximately 38 miles and ranges in width from approximately 1,000 feet to one mile. The corridor begins at the CREC switchyard and proceeds east towards the existing Crystal River East Substation then southeast to S.R. 44. The corridor collocates with existing transmission line rights-of-way. At S.R. 44, the corridor turns south, following the existing PEF 115-kV transmission right-of-way. Approximately one mile south of Centralia Road, the corridor turns east and ends at the existing Brookridge Substation.

188. The eighth proposed corridor is associated with the Brooksville West line, which is also called the "BBW" transmission line. The corridor is referred to as the BBW Corridor. The Brooksville west line is a 230-kV transmission line that will connect the existing Brookridge Substation to the existing Brooksville West Substation in Hernando County. This line will be located entirely within Hernando County. The overall length of the BBW Corridor is approximately three miles and one-half mile wide. The BBW Corridor exits the Brookridge Substation, collocated with PEF's existing 500/230/115-kV transmission line right-of-way, and travels along Sunshine Grove Road to the south. It terminates at the Brooksville West Substation.

189. The ninth and final proposed corridor is associated with the Kathleen line, which is also called the "PHP" transmission line. The corridor is referred to as the PHP Corridor. The Kathleen line is a 230-kV transmission line that will connect the existing Kathleen Substation in Polk County to the existing Lake Tarpon Substation in Pinellas County. The Kathleen line will be located in Polk, Hillsborough, and Pinellas Counties. The overall length of the PHP Corridor is approximately 50 miles, and it ranges in width from approximately 300 feet to 1000 feet. The corridor begins at the Kathleen Substation and travels west. It crosses U.S. 98 and turns south along the existing transmission line right-of-way to the Griffin Substation. At the Griffin Substation, the corridor turns west paralleling C.R. 582. The corridor crosses U.S. 301 and turns north and then west and crosses I-75, continuing northwest and following the existing transmission right-of-way, and then crosses I-275 and the Veteran's Expressway to the Lake Tarpon Substation.

190. No alternate corridors were proposed for any of the nine proposed transmission line corridors. For each PEF-proposed transmission line corridor, the proposed corridor is the only corridor for the respective line that is proper for certification in this proceeding.

191. For each of the proposed corridors, engineering features of interest, natural resource features, and land use features have been identified and depicted on maps, aerial images, and photographs, which have been utilized in the analysis of the corridors.

Operational Safeguards

192. The operational safeguards for each of the transmission lines proposed by PEF are technically sufficient for the public welfare and protection.

193. Each transmission line will be designed, constructed, operated, and maintained in compliance with all applicable codes, standards, and industry guidelines, including: the National Electric Safety Code; the North American Electric Reliability Corporation; the American National Standards Institute; applicable local government requirements; the DOT Utility Accommodation Guide; and PEF's internal design standards, which incorporate appropriate provisions or guidance from design codes and standards of the American Society of Civil Engineers, the Institute of Electrical and Electronics Engineers, the American Society of Testing Materials, the American National Standards Institute, and the American Concrete Institute.

194. Each of the transmission lines proposed by PEF will be constructed, operated, and maintained in compliance with the

applicable standards which regulate the electric and magnetic fields associated with new transmission lines.

195. Compliance with the electric and magnetic field requirements has been calculated for each of the configurations that may be utilized for the Project. The results were then compared to the requirements contained in DEP's Rule 62-814.450(3). The maximum expected values from all configurations for the electric fields and for the magnetic fields are within the values set forth in the rule.

196. The calculations were performed in accordance with the rule requirements, using the maximum voltage and current for each configuration. Operation of any of these transmission lines at maximum voltage and current is not a likely condition. At normal operating levels of voltage and current, the electric fields produced by the transmission lines will be less than calculated at the maximum operating conditions, and the magnetic fields produced will be about 50 percent less than calculated at the maximum operating conditions.

197. The levels of electric and magnetic fields at the edge of the rights-of-way associated with the transmission lines are similar to levels that are experienced by exposure to common household appliances.

198. Transmission lines can generate audible noise as a result of build-up of particles on the conductor. This is known

as corona. During periods of fair weather, particulate matter can collect on the conductor causing low levels of audible noise. During rain events, the particles are washed off and replaced with water droplets on the conductor that create a condition that can result in slightly higher levels of audible noise. The noise levels experienced during rainfall events are temporary and masked by the sound of rain falling on vegetation and other surfaces, and the noise is reduced as soon as the water droplets evaporate from the conductor.

199. The expected levels of noise have been calculated using an industry standard software program known as the Bonneville Power Administration Corona Field Effects Program. The calculations performed for each of the transmission lines demonstrate that the maximum audible noise levels at the edge of the right-of-way will be less than the noise levels from most rainfall events or conversational speech at a distance of five feet. The calculated noise levels are expected to comply with all applicable noise ordinances.

200. The operation of the proposed transmission lines is expected to cause minimal interference with radio and television reception in the vicinity of the transmission lines. Radio and television interference can be produced by corona on transmission line conductors or as a result of faulty equipment. Based upon the studies that have been performed, it is not

expected that significant interference will occur. Beginning on July 12, 2009, the Federal Communications Commission has directed all television station operators to convert their transmissions to digital format. Digital signals are unaffected by electric fields or weather disturbances. In the event any homeowner or business experiences abnormal interference as a result of the transmission lines, PEF will investigate the complaints and mitigate impacts appropriately.

201. Part of the BBW Corridor has an existing natural gas pipeline and a proposed additional natural gas pipeline that will be operated by Florida Gas Transmission Company. Safety concerns will be addressed in a licensing agreement allowing the pipeline company to utilize the right-of-way. Such collocation is common throughout Florida. The licensing agreement will require that the pipeline company comply with all applicable safety requirements for pipeline operation and will require that the pipeline design be reviewed by an independent engineering company to ensure that the pipeline can be safely operated given the constraints of the design and the proximity of transmission lines. This will ensure that the pipeline can be safely operated near the transmission lines and the electric current.

Compliance with Nonprocedural Standards of Agencies

202. The construction, operation, and maintenance of each of the proposed transmission lines in the proposed corridors is

expected to comply with the applicable nonprocedural requirements of agencies.

203. The parties have agreed that the conditions of certification found in DEP Exhibit 1 are the applicable nonprocedural requirements of the state, regional, and local agencies with regulatory jurisdiction over the transmission lines.

204. PEF has agreed to construct, operate, and maintain the transmission lines in the proposed corridors in compliance with the conditions of certification. No variances or exemptions from applicable state, regional, or local standards or ordinances have been requested or are needed for construction, operation, and maintenance of these transmission lines.

Consistency with Local Government Comprehensive Plans and Land Development Regulations

205. There are a number of different land uses within the nine proposed corridors ranging from open lands, recreational lands, mining and agricultural lands, public and conservation lands, commercial uses, and residential. The construction of the transmission lines in the respective proposed corridors is not expected to impact the existing land uses or change those land uses. The location of the transmission lines in the proposed corridors is appropriate from a land use perspective.

206. The construction, operation, and maintenance of the transmission lines in the respective corridors are compatible with all types of existing land uses occurring in the vicinity of those corridors.

207. Each of the proposed transmission lines will be constructed, operated, and maintained in the proposed corridors consistent with applicable provisions of local government comprehensive plans and land development regulations.

208. After certification of the LNP, each proposed transmission line will be located and constructed established rights-of-way, including easements acquired after certification of the respective corridors. Construction of transmission lines on such established rights-of-way is excepted from the definition of "development" contained in Section 163.3164(6), Florida Statutes. To the extent that comprehensive plans or land development regulations of the local governments crossed by the transmission lines include provisions that are applicable to non-development activities, the transmission lines in each of the designated corridors will be consistent and in compliance with those requirements.

Meet Electrical Energy Needs of the State
In an Orderly, Timely and Reliable Fashion

209. Each proposed transmission line will be constructed, operated, and maintained in the proposed corridor to meet the

electrical energy needs of the state in an orderly, reliable, and timely fashion.

210. The anticipated schedule for the transmission line portion of the Project calls for the permitting, licensing and engineering activities, right-of-way acquisition, and construction to be carried out such that the transmission lines are constructed and operating in 2015 in advance of certain construction and start-up activities for LNP Unit 1.

211. The proposed corridors maximize collocation opportunities for the transmission lines, enabling the collocated transmission lines to be constructed in a more timely and efficient manner.

212. PEF will make all practicable efforts to minimize the impacts to traffic from the proposed transmission lines. PEF will comply with conditions of certification proposed by DOT and local governments to facilitate the orderly construction, operation, and maintenance of each of the transmission lines in the proposed corridors.

Reasonable Balance Between the Need and the Impacts

213. Each of the transmission lines is essential to meet the need identified by the PSC. PEF has a long history of reliably constructing, operating, and maintaining similar transmission lines throughout Florida. Each of the transmission lines is designed to comply with stringent reliability standards

such as the National Electrical Safety Code and the standards of the North American Electric Reliability Corporation.

214. The construction, operation, and maintenance of the transmission lines in the proposed corridors will meet the need identified by the PSC. The PSC determined that there is a reliability need for additional base-load capacity by 2016. Levy Units 1 and 2 will add 2200 MW of capacity, and new transmission lines are necessary to accommodate this capacity on the electrical power system. The required transmission facilities include those necessary to connect the LNP to PEF's existing grid and to reliably integrate the additional capacity into the existing transmission system. PEF cannot meet the need identified by the PSC without these proposed transmission lines.

215. PEF's proposed corridors were chosen using a multidisciplinary team of experts to minimize impacts on the environment. Each transmission line will be constructed, operated, and maintained in the designated corridor with minimal adverse environmental impacts. The corridor selection process involved regional screening to minimize inclusion of areas of ecological constraints. Each corridor maximizes utilization of previously disturbed areas, where possible. The corridor width has been selected for each corridor to provide flexibility for selection of the final right-of-way to provide the ability to

avoid ecological resources within the corridor to the extent practicable.

216. No adverse impacts to air quality are anticipated as a result of the construction or operation of the transmission lines.

217. Each of the transmission lines will be constructed, operated, and maintained in the proposed corridor with minimal, if any, adverse impact to water quality.

218. Each transmission line will be constructed, operated, and maintained in the proposed corridor with minimal adverse impact to fish and wildlife, including protected animal species. The presence of protected animal species was an important consideration during the corridor selection process, and each corridor avoids areas with known concentrations of protected species occurrences to the extent practicable. The agreed-upon conditions of certification require that preconstruction surveys be conducted, and the results will be submitted to the FWC for analysis. Mitigation, as appropriate, may be required.

219. Each transmission line will be constructed, operated, and maintained in the proposed corridor with minimal adverse impact to water resources, including wetlands. Water resources, including wetlands, were an important consideration during the corridor selection process and were avoided to the extent practicable. Structures will not be constructed in major water

bodies. The spans between structures will be varied to avoid wetland areas and other sensitive areas, where practicable. Herbaceous wetland communities, including marsh and wet prairie wetlands, can continue to grow underneath the proposed transmission lines. Best management practices will be utilized during construction to ensure that impacts to water bodies and other water resources are minimized.

220. Each transmission line will be constructed, operated, and maintained in the proposed corridor with minimal adverse impacts to other natural resources, including protected plant species and wildlife habitat. The presence of protected plant species and wildlife habitat were important considerations during the corridor selection process and were avoided to the extent practicable. Wildlife habitat in the vicinity of each of the corridors with collocation opportunities has been altered from its natural state for construction and maintenance of the linear facility already there. This will minimize potential impacts.

Minimize Adverse Effects
Using Reasonable and Available Methods

221. PEF will use reasonable and available methods during construction, operation, and maintenance of the transmission lines in the proposed corridors to minimize adverse effects on human health, the environment, and the ecology of the land and

its wildlife and the ecology of state waters and their aquatic life.

222. Construction, operation, and maintenance of the transmission lines in the designated corridors will comply with the limits for electric and magnetic fields established by DEP in Rule Chapter 62-814 and by the National Electric Safety Code and related standards.

223. In the corridor selection process, collocation opportunities were considered to be a significant criterion, and the corridors were chosen in a way that maximizes collocation with existing linear facilities. This is advantageous because existing linear facilities often provide existing access, and collocation can minimize the need for new access roads and structure pads and the need for new clearing, generally minimizing impacts.

224. PEF will avoid wetlands and water bodies to the extent practicable by varying the length of the spans between structures.

225. PEF will use restrictive clearing practices on forested wetlands, removing vegetation selectively. In cases in which fill is required, PEF will install culverts to maintain water movement.

226. PEF will allow certain vegetation to re-grow, or re-vegetate, in the rights-of-way of the transmission lines

following construction, which will maintain suitable habitat for certain listed species. Wetland impacts that cannot be avoided will be appropriately mitigated.

227. Prior to final rights-of-way determination and the beginning clearing in the rights-of-way for the transmission lines, surveys for protected plant and animal species will be conducted to verify their presence or absence in the proposed transmission line right-of-way for each of the lines. In the event that protected plants or animals cannot be avoided, efforts will be made to relocate the individuals in consultation with the FWC and the United States Fish and Wildlife Service, or to provide appropriate mitigation in accordance with the conditions of certification.

228. PEF has agreed to comply with the conditions of certification in the construction, operation, and maintenance of each of the transmission lines. The conditions require measures to eliminate or minimize potential impacts to the environment, including impacts to the ecology of the land and its wildlife and the ecology of state waters and their aquatic life.

Serve and Protect the Broad Interest of the Public

229. The construction, operation, and maintenance of the transmission lines in the proposed corridors will serve and protect the broad interests of the public. The public's interest is served through the provision of safe, reliable, and

cost-effective electric service. The transmission lines are essential for providing that service.

230. The public outreach program carried out by PEF provided the public with an avenue to voice their concerns. Concerns expressed were considered in the selection process.

231. The corridor selection process maximized collocation opportunities for the selection of each of the corridors, where practicable. By following existing linear features where possible, the corridors and the ultimate rights-of-way can conform to existing development patterns and minimize intrusions into surrounding areas. Collocation reduces costs and impacts.

232. The existing land uses found within the corridors are compatible with each of the proposed transmission lines in part because the corridors are collocated with linear facilities to the extent feasible. The transmission lines that are proposed can coexist with the types of development that are found along each of the corridors.

233. As a result of the process utilized by the multidisciplinary team, the corridors minimize the number of homes that may be affected and avoid public and conservation lands to the maximum degree practicable. The transmission lines will minimize the impacts on cultural and historical resources by avoiding those areas where practicable and by performing a preconstruction survey in consultation with DEP and the Division

of Historical Resources to determine the appropriate action should such resources be found.

234. Disruption to traffic during the construction of each of the transmission lines is expected to be minor. PEF will comply with conditions of certification proposed by DOT and local governments to ensure minimization of traffic impacts.

235. Radio and television interference as a result of the operation of the transmission lines will be minimal, and any impacts will be addressed by PEF.

236. The expected noise levels from the transmission lines will be similar to the noise levels resulting from rainfall events and conversation at five feet. The calculated noise levels will comply with all applicable noise ordinances and requirements.

237. The electric and magnetic fields produced by the transmission lines will comply with the applicable standards established by the DEP.

III. Southern Alliance for Clean Energy (SACE)

238. Following the withdrawal of the other intervenors in this proceeding, SACE was the only remaining party opposing certification of the Project. In the prehearing stipulation of the parties, SACE appears to raise five basic issues: (a) there must be express conditions in the agency reports to address impacts to wetlands, fish, wildlife, water resources, and

necessary mitigation should the Project not be completed; (b) adverse impacts to wetlands and water resources; (c) business risks of "significant delay, default or abandonment"; (d) risks to fish, marine wildlife, and vegetation; and (e) agency reports must address risks to water resources, wetlands, fish, marine wildlife, and vegetation. SACE did not offer the testimony of any witnesses or present any evidence in this proceeding on these or any other issues.

a. With regard to SACE's first issue, SACE has failed to identify which of the reviewing agencies neglected to propose appropriate conditions or what additional conditions are necessary. In any event, the record shows that DEP, FWC, and SWFWMD all proposed extensive conditions in their agency reports related to protection of wetlands, fish, wildlife, water resources, and/or mitigation of Project-related impacts. With regard to wetlands mitigation, if the Project is not completed, PEF will perform mitigation necessary to compensate for wetlands actually impacted. See Finding of Fact 126.

b. SACE's second contention is that the Project will cause adverse impacts to wetlands and water resources. As detailed in Findings of Fact 73, 115-131, 133-134, PEF has presented competent, substantial evidence that the LNP will not cause adverse impacts to wetlands or to water resources that are not fully offset by mitigation. SACE did not present any contrary

evidence. Further, as indicated in Findings of Fact 124-126, 130, and 134, PEF has proposed a comprehensive wetlands mitigation plan that will offset any adverse impacts to wetlands caused by the construction of the LNP. SACE did not present any evidence that this mitigation plan, which has been conceptually approved by the DEP, is inadequate to protect wetlands or meet regulatory requirements.

c. SACE's third contention is related to business risks of "significant delay, default or abandonment." These matters are not relevant under the PPSA criteria, Section 403.509(3), Florida Statutes, but are instead addressed by the PSC. A petition for a determination of need for a new nuclear plant must include a cost estimate, base revenue requirements, and information related to joint ownership discussions. See § 403.519(4)(a), Fla. Stat. The PSC has already determined that the Project is needed, specifically finding that "Levy Units 1 and 2 will provide adequate electricity at a reasonable cost." Under Section 403.519(4), Florida Statutes, the PSC is the "sole forum" for a determination of need. Reconsideration of factors already considered by the PSC in this proceeding is improper. Further, the record does not support SACE's contention regarding alleged business risks. PEF presented uncontroverted evidence that LNP Units 1 and 2 are on schedule to be in service in the

2016/2017 timeframe and that procurement activities have begun. See Finding of Fact 21.

d. SACE's fourth issue relates to adverse impacts to fish, marine wildlife, and vegetation. As detailed in Findings of Fact 51, 56, 61, 62, 69-72, 88-92, and 131-133, PEF presented competent, substantial evidence that the LNP will not cause adverse impacts to fish, marine wildlife, or vegetation. SACE did not present any contrary evidence.

e. Finally, SACE contends that the agency reports must address risks to water resources, wetlands, fish, marine wildlife, and vegetation. Again, SACE has failed to identify which agency reports failed to address these alleged risks. SACE likewise has not identified any specific regulatory requirement for such evaluations of environmental risks beyond the evaluations provided by the agencies. The record shows that DEP, FWC, SWFWMD, and Levy County all addressed risks to water resources, wetlands, fish, marine wildlife, and/or vegetation in their agency reports and proposed conditions of certification related thereto.

IV. Public Comment and Public Testimony

239. Sworn oral public testimony was received from approximately 69 individuals and unsworn public comment was received from approximately 16 individuals during the portion of the final hearing devoted to that purpose. Many of the

individuals who provided public testimony also submitted written comments. Three written comments were received from members of the public who did not attend one of the public comment sessions. Thirty hours were devoted to allowing members of the public to comment on the Project over six separate sessions.

240. Members of the public testified both in favor of and in opposition to the Project. Several members of the public commented on the benefits of nuclear power in general and the economic benefits of the LNP specifically. Many others spoke in favor of the extensive public outreach conducted by PEF on the Project. Numerous members of the public spoke of PEF's history of being a good corporate neighbor.

241. The individuals who testified in opposition to the Project raised a wide range of questions and concerns. Many of these concerns and questions are addressed by the evidence and are discussed by reference to the relevant Findings of Fact. However, several were outside the scope of the matters considered in this certification hearing.

242. Several members of the public expressed concerns that the Project is not needed, is too costly, and should be deferred in favor of other energy alternatives. But the PSC already considered those issues in certifying a need for the Project. The PSC's determinations are binding, and those issues were not reconsidered in this certification hearing.

243. Several members of the public expressed concerns related to radiological safety, storage of nuclear waste, and radioactive effluent contamination of groundwater via "fracture sets." Radiological issues raised by SACE were stricken because they were preempted by federal regulation under the Supremacy Clause of the United States Constitution. As a result, radiological safety issues were not considered in the certification hearing. The LNP must be approved by the NRC which regulates radiological safety of nuclear power plants. However, there was evidence that the Florida Department of Health monitors groundwater and other media in the vicinity of nuclear plants, and PEF's subsurface investigation did not reveal any evidence of fracture sets below the LNP site. See Finding of Fact 79.

244. Some members of the public expressed concerns regarding potential infrastructure and lifestyle changes to the Town of Inglis. Specifically, members of the public raised concerns related to strain on local public services; traffic impacts; limits on development due to the LNP; and concerns that financial benefits will go only to Levy County and, more specifically, not the Town of Inglis. First, it should be noted that, along with other affected local governments, the Town of Inglis was provided a copy of PEF's nine-volume SCA on June 2, 2008. The Town of Inglis did not file a notice of intent to be

a party to this proceeding pursuant to Section 403.508(3), Florida Statutes, and thus waived its right to be a party. In addition, the Town had the opportunity to submit an agency report or to propose conditions of certification pursuant to Section 403.507, Florida Statutes, but did not. As acknowledged in public testimony by one of the Town Council members, the Town of Inglis's Council is unanimously in favor of the LNP.

245. Nonetheless, as detailed in Findings of Fact 143-146, PEF presented competent substantial evidence that public services and facilities in the region of the LNP (which includes the Town of Inglis) are sufficient to absorb any incremental population growth associated with construction and operation workers and their families. PEF also presented evidence that roadways in the vicinity will continue to operate at or above their adopted level of service capacities. See Findings of Fact 135-137. Further, there is no evidence that development will be restricted as a result of the LNP. Current limitations around the CREC related to increases in density are the result of Citrus County's Comprehensive Plan, not the CREC or state regulatory requirements. Finally, while significant tax revenues will go to Levy County, PEF presented evidence that the LNP's operation will contribute \$521 million annually to the regional economy, which includes the Town of Inglis. See Finding of Fact 148. By way of comparison, although PEF's CREC

is in Citrus County (and outside the Crystal River city limits), the Crystal River City Manager testified that PEF has been good for the Citrus County school system, has provided jobs for residents, and has been very helpful to efforts in the community.

246. Other members of the public expressed concerns that the new jobs created by the LNP will not go to local residents. As indicated in Finding of Fact 141, PEF has and will continue to make efforts to train and employ local residents at the LNP.

247. Other members of the public expressed concern that increased salinity in the CFBC would cause saltwater intrusion in the Lower Withlacoochee River. There is no connection between the CFBC and the Lower Withlacoochee River. While the LNP's withdrawals from the CFBC will increase salinity in the CFBC somewhat, it will not cause increased salinity in the Lower Withlacoochee River. See Findings of Fact 66-67.

248. A member of the public expressed concern that PEF's proposed location for the CWIS would prevent future reconnection of the Withlacoochee River in an effort to provide more freshwater to the Lower Withlacoochee River.³ As detailed in Finding of Fact 68, options for reconnection of the Withlacoochee River have been evaluated by SWFWMD, but would not provide adequate increased freshwater flow to the Lower Withlacoochee River.

249. Another issue raised during the public testimony sessions was the impact of cooling tower drift on vegetation surrounding the LNP. As indicated in Findings of Fact 103-104 and 110-111, PEF presented uncontroverted expert testimony that cooling tower drift will not adversely impact natural resources, including wetlands and surface waters.

250. Several residents of Hernando County expressed concern that a portion of the BBW transmission line as proposed along Sunshine Grove Road is incompatible from a public safety standpoint with existing and proposed natural gas pipelines in this same area. PEF presented evidence, however, that this type of collocation of transmission lines and gas pipelines is commonplace throughout Florida. Further, it was not demonstrated that such collocation is prohibited under or contrary to applicable law or agency regulation.

251. Some of these residents focused their concern on whether locating the BBW transmission line in proximity to a natural gas pipeline would be inconsistent with PEF's internal collocation guidelines, which these residents believe prohibit such collocation because an unsafe operating condition will result. As noted by Hernando County's attorney and DEP's Siting Administrator, there is no basis in statute, ordinance, or rule to require PEF to comply with its internal guidelines. In any event, PEF presented evidence that the purpose of its internal

collocation guidelines is to ensure the safety of persons involved in the construction and installation of a pipeline in proximity to an existing transmission line. Further, PEF is bound by the conditions of certification to comply with requirements of the National Electric Safety Code as they relate to induced currents that might affect a gas pipeline. See DEP Ex. 1, p. 76, Condition XLII(H).

252. Other residents were concerned that construction of the BBW transmission line would be unsafe due to the presence of an existing natural gas pipeline. The conditions of certification require, however, that PEF comply with applicable federal Occupational Safety and Health Standards during construction of each of the transmission lines. The conditions of certification also require PEF to contact the Sunshine State One Call service to locate underground utilities prior to construction activities. Finally, after PEF selects its ultimate location for the BBW transmission line, Hernando County and other agencies will have the opportunity to review the proposed location and notify the DEP Siting Coordination Office if it believes that the construction of the transmission line within the selected right-of-way cannot be accomplished in accordance with the conditions of certification. See DEP Ex. 1, p. 65-66, Condition XXXV(A).

CONCLUSIONS OF LAW

253. Jurisdiction. The Division of Administrative Hearings has jurisdiction over the parties to, and the subject matter of, this proceeding. § 403.508(2), Florida Statutes.

254. Parties and Standing. The parties to this proceeding are: (1) PEF; (2) DEP; (3) the Hillsborough EPC; (4) Hernando County; (5) Sumter County; (6) SWFWMD; (7) Polk County; (8) DCA; (9) Lake County; (10) City of Oldsmar; (11) Hillsborough County; (12) Levy County; (13) SJRWMD; (14) Citrus County; (15) the City of Dunnellon; (16) the City of Tampa; (17) Marion County; (18) FWC; (19) Pinellas County; (20) DOT; (21) the City of Wildwood; and (22) SACE. PEF did not object to the standing of these parties to participate in the certification proceeding. The Partin Family; the RRRC; the Rainbow Springs Property Owners Association; the Cool Springs Farm, LLC; the Rainbow IV Partners, RLLP; Rainbow IV Investments, RLLP; WAR; and the Sierra Club all voluntarily withdrew from this proceeding. Other agencies failed to file a notice of intent to be a party and have therefore failed to become parties to this proceeding. See § 403.508(3)(b), Fla. Stat.

255. Intent. This certification proceeding was held pursuant to the Florida Electrical Power Plant Siting Act, Chapter 403, Part II, Florida Statutes, and Rule Chapter 62-17,

Part I, which sets out the procedures for power plant siting review. The intent of this licensing process is:

to seek courses of action that will fully balance the increasing demands for electrical power plant location and operation with the broad interests of the public.

§ 403.502, Fla. Stat.

256. Notice. In accordance with Chapters 120 and 403, Part II, Florida Statutes, and Rule Chapter 62-17, proper notice was accorded to all persons, entities, and parties entitled to such notice, and appropriate notice was provided to the general public by both DEP and PEF.

257. Procedural Requirements. The evidence in the record of this proceeding demonstrates compliance with the procedural requirements of the PPSA, including the notice requirements for the certification and public hearings. Reports and studies were issued by DEP and other agencies in satisfaction of their various statutory duties under the PPSA.

258. Need. The PSC has issued an affirmative determination that a need exists for the Levy Nuclear Plant and associated facilities in accord with Section 403.519, Florida Statutes. The PSC is the sole forum for the determination of need for the Project, pursuant to Section 403.519(4), Florida Statutes. Reconsideration of the PSC need determination in this PPSA proceeding is improper. See, e.g., Florida Chapter of the

Sierra Club v. Orlando Utils Comm'n, 436 So. 2d 383, 388 (Fla. 5th DCA 1983) ("The determination of need is solely within the jurisdiction of the PSC, and any reevaluation of need at the certification hearing would be wasteful and improper.").

259. Burden of Proof. As the applicant for certification, PEF "carries the 'ultimate burden of persuasion' of entitlement through all proceedings, of whatever nature, until such time as final action has been taken by the agency." Fla. Dep't of Transp. v. J.W.C. Co., 396 So. 2d 778, 787 (Fla. 1st DCA 1981). The standard for PEF's burden of proof is one of reasonable assurances, not absolute guarantees, that the applicable criteria for the issuance of the certification have been satisfied. See Manasota-88, Inc. v. Agrico Chem. Co., DOAH Case 87-2433, 1990 Fla. ENV LEXIS 38 (DER Feb. 1990). "Reasonable assurance" contemplates a "substantial likelihood that the project will be successfully implemented." Metro. Dade County v. Coscan Fla., Inc., 609 So. 2d 644, 648 (Fla. 3d DCA 1992); Hamilton County Bd. of County Comm'rs v. Fla. Dep't of Env'tl. Reg., 587 So. 2d 1378, 1387 (Fla. 1st DCA 1991). PEF is "not required to disprove all the 'worst case scenarios' or 'theoretical impacts' raised" by parties or members of the public in the proceeding. Ginnie Springs Inc. v. Watson et al., DEP DOAH Case Nos. 98-0945, 98-1070, and 98-1071, 1999 Fla. Div. Adm. Hear. LEXIS 5830 (DOAH Feb. 23, 1999; DEP Apr. 8, 1999).

260. In this proceeding, PEF has met its burden of showing by a preponderance of the evidence its entitlement to site certification for the Levy Nuclear Project under the PPSA. The data and information submitted by PEF to the agencies and at the hearing has not been rejected or contested by any of the agency parties, including DEP, which have expertise in the matters involved in this Project and which have reviewed the information submitted by PEF on the Project. The evidence offered by PEF is therefore entitled to acceptance as meeting PEF's burden of proof in support of issuance of a site certification for the Project. See J.W.C., 396 So. 2d at 787.

261. In addition to PEF's evidence, the other evidence in support of issuance of certification includes the DEP's SAR and testimony of DEP staff. The DEP's SAR reflects agencies' review of the Project and demonstrates the Project's compliance with applicable regulatory requirements, including the criteria for certification under Section 403.509(3), Florida Statutes. These include, but are not limited to air quality standards, water use standards, environmental resource permitting standards, noise-related standards, traffic standards and local land development regulations. Cumulatively, this evidence from PEF, DEP, and other agencies comprises the competent, substantial evidence in support of certification of the Project.

262. Once an applicant makes a preliminary showing of its entitlement to certification, the burden shifts to those opposing the Project to offer "contrary evidence of equivalent quality" to show why the certification should be denied. J.W.C., 396 So. 2d at 789. In this case, no agency or party offered evidence in opposition to that presented by PEF. As discussed in the Findings of Fact above, SACE and several members of the public raised generalized concerns and statements in opposition to the Project, but their statements do not constitute "contrary evidence of equivalent quality" to the evidence provided by PEF in support of certification. Id. Accordingly, PEF has met its burden of proof in this case.

263. Criteria for Final Disposition of PEF's Application. In deciding whether PEF's SCA should be approved, approved with conditions, or denied, the Siting Board must determine whether, and the extent to which, the location, construction, and operation of the Project will:

- (a) Provide reasonable assurance that operational safeguards are technically sufficient for the public welfare and protection.
- (b) Comply with applicable nonprocedural requirements of agencies.
- (c) Be consistent with applicable local government comprehensive plans and land development regulations.

(d) Meet the electrical energy needs of the state in an orderly, reliable, and timely fashion.

(e) Effect a reasonable balance between the need for the facility as established pursuant to s. 403.519 and the impacts upon air and water quality, fish and wildlife, water resources, and other natural resources of the state resulting from the construction and operation of the facility.

(f) Minimize, through the use of reasonable and available methods, the adverse effects on human health, the environment, and the ecology of the land and its wildlife and the ecology of state waters and their aquatic life.

(g) Serve and protect the broad interests of the public.

§ 403.509(3), Fla. Stat. Issues related to radiological safety are not considered under the statute because they have been preempted by federal regulation under the Supremacy Clause of the United States Constitution.

I. Plant and Associated Facilities

264. § 403.509(3)(a) – Operational Safeguards. In accordance with Section 403.509(3)(a), Florida Statutes, PEF has provided reasonable assurance that the operational safeguards for the construction, operation, and maintenance of the LNP are technically sufficient for the public welfare and protection.

265. § 403.509(3)(b) – Nonprocedural Requirements. Pursuant to Section 403.509(3)(b), Florida Statutes, the location, construction, and operation of the LNP will comply

with applicable nonprocedural requirements of agencies, provided that PEF complies with the proposed conditions of certification. In addition, PEF has provided reasonable assurance that its proposed use of groundwater from the Floridan aquifer satisfies the substantive criteria of the SWFWMD set forth in Chapter 373, Florida Statutes, Rule Chapter 40D-2, and the SWFWMD's Basis of Review for water permit applications.

266. § 403.509(3)(c) – Consistency with Comprehensive Plans and LDRs. Pursuant to Section 403.509(3)(c), Florida Statutes, the location, construction, and operation of the LNP will be consistent with applicable provisions of the Levy County Comprehensive Plan and comply with the Levy County Land Development Code, if constructed and operated in accordance with the proposed conditions of certification. The LNP is also consistent with the State Comprehensive Plan and the Withlacoochee Regional Planning Council's Strategic Regional Policy Plan.

267. § 403.509(3)(d) – Meet the electrical energy needs of the state in an orderly, reliable, and timely fashion. The PSC found in its order determining need for the LNP that PEF has demonstrated a need for both Units 1 and 2 to reasonably meet customer reliability needs in the time period from 2016 to 2019, and beyond. The plant design and construction schedule demonstrate that, in accord with Section 403.509(3)(d), Florida

Statutes, the LNP will meet the electrical energy needs of the state in an orderly, reliable, and timely fashion.

268. § 403.509(3)(e) – Effect a reasonable balance between the need for the facility and environmental impacts. Pursuant to Section 403.509(3)(e), Florida Statutes, the LNP, if constructed and operated in compliance with the conditions of certification, will effect a reasonable balance between the need for the facility and the impacts resulting from construction and operation of the facility, including air and water quality, fish and wildlife, water resources, and other natural resources of the state (but not including radiological safety issues, which are preempted by federal regulation under the Supremacy Clause). The LNP and associated facilities are expected to produce minimal adverse environmental impacts, and will provide extensive benefits, including substantial economic benefits.

269. § 403.509(3)(f) – Minimize adverse effects on human health, the environment, and the ecology of the land and its wildlife and the ecology of state waters and their aquatic life. Pursuant to Section 403.509(3)(f), Florida Statutes, if constructed and operated in compliance with the conditions of certification, the LNP will minimize, through the use of reasonable and available methods, the adverse effects on human health, the environment, and the ecology of the land and its wildlife and the ecology of state waters and their aquatic life

(not including radiological issues, which are preempted by federal regulation under the Supremacy Clause.)

270. § 403.509(3)(g) – Serve and protect the broad interests of the public. Pursuant to Section 403.509(3)(g), Florida Statutes, if constructed and operated in compliance with the conditions of certification, the certification of the LNP will serve and protect the broad interests of the public.

271. Competent substantial evidence, based on the entirety of the record and the foregoing conclusions of law, demonstrates that the LNP (including the heavy haul road, access roads, and blowdown and intake pipelines) fully satisfies all of the criteria for certification under the PPSA (which does not include radiological safety issues, which are preempted by federal regulation under the Supremacy Clause).

II. Transmission Lines

272. § 403.509(3)(a) – Operational Safeguards. In accordance with Section 403.509(3)(a), Florida Statutes, PEF has provided reasonable assurances that the operational safeguards for the construction, operation, and maintenance of the transmission lines in the proposed corridors, in compliance with the conditions of certification, are technically sufficient for the public welfare and protection.

273. § 403.509(3)(b) - Nonprocedural Requirements. The parties stipulated that "the Conditions of Certification attached hereto are the applicable non-procedural requirements of the state, regional and local agencies and governments with regulatory jurisdiction over the transmission lines in the Proposed Corridors." PEF also presented competent substantial evidence at the certification hearing that the construction, operation, and maintenance of each of the proposed transmission lines in the proposed corridors will comply with the applicable non-procedural requirements of agencies in accord with Section 403.509(3)(b), Florida Statutes.

274. § 403.509(3)(c) - Consistency with Comprehensive Plans and LDRs. The parties stipulated that construction of transmission lines on established rights-of-way is excepted from the definition of "development" in Section 163.3164(6), Florida Statutes. To the extent that comprehensive plans or land development regulations of the local governments crossed by the transmission lines include provisions that are applicable to non-development activities, PEF's construction, operation, and maintenance of the transmission lines in the nine proposed corridors in accord with the conditions of certification will be consistent with applicable local government comprehensive plans and land development regulations.

275. § 403.509(3)(d) - Meet the electrical energy needs of the state in an orderly, reliable, and timely fashion. The construction, operation, and maintenance of the transmission lines in the nine proposed corridors, in compliance with conditions of certification, will help meet the electrical energy needs of the state in an orderly, reliable, and timely fashion, in accordance with Section 403.509(3)(d), Florida Statutes.

276. § 403.509(3)(e) - Effect a reasonable balance between the need and environmental impacts. Construction, operation, and maintenance of the transmission lines in the nine proposed corridors, in compliance with the conditions of certification, will effect a reasonable balance between the need for the facilities and the impacts upon air and water quality, fish and wildlife, water resources, and other natural resources of the state resulting from the construction and operation of the facilities, in accordance with Section 403.509(3)(e), Florida Statutes.

277. § 403.509(3)(f) - Minimize adverse effects on human health, the environment, and the ecology of the land and its wildlife and the ecology of state waters and their aquatic life. Construction, operation, and maintenance of the transmission lines in the nine proposed corridors, in compliance with the conditions of certification, will minimize, through the use of

reasonable and available methods, the adverse effects on human health, the environment, and the ecology of the land and its wildlife and the ecology of state waters and their aquatic life, in accordance with Section 403.509(3)(f), Florida Statutes.

278. § 403.509(3)(g)- Serve and protect the broad interests of the public. Construction, operation, and maintenance of the transmission lines in the nine proposed corridors, in compliance with the conditions of certification, will serve and protect the broad interest of the public, in accordance with Section 403.509(3)(g), Florida Statutes. Having met the criteria in subsections (3)(a) through (3)(f) of Section 403.509, Florida Statutes, PEF has demonstrated that the construction, operation, and maintenance of each of the transmission lines in the proposed corridors will serve and protect the broad interests of the public.

279. Competent substantial evidence, based on the entirety of the record and the foregoing conclusions of law, demonstrates that the transmission lines in the nine proposed corridors fully satisfy all of the criteria for certification under the PPSA.

RECOMMENDATION

Based upon the foregoing Findings of Fact and Conclusions of Law, it is

RECOMMENDED that the Siting Board enter a Final Order:

a. Approving PEF's Application for Certification to build, operate, and maintain a two-unit nuclear powered electrical generating facility in Levy County, Florida, including a heavy haul road, site access roads, and cooling water intake and discharge pipelines, subject to the conditions of certification set forth in DEP Exhibit 1, as amended; and

b. Approving PEF's Application for Certification to build, operate, and maintain each of the following electrical transmission line corridors as associated facilities, as described above and subject to the conditions of certification set forth in DEP Exhibit 1, as amended:

1. Citrus 1 and 2 Transmission Lines,
2. Crystal River Transmission Line,
3. Sumter Transmission Line,
4. Levy North Transmission Line,
5. Levy South Transmission Line,
6. Brookridge Transmission Line,
7. Brooksville West Transmission Line,
8. Crystal River East 1 and 2 Transmission Lines, and
9. Polk-Hillsborough-Pinellas Transmission Line.

DONE AND ENTERED this 15th day of May, 2009, in
Tallahassee, Leon County, Florida.



J. LAWRENCE JOHNSTON
Administrative Law Judge
Division of Administrative Hearings
The DeSoto Building
1230 Apalachee Parkway
Tallahassee, Florida 32399-3060
(850) 488-9675
Fax Filing (850) 921-6847
www.doah.state.fl.us

Filed with the Clerk of the
Division of Administrative Hearings
this 15th day of May, 2009.

ENDNOTES

1/ Unless otherwise noted, all statutes refer to the 2008 Florida Statutes and all rules refer to the version of the Florida Administrative Code Rule in effect at the time of the final hearing.

2/ Part III contains Findings of Fact related to public comment and public testimony related to the entire Project.

3/ WAR raised the location of the CWIS and alleged saltwater intrusion in the Lower Withlacoochee in this proceeding. Following WAR's voluntary withdrawal of its motion to intervene, these issues became moot for purposes of WAR's motion to intervene. Mr. Hilliard, the representative for WAR, nonetheless gave a sworn public statement and also submitted a written statement in his individual capacity. With his written statement, Mr. Hilliard submitted many of the documents WAR listed as possible hearing exhibits on the prehearing stipulation of the parties. These documents, as well as many other documents submitted by members of the public, constitute hearsay and cannot form the sole basis for a Finding of Fact. See § 120.57(1)(c), Fla. Stat.

COPIES FURNISHED:

Michael W. Sole, Secretary
Department of Environmental Protection
Douglas Building, Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32333-3000

Tom Beason, General Counsel
Department of Environmental Protection
Douglas Building, Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32333-3000

Lea Crandall, Agency Clerk
Department of Environmental Protection
Douglas Building, Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32333-3000

W. Douglas Beason, Esquire
Department of Environmental Protection
Douglas Building, Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32333-3000

Kealey A. West, Esquire
St. Johns River Water
Management District
4049 Reid Street
Palatka, Florida 32177-2529

Peter Aare, Esquire
Citrus County Attorney's Office
110 North Apopka Avenue
Inverness, Florida 33450-4231

Anne Bast Brown, Esquire
Levy County Attorney's Office
380 South Court Street
Bronson, Florida 32621-6517

Sanford Minkoff, Esquire
Lake County Attorney's Office
Post Office Box 7800
Tavares, Florida 32778-7800

Thomas J. Trask, Esquire
Frazer, Hubbard, Brandt & Trask, LLP
595 Main Street
Dunedin, Florida 34698-4988

Thomas L. Wright, Esquire
Office of Marion County Attorney
601 Southeast 25th Avenue
Ocala, Florida 34471-9109

Michael Craig, Esquire
Polk County Attorney's Office
Post Office Box 9005
Bartow, Florida 33830-9005

Janice McLean, Esquire
Office of the City Attorney
Old City Hall, 5th Floor
315 East Kennedy Boulevard
Tampa, Florida 33602-5211

Matthew G. Davis, Esquire
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

Emily J. Norton, Esquire
Florida Fish and Wildlife
Conservation Commission
Farris Bryant Building
620 South Meridian Street
Tallahassee, Florida 32399-1600

Douglas S. Roberts, Esquire
Virginia C. Dailey, Esquire
Hopping, Green & Sams
Post Office Box 6526
Tallahassee, Florida 32314-6526

Lawrence N. Curtin, Esquire
Holland & Knight, LLP
315 South Calhoun Street, Suite 600
Tallahassee, Florida 32301-1872

Kimberly Clark Menchion, Esquire
Department of Transportation
605 Suwannee Street, Mail Station 58
Tallahassee, Florida 32399-0450

Marti Moore, Esquire
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34604-6899

Richard Tschantz, Esquire
Environmental Protection Commission
of Hillsborough County
3629 Queen Palm Drive
Tampa, Florida 33619-1309

Jerri A. Blair, Esquire
City of Wildwood
131 West Main Street
Tavares, Florida 32778-3809

Jewel White-Cole, Esquire
Pinellas County Attorney
315 Court Street, 6th Floor
Clearwater, Florida 33756-5165

Kent L. Weissinger, Esquire
Hernando County Legal Department
20 North Main Street, Room 462
Brooksville, Florida 34601-2817

Derrill L. McAteer, Esquire
The Hogan Law Firm
Post Office Box 485
Brooksville, Florida 34605-0485

Harold A. Horne
Community Development Director
20750 River Drive
Dunnellon, Florida 34431-6744

E. Leon Jacobs, Jr., Esquire
Williams and Jacobs
1720 South Gadsden Street, Mail Stop 14
Suite 201
Tallahassee, Florida 32301-5506

George O'Bier
Town of Inglis
Post Office Box 429
Inglis, Florida 34449-0429

Marva M. Taylor, Esquire
Hillsborough County Attorney's Office
601 East Kennedy Boulevard, 27th Floor
Tampa, Florida 33602-4156

Robert W. Brinkman, Chair
Suwannee-St. Johns Group of the
Sierra Club
915 Northeast 20th Avenue
Gainesville, Florida 32609-3850

NOTICE OF RIGHT TO SUBMIT EXCEPTIONS

All parties have the right to submit written exceptions within 15 days from the date of this Recommended Order. Any exceptions to this Recommended Order should be filed with the agency that will issue the final order in this case.