# STATE OF FLORIDA

# DEPARTMENT

# OF

# ENVIRONMENTAL PROTECTION

# Electric Power Plant Site Certification
# Staff Analysis Report

**Progress Energy Florida**
**Crystal River Energy Complex**
**Unit CR3 Nuclear Uprate Project**

**PA 77-09A2**
**DEP OGC Case No. 07-1062**
**DOAH Case No. 07-002713**

February 1, 2008

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# 1.0 SUMMARY

## 1.1 Facilities Overview

### 1.1.1 Existing Facilities

On June 11, 2007 Progress Energy Florida, Inc. (PEF), submitted an application for certification of nuclear Unit 3 at the existing Crystal River Energy Complex (CREC) in Citrus County, Florida. The complex contains four coal-fired units (CR 1, 2, 4, and 5) and one nuclear unit (CR 3). The Power Plant Siting Act (PPSA) was promulgated in 1973. Units CR1 and CR2 were constructed in the 1960s and are not certified under the PPSA. Units CR4 and CR5 were certified under the PPSA in 1978. Construction of nuclear unit CR3 began just prior to the PPSA and it is not currently certified.

The CREC encompasses approximately 4,738 acres and is located in unincorporated Citrus County Florida (see Figure 1 below). Land adjacent to the site is predominantly undeveloped. There are active mines to the north and east. The site is bordered on the west by the Gulf of Mexico. The Central Barge Canal is approximately 3.2 miles to the north. The areas east of U.S. Highway 19 and north of the Central Florida Barge Canal contain relatively low-density residential housing.

**Figure 1. CREC General Property Location and Site Photo.**

Refer to Figure 2 for the facility boundaries of the CREC site relative to the Gulf of Mexico and U.S. Highway 19. The city of Crystal River lies approximately four miles to the southeast of CR3.

On November 21, 1978, the Florida Department of Environmental Regulation issued Site Certification PA77-09 to Progress Energy Florida (then Florida Power Corporation) for the addition of two coal fired power plants (CR4 and CR5) and associated facilities including a railroad spur, access road, sewage treatment plant, administration building, maintenance building, parking lots, freshwater well field, and well field pipeline at the existing CREC. Approximately 335 acres of predominantly

pine and palmetto scrub were impacted by the construction of these two units. The boundaries of the CR4 and CR5 certified area can be seen in Figure 3.

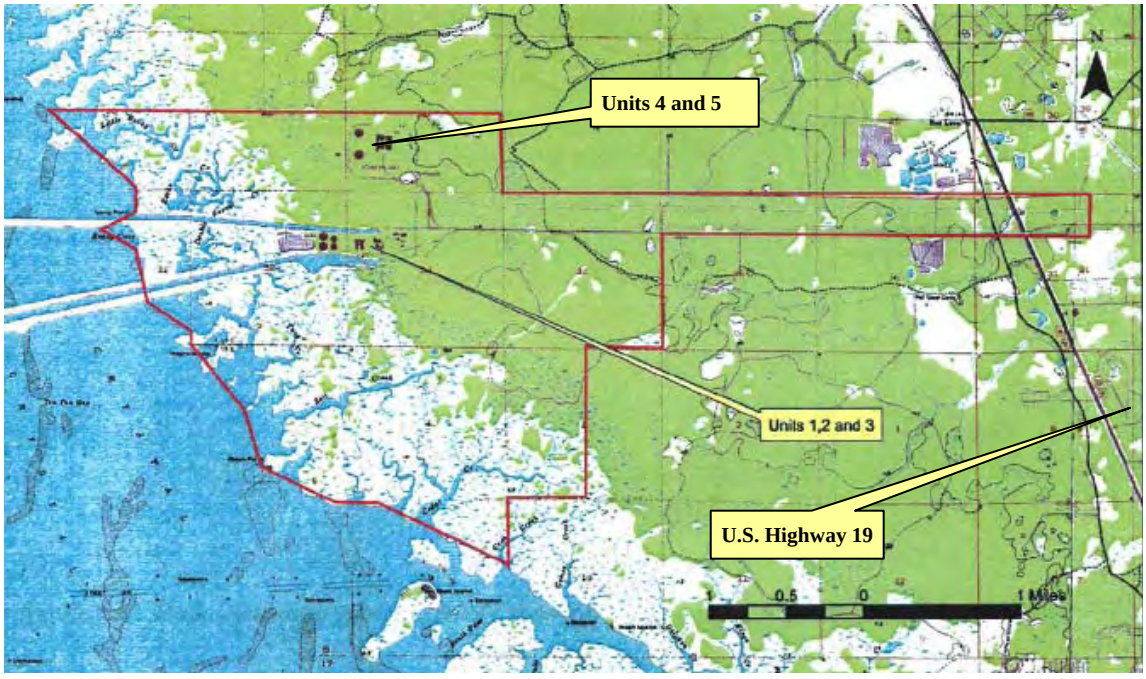


**Figure 2 CREC Property Boundary (SCA Figure 3.2.1-1, Golder Associates)**

PEF is proposing to increase the gross electrical output of the CR3 nuclear power plant by a total of 180 megawatts (MW), from 900 MW to 1,080 MW. This increase in output (uprate) of the existing unit necessitates certification of Unit 3 under the PPSA, as it exceeds the 75 MW of steam power threshold identified in 403.506(1).

CR3 is located near the center of the CREC just east of CR1 and CR2 and south of CR4 and CR5. The CR3 certified area comprises approximately 27 acres and includes the CR3 cooling water intake and discharge structures, personnel and office space, warehouses, a maintenance training facility, a temporary storage area, and a reactor head storage building. The boundaries of the CR3 certified area (to be incorporated into the total certified area) are to be inclusive of Unit 3 and all support facilities and structures. The boundaries suggested by PEF can be seen in Figure 4. PEF will also install additional mechanical draft helper cooling towers (South Cooling Towers) associated with this project along the discharge canal. Helper cooling towers are used to dissipate the heat generated from units CR1, CR2, and CR3. There are no proposed new off-site transmission lines or other linear facilities associated with this project.

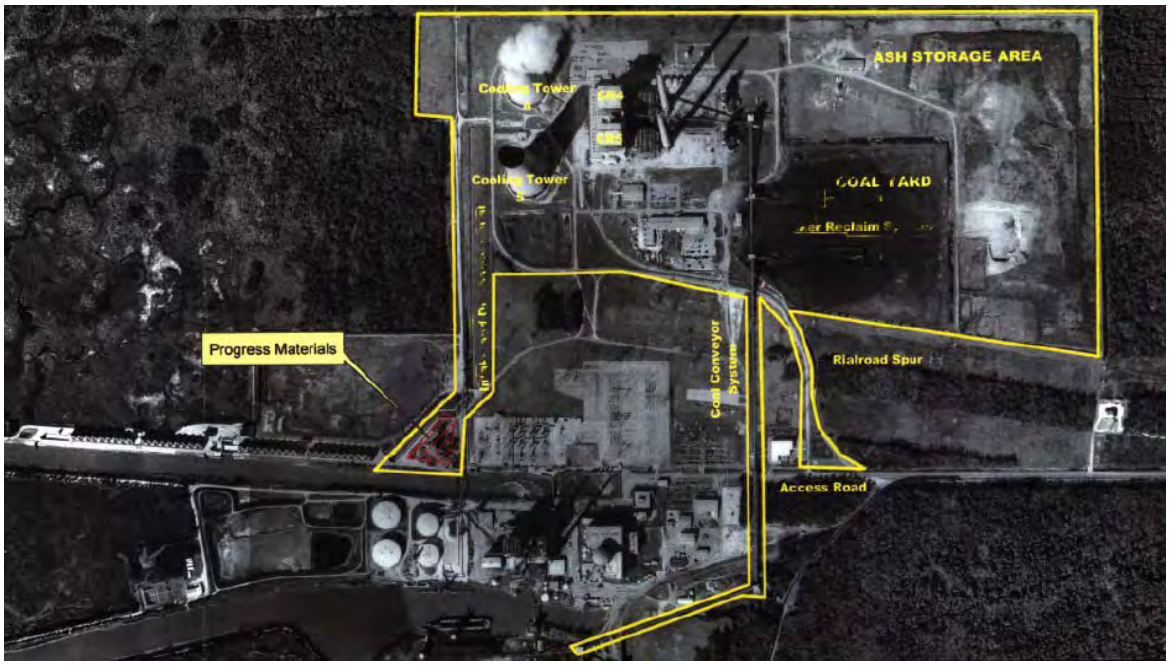


**Figure 3. CREC Unit CR4 and CR5 Certified Area.**


**Figure 4. CREC Unit CR3 Certified Area.**

### 1.1.2 Nuclear Uprating

An increase in the maximum allowable operating power level of a nuclear power plant is known as a power "uprate". To increase the electrical power output of a nuclear plant to the higher operating level, more steam must be produced. This is typically done by using more highly enriched uranium fuel and/or increasing the amount of fresh fuel that is used.

Depending on the extent of the uprate, various components of the unit may need to be replaced in order to support the increase in thermal energy and consequently higher amounts of steam. The United States Nuclear Regulatory Commission (NRC) has grouped uprates into three categories. Measurement Uncertainty Recapture Uprates (< 2% power increases) involve the installation of more accurate measurement devices that reduce the degree of uncertainty in the power level, allowing the plant to operate at a slightly higher level. Stretch Power Uprates (≤ 7% increases) are power increases that are within the design capacity of the plant and do not normally require major modifications to the plant equipment. Extended Power Uprates (up to 20% increases) require significant modifications to major plant equipment such as the high pressure turbines, condensate pumps and motors, main generators, and/or transformers.

Requests for uprates must be reviewed and approved by the NRC technical and legal staff, and involve amending the plant's NRC operating license. The NRC's mission is to regulate non-governmental use of byproduct, source, and special nuclear materials to ensure the protection of public health and safety, to promote the common defense and security, and to protect the environment. This specifically includes the regulation of commercial reactors that generate electrical power, and the transportation, storage, and disposal of nuclear materials and waste, and the decommissioning of nuclear facilities from service.

PEF received approval from the NRC for a "Measurement Uncertainty Recapture" uprate for CR3 on January 24, 2008. The CR3 "Extended Power Uprate" will occur in two phases. The first phase (2009) will occur during a planned refueling outage and will include retrofit of the low pressure turbines and electrical generator and replacement of the main steam reheaters. Replacement of the steam generator will also occur during this outage. The efficiency of power production will be increased resulting in a 40 MW output increase.

The second phase of the project will occur during another planned outage in 2011. PEF will retrofit the high-pressure turbine, turbine/generator coolers and replace the circulating water pumps, condensate and feedwater booster pumps, and motors. This second phase will result in an additional 140 MW of power output. The additional energy needed for the uprate will be generated by increasing the amount of fuel used, and by shifting the fuel batch mix to a higher percentage of the more-highly enriched fuel at the plant. Increases in efficiency of the replacement equipment will minimize the additional energy requirement.

As specified in the affirmative Determination of Need, the Florida Public Service Commission found the expansion of CR3 to be the most cost-effective option available to meet PEF's need for additional capacity.

### 1.2 Environmental and Social Impacts

The CREC is located in a rural unincorporated area of Citrus County. The City of Crystal River lies approximately four miles southeast of CR3 in Citrus County.

Yankeetown is approximately four and a half miles northwest, and Inglis is approximately five miles northeast of CR3, both in Levy County. The predominant existing land uses within the CR3 vicinity are undeveloped and industrial. The Citrus County Comprehensive Plan Future Land Use Element discourages new residential development in the vicinity of the CREC and no increase in residential density may be approved within five miles of the nuclear power plant facility. As stated earlier, the areas east of U.S. Highway 19 and north of the Central Florida Barge Canal contain relatively low-density residential housing.

Other potential areas of concern in close proximity to the site (within 5 miles) are Crystal River Reserve State Park, the Crystal River Archaeological State Park, the Feldburn Park Trailhead (Withlacoochee Bay Trail), the St. Martin's Marsh Aquatic Preserve, and two Outstanding Florida Waters (Crystal River and the Withlacoochee River System). The nearest Federal Class I Area to CR3 is the Chassahowitzka National Wildlife Refuge approximately 13 miles to the south. Federal Class I Areas are defined by the Clean Air Act and include certain national parks, national wilderness areas, and international parks that were in existence as of August 7, 1977. These areas represent natural conservation of historical landmarks in this country and are protected by more stringent air quality requirements than other regions. There will be no impacts of significance to the above described areas as a result of the CR3 uprate project.

### 1.2.1 Local Air Quality Impacts

The Department's Division of Air Resource Management regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as defined in Rule 62-212.400, F.A.C.

For new major facilities, or for modifications to existing facilities, each regulated air pollutant is reviewed for PSD applicability based on emissions thresholds known as Significant Emission Rates (SERs). The only pollutant projected to exceed its respective SER for this project is particulate matter (PM) due to the additional helper cooling towers. A federal air construction permit (PSD-FL-392) for the cooling towers was issued on October 12, 2007. Further discussion of the PSD review follows in a subsequent section.

### 1.2.2 Air Quality Impacts (Carbon Dioxide Emissions)

In light of heightened concerns over global warming and Florida's recent commitment to *The Climate Registry,* it is appropriate to consider carbon dioxide ($CO_2$) emissions from the proposed project. The following summary is intended to put into perspective the projected $CO_2$ emissions from CR3 with respect to global emissions and emissions from other types of electrical generating facilities.

Current and Predicted Levels of Carbon Dioxide Emissions

The primary source of $CO_2$ emissions is the combustion of fossil fuels such as coal, natural gas, and oil. Florida ranks fifth in the nation for energy-related $CO_2$

emissions (based on energy usage).[1] Florida contributed just over four percent to the nation's total emissions and less than one percent to the global total in 2003.

Of the 243.9 million metric tons of $CO_2$ produced in Florida during 2003, the electric power and transportation sectors were responsible for over 90% of the emissions, respectively contributing 125.1 (51%) and 98.2 (40%) million metric tons.[2] Refer to the table below for a comparison of 2003 $CO_2$ emissions.

**Table 1. $CO_2$ Emissions Comparison**

| Emission Origin | 2003 Total $CO_2$ Emissions (million metric tons) |
|---|---|
| Texas | 670.2 |
| California | 388.9 |
| Pennsylvania | 271.4 |
| Ohio | 265.5 |
| Florida | 243.9 |
| United States | 5,800.5 |
| World | 25,664.14 |

According to the latest figures by the Department of Energy, the US produces 22% of all $CO_2$ emitted into the atmosphere. That is more than China and India together (17% and 4.1% respectively); more than Russia (6%), Japan (4.7%), and Australia (1.4%); and more than the whole of Europe (17.2%).[3]

The Energy Information Administration predicts emissions of $CO_2$ will reach almost 8,000 million metric tons in the U.S. by the year 2030. [4]

Efficiency and Fuel Considerations

Emissions of $CO_2$ directly relate to the quantity of combusted fossil fuel. The more fuel consumed, the more carbon released into the atmosphere. As technologies improve, electric generating facilities of all types are constructed with greater and greater efficiencies. Higher efficiency units require less fuel for equal amounts of energy production. This translates to fewer overall carbon emissions from the more efficient units.

Carbon emissions are also dependent upon the types of fuels combusted. To produce the same amount of energy, more $CO_2$ is released when burning coal, than when burning fuel oil or natural gas. "Coal combustion emits almost twice as much $CO_2$ per unit of energy as does the combustion of natural gas, whereas the amount from crude oil combustion falls between coal and natural gas."[5] Carbon emission factors for different fuel types are shown in Figure 5 below as the amount of $CO_2$

emitted per heat energy unit (lb/MMBtu). There are no $CO_2$ emissions associated with the use of nuclear fuels.

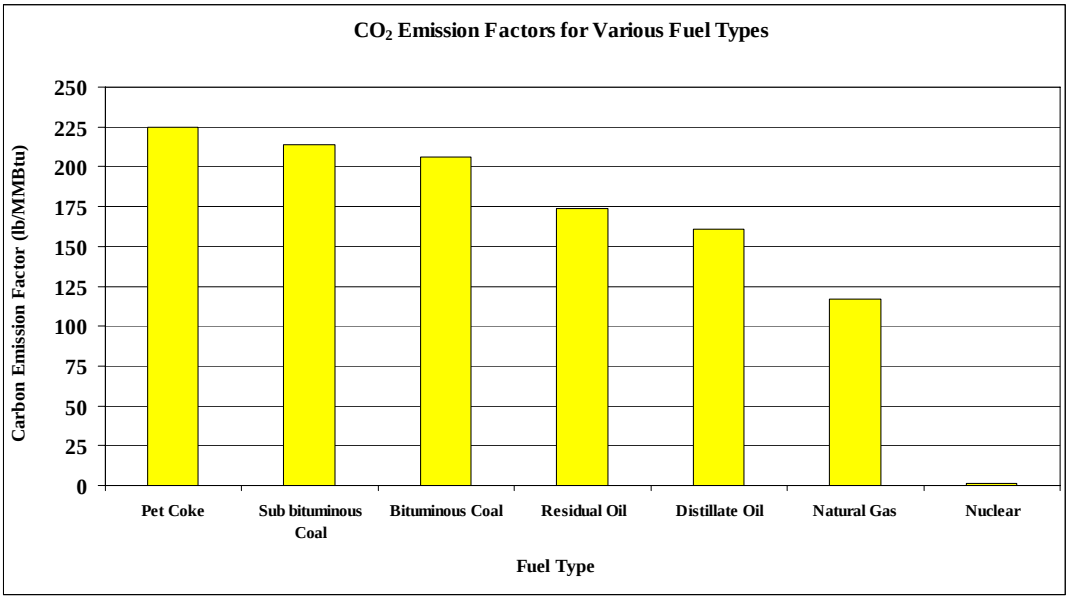


**Figure 5. Carbon Dioxide Emission Factors (Energy Information Administration)**

Effect of CR3 on Carbon Dioxide Emissions

Implementation of the CR3 uprate project will result in no increase in emissions of $CO_2$. For comparison, a new pulverized coal plant would emit approximately 1.4 million tons of $CO_2$ each year for the same output (180 MW). Comparable emissions from a combined cycle gas unit are approximately 0.5 million tons of $CO_2$ emissions per year. Figure 6 displays comparisons of carbon dioxide emissions from different facility types on a pound per megawatt-hour basis. (Estimates are based on summer capacities, maximum heat input rates for primary fuels, and a 90% capacity factor. Summer capacities and maximum heat input rates were taken from EIA-960 Database Annual Electric Generator Report and existing air permits.) Each data point represents a particular unit permitted in Florida (not all units are certified under the Power Plant Siting Act). Each unit is associated with the year in which it began operation. Those units that are either proposed or permitted but still under construction, are also indicated.

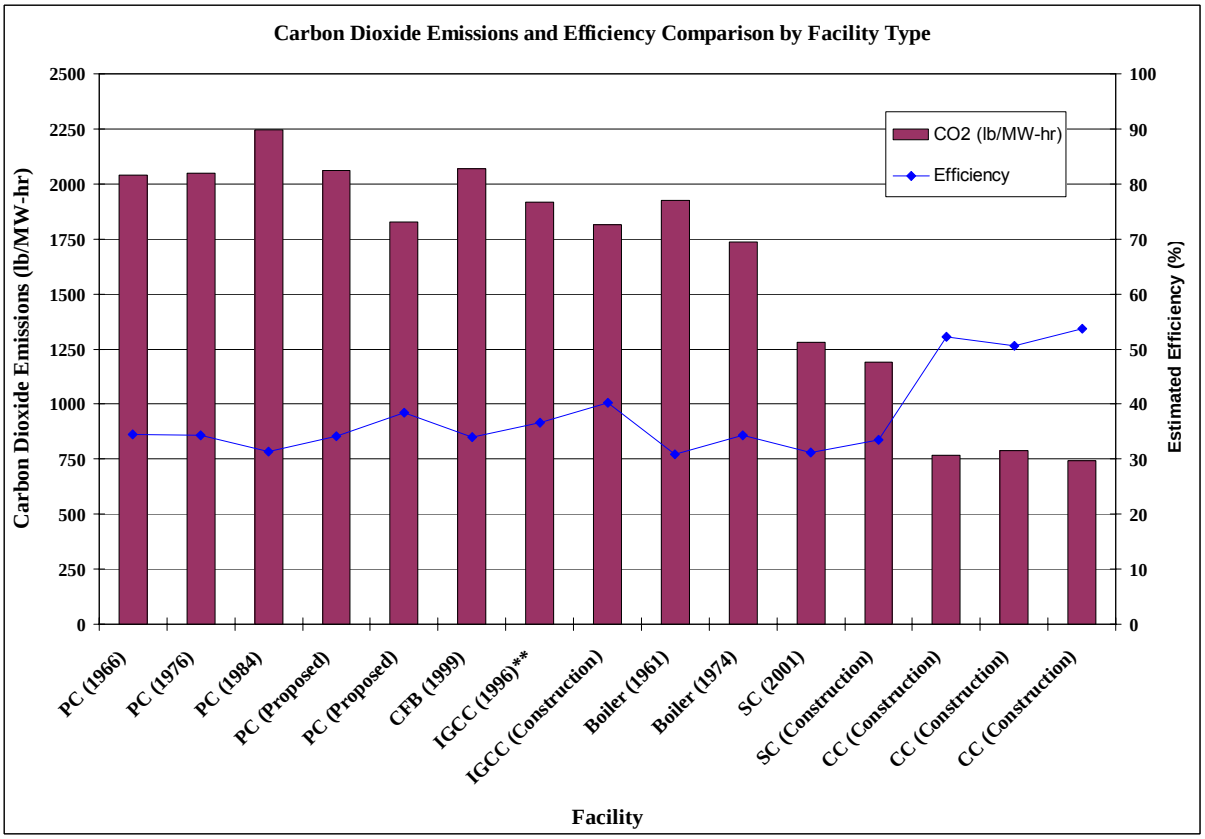


**Figure 6. Carbon Dioxide Emission Comparison by Facility Type**

### 1.2.3 Surface Water Quality Impacts

The once through cooling water for CR 1, CR2, and CR3 is withdrawn from an intake canal which connects to Crystal Bay and the Gulf of Mexico. The three units currently have a combined maximum intake flow of 1,898 million gallons per day (MGD) during the period of May 1 through October 31, and 1,613.2 MGD the remainder of the year (Federal National Pollutant Discharge Elimination System (NPDES) permit FL0000159).

Similarly, a common discharge canal for the three units extends into Crystal Bay. Helper cooling towers currently line the northern bank of the discharge canal and receive a portion of the circulating water flow from CR1, CR2, and CR3, and also cooling tower blowdown from CR4 and CR5. The helper cooling towers are operated to maintain a maximum discharge temperature at the point of discharge in the Gulf of Mexico.

Units CR4 and CR5 are closed-cycle units. These units withdraw water for cooling tower makeup from the discharge canal, and discharge cooling tower blowdown to the discharge canal.

An increase in circulating cooling water flow through CR3 will be necessary to dissipate the extra heat generated due to the uprating of the unit. PEF is proposing the addition of a South Cooling Tower and possible replacement of existing modular cooling towers with additional permanent helper cooling towers. By re-circulating some of the water flow from the new South Cooling Tower back into the intake canal PEF is proposing that there will be no net increase in flow to the intake canal from Crystal Bay. The additional helper cooling towers will ensure that there will be no net increase in the thermal discharge at the current NPDES point of discharge in the Bay. The final detailed design and operation of the cooling towers, and the request for increased circulating water flow for CR3 will be addressed as part of the federal NPDES permit renewal process in 2009.

CREC performs Total Dissolved Solids (TDS) monitoring of the cooling water and reports the data as part of its federal NPDES permit. There are no anticipated changes in the chemical concentrations in the intake and discharge canal as a result of the CR3 uprate project.

### 1.2.4 Groundwater Quality Impacts

CREC is authorized to withdraw brackish and fresh groundwater from the Upper Floridan Aquifer. Units CR1, CR2, and CR3 are served by three freshwater wells and two brackish wells. These wells provide raw water to the water treatment plant, which produces finished water used for potable and production-related purposes. PEF is not requesting an increase in groundwater withdrawals as a result of this project, therefore adverse impacts to offsite users are not anticipated

### 1.2.5 Consumptive Use

Groundwater withdrawals for Units 1, 2 and 3 are currently authorized under Water Use Permit (WUP) No. 2003672.004 renewed by the Southwest Florida Water Management District in November 2007. The WUP allows total withdrawals of 1,000,000 gallons per day (gpd) on an annual average basis and 1,500,000 gpd on a peak month basis. PEF proposes no new groundwater use to support the increased power generation for Unit 3.

### 1.2.6 Wastewater Disposal

Major process wastewater systems for CR3 are authorized by the CR1, CR2, and CR3 federal NPDES and Industrial Wastewater Permits. There are three outfalls to the intake canal and one to the discharge canal when water from the canals is used to wash debris from the screens protecting the intake pumps for the three CR units and the helper cooling towers. The main outfall associated with CR3 includes the once through cooling water, and discharges from internal processes (laundry, shower, and sump tanks, and secondary drain tanks), and the evaporator condensate storage tanks to the discharge canal.

A plant wastewater pond system receives waste stream from the overflow of the plant wastewater evaporation/percolation pond system. This system receives low volume wastes from CR1, CR2, and CR3. This area is occasionally used as a

dredge spoil dewatering area. The outfall from the pond system discharges into the discharge canal, however the discharge has not been used due to the capacity of the pond system.

Other than an increase in the once through cooling water through CR3 (as described earlier), process wastewaters are not anticipated to change due to the uprate project.

### 1.2.7 Solid and Hazardous Waste Disposal

Minimal quantities of wastes are stored and managed on site in a segregated area. The waste is characterized and the appropriate disposal method is determined in accordance with applicable state, federal and Nuclear Regulatory Commission (NRC) regulations.

Solid and hazardous wastes are anticipated to increase temporarily during the construction phases of the CR3 uprate project. These wastes will be stored and prepared for offsite disposal as appropriate.

The uprate project will result in a small increase in the spent nuclear fuel discharge rate. Fuel assemblies will continue to be stored in the onsite NRC approved spent fuel storage facilities.

### 1.2.8 Biological Impacts

The existing CR3 facilities are on primarily previously impacted areas which do not provide suitable natural areas for wildlife.

Construction of new facilities associated with the uprate project (including the additional South Cooling Tower, and laydown and parking areas for the steam generator replacement) could potentially impact wetlands on the site and this will be more specifically addressed once those plans are finalized.

Impingement and entrainment impacts due to an increase in the through-screen velocity are unknown. The flow into the intake canal is expected to be reduced slightly, possibly resulting in a reduction in the concentration of impingeable organisms. PEF proposes to continue to evaluate the entrainment and impingement impacts associated with CREC as well as any impacts associated with the CR3 uprate project. PEF intends to quantify aquatic impacts to offset impacts during the CREC 2009 federal NPDES renewal process.

### 1.2.9 Transportation Impacts

Employee and construction traffic access the CREC from U.S. Highway 19 located to the east of the site. No new access roads are proposed as a result of the CR3 uprate project. The level of service will temporarily decline during morning and afternoon peak hours during peak construction in late 2009. Traffic demand management strategies will be implemented to control the arrival/departure of site traffic.

### 1.2.10 Socioeconomic Impacts

The CR3 project will result in positive economic benefits for the county and surrounding areas through employment opportunities during construction, and increased public revenue from property tax increases.

## 2.0 SITE CERTIFICATION PROCESS

### 2.1 Determination of Need

Chapter 80-65, Laws of Florida (1980) requires a formal "Determination of Need" be made by the Florida Public Service Commission (PSC) prior to certification of an electric power generating facility subject to the "Power Plant Siting Act" (sections 403.501-519, Florida Statutes). The issues evaluated in the PSC's determination proceedings include conservation measures that might mitigate the need for additional power, load management, load demand growth estimates and other, potentially more cost effective, alternatives for producing needed power. This determination serves as the report required of the PSC as part of the power plant site certification proceedings. The Department of Environmental Protection (DEP) must balance the determination of need with the social and environmental impacts when preparing overall recommendations for final approval or disapproval of a Site Certification Application (SCA).

On February 8, 2007 the PSC issued their Final Order Granting Petitions for Determination of Need for the proposed expansion of Crystal River Unit 3 nuclear power plant. The complete report is attached as part of Appendix II-1.

### 2.2 Site Certification Application Review

The procedures and requirements for granting or denying a certification to construct and operate an electric power generating facility in the state of Florida are set forth in the "Florida Power Plant Siting Act", Sections 403.501-518, Florida Statutes, and the "Power Plant Siting Rule", Chapter 62-17, Florida Administrative Code. The statute establishes the certification agent to be the Siting Board which is composed of the Governor and Cabinet of Florida.

The DEP has been designated as the lead agency for the review and evaluation of SCAs and is charged with preparing a SCA impact analysis report and a recommendation to the Siting Board for granting or denying the requested certification. A recommendation to grant certification shall include a Conditions of Certification statement that specifies all requirements and restrictions of the Certification that will apply to the construction and operation of the proposed facility.

Specific concerns to be addressed in the review of a SCA shall include but not be limited to:

- Determination of Need for electric power;
- nearfield and farfield impacts on air quality;
- impacts on surface water or groundwater quality;
- impacts on terrestrial and aquatic ecosystems;

- impacts from solid waste or hazardous waste disposal;
- impacts from domestic or industrial wastewater disposal;
- impacts from stormwater management;
- impacts from site modification such as noise or meteorological changes;
- impacts on water supply;
- impacts on surrounding land uses;
- impacts on traffic;
- impacts on public lands and submerged lands;
- environmental and public health risk assessments;
- impacts on archaeological sites and historic preservation areas;
- accessibility to transmission corridors;
- proximity to transportation systems;
- fuel and fuel transportation and on-site storage requirements;
- cooling system requirements;
- soil and foundation conditions;
- construction and operational safeguards; and
- any site specific concerns identified in the review process.

Although the DEP is designated as the agency to coordinate the process, many of the concerns that are to be addressed in the SCA impact assessment are outside the purview of DEP. Consequently, the Power Plant Siting Act ("Siting Act") requires several other state agencies to participate in the review process. Each of these agencies is directed to review the SCA with regard to compliance with the statutory and administrative requirements of the reviewing agency. Each of these agencies is further directed to prepare a written report to the DEP explaining their findings and specifying any restrictions or requirements that should be included in the Conditions of Certification. These agencies are:

- Public Service Commission (PSC);
- Department of Community Affairs (DCA);
- Water Management District (WMD) with jurisdiction over the site;
- all local governments with jurisdiction over the site;
- Fish and Wildlife Conservation Commission (FWCC);
- Regional Planning Council with jurisdiction over the site;
- The Department of Transportation (DOT)
- And, any other agency if requested by DEP.

Other agencies or interest groups are encouraged to provide information, expertise and comment relating to the impact assessment. Comments, concerns and issues raised by these agencies, interest groups and the general public are integrated into the overall review and are addressed in the DEP report where appropriate. Written comments received prior to the publication date of the report are included in their entirety in Appendix II.

Throughout the course of the SCA review process there are several formal public and administrative hearings required by the Siting Act. Among these are:

- An Administrative Hearing on the certification of the proposed facility;
- And, a Certification Hearing before the Siting Board.

Subsequent to the issuance of a Certification, the licensed facility is required to participate in a Post Certification Review that determines compliance with the Conditions of Certification. Furthermore, the Certification may be modified by the Siting Board or the Department at the request of the facility. However, any modification request requires a formal application and is subject to the same scrutiny as the original SCA.

## 3.0 PROPOSED GENERATION AND TRANSMISSION FACILITIES

### 3.1 Generation Facility

#### 3.1.1 Site Location

The Crystal River Energy Complex is located in unincorporated northwest Citrus County just east of U.S. Highway 19 approximately four miles northwest of the city of Crystal River. The entire complex encompasses 4,738 acres. Certified units CR4 and CR5 and associated facilities occupy over 330 acres in the northeast corner of the complex. The CR3 certified area is south of CR4 and CR5 and occupies approximately 27 acres closer to the center of the CREC.

#### 3.1.2.1 Power Generation

According to the SCA, the CREC is currently the largest power-producing complex in the state of Florida with a total generating capacity of 3,140 MW. Units CR1 and CR2 are two coal-fired steam units which produce a nominal 379 MW and 486 MW respectively. Unit CR3 is a pressurized water reactor nuclear unit with a current gross electrical output of 900 MW. Units CR4 and CR5 are coal-fired steam units which produce 717 MW and 720 MW, respectively.

The CR3 uprate project will add another 180 MW to the units gross electrical output.

#### 3.1.2.2 Fuel and Fuel Handling

There will be no change in the nature of the nuclear fuel used directly for power production due to the CR3 uprate project. According to the SCA the additional power output will result in part from using more highly enriched fuel which will result in increased thermal MWs produced in the reactor core, however no increase in maximum fuel enrichment and no substantial change in fuel assembly mechanical design will be required. There will be increases in the size of the refueling batch necessary to supply the energy for operation at higher power levels.

#### 3.1.2.3 Cooling

Circulating water flow from CR1, CR2 and CR3, and cooling tower blowdown from CR4 and CR5 is received by a single discharge canal at the CREC. Helper cooling

towers currently line the north bank of the discharge canal. PEF has proposed the addition of an additional South Cooling Tower to offset the increase in rejected heat due to the CR3 uprate project. The South Cooling Tower may also replace an existing modular helper cooling tower. The South Cooling Tower is also designed to re-circulate some of the flow from the discharge canal back into the intake canal, thus avoiding any increase in flow into the intake canal from Crystal Bay.

#### 3.1.2.4 Air Pollution Control

The new South Cooling Towers will be a source of particulate matter (PM) emissions. Cooling water becomes entrained in the air stream and creates cooling tower drift. PM emissions from cooling towers are related to the total dissolved solids in the cooling water and the amount of drift through the tower. The South Cooling Tower will be designed with a 0.0005% drift rate to minimize PM emissions.

#### 3.1.2.5 Wastewater Treatment

All plant domestic/sanitary wastewater generated at CREC is collected and treated in an on-site domestic/sanitary waste treatment facility. PEF is authorized under FDEP permit FLA118753 to operate a 0.030 MGD Type III extended aeration domestic wastewater treatment plant. An associated land application system (separately permitted) receives effluent from the wastewater treatment plant.

A plant wastewater pond system receives waste stream from the overflow of the plant wastewater evaporation/percolation pond system. This system receives low volume wastes from CR1, CR2, and CR3. The area is occasionally used as a dredge spoil dewatering area.

There will be no changes to the wastewater treatment facilities.

#### 3.1.2.6 Solid and Hazardous Waste Handling

CREC generates wastes categorized as regulated waste, universal waste, hazardous waste, mixed waste, and radioactive waste. Whenever possible, wastes are recycled or minimized by chemical control management. Minimal quantities of wastes are stored and managed on site in a segregated area. The waste is characterized and the appropriate disposal method is determined in accordance with applicable state, federal and Nuclear Regulatory Commission (NRC) regulations.

Solid and hazardous wastes are anticipated to increase temporarily during the construction phases of the CR3 uprate project. These wastes will be stored and prepared for offsite disposal as appropriate.

The uprate project will result in a small increase in the spent nuclear fuel discharge rate. Fuel assemblies will continue to be stored in the onsite NRC approved spent fuel storage facilities.

### 3.2 Ancillary and Associated Facilities

The uprate project and certification of CR3 involves existing plant facilities including the CR3 cooling water intake and discharge structures, personnel and office space,

warehouses, a maintenance training facility, a temporary storage area, and a reactor head storage building. A new South Cooling Tower will be constructed along the discharge canal. There will be no new off-site electrical transmission facilities or other associated facilities required for the CR3 project.

### 3.3 Nuclear Regulatory Commission Licensing

The Nuclear Regulatory Commission (NRC) oversees the construction, safety and operation of all nuclear power plants in the United States. The CR3 nuclear unit is currently licensed under the NRC until 2016. PEF plans to submit a License Renewal Application early in 2009. It is anticipated that the license renewal will allow an additional 20 years of operation beyond the current 2016 expiration date.

PEF recently submitted a measure uncertainty recapture application to the NRC for a small increase in generating capacity of Unit CR3. On January 24, 2008, the NRC approved the request to increase the generating capacity of the Crystal River nuclear power plant by approximately 12 MWe. (see: http://www.nrc.gov/reading-rm/doc-collections/news/2008/08-011.html). Phase II of the CR3 project (additional 140 MWe) will require NRC approval for which PEF plans to submit an application for the power change in 2009. Approval for the increased output is expected by 2011.

### 3.4 Emergency Management Plans

Chapter 252 of the Florida Statutes establishes the means by which certain radiological emergency response plans and preparedness requirements of the United States Nuclear Regulatory Commission and the Federal Emergency Management Agency can be developed and tested by the state, the appropriate counties, and each operator licensed by the United States Nuclear Regulatory Commission to operate a commercial nuclear electric generating facility. Roles and responsibilities of those organizations that would respond to a nuclear power plant emergency are outlined in Annex A, State of Florida Radiological Emergency Management Plan included as part of the State of Florida's Comprehensive Emergency Management Plan (CEMP). The CR3 uprate project does not trigger a revision to this plan. Visit the following links to view a copy of Annex A, State of Florida Radiological Emergency Management Plan, PEF's Crystal River Plant Safety Information, and the Florida Division of Emergency Management's Radiological Emergency Preparedness page.

http://www.floridadisaster.org/documents/CEMP/REP2004/Annex%20A/AnnexAtbc.htm).
http://www.levydisaster.com/files/FLA02061CRNEmerBrowe.pdf,
http://www.floridadisaster.org/bpr/EMTOOLS/Nuclear/rep.htm ,

## 4.0 COMMENTS

### 4.1 Agency Comments

The following agencies submitted reports discussing the CR3 uprate project:

### 4.1.1 Public Service Commission

Pursuant to Section 403.519, the Public Service Commission (PSC) issued Order No. PSC-07-0119-FOF-EI, on February 8, 2007, determining need for the project. In part, the Order stated that:

"CR3 will displace higher cost fossil fuel and purchased power generation with low cost nuclear generation, resulting in substantial fuel savings that provide a net benefit to customers. Although it is not needed for reliability it does meet the need for fuel diversity and supply reliability. The proposed CR3 uprate will displace fossil fuel and purchased power generation with nuclear generation, resulting in increased fuel diversity and supply reliability. PEF's customers, and the State, thus, will benefit from increased price stability, enhanced fuel diversity, and decreased reliance on foreign fuel sources resulting from the addition of nuclear capacity to PEF's system. There are no cost-effective demand-side management measures available to offset the need. Because the CR3 uprate displaces higher cost generation on PEF's system, yielding fuel savings to the net benefit of PEF's customer, there can be no less costly supply-side generation alternative available."

The PSC's report is attached and incorporated as Appendix II-1.

### 4.1.2 Department of Community Affairs

At the time of this report the DEP had not received a report from the Department of Community Affairs.

### 4.1.3 Southwest Florida Water Management District

On January 22, 2008 the Department received a final agency report from the Southwest Florida Water Management District (SWFWMD) for the CR3 uprate project (including proposed conditions and attached as Appendix II-2). The SWFWMD recommended approval of the project subject to their proposed conditions. These conditions have been included in the attached proposed Conditions of Certification. The following excerpts are taken from the SWFWMD report:

"Groundwater withdrawals for Units 1, 2 and 3 are currently authorized under Water Use Permit (WUP) No. 2003672.004, which was renewed by the District in November 2007. The WUP allows total withdrawals of 1,000,000 gallons per day (gpd) on an annual average basis and 1,500,000 gpd on a peak month basis. No new groundwater quantity is proposed to support the increased power generation for Unit 3. In light of the commingled water use for Units 1, 2 and 3, PEF has requested that it not be required to segregate water use for Unit 3 and that Unit 3's water use continue to be regulated under WUP No. 2003672.004."

"The proposed uprating activities will include preparation of construction laydown and additional vehicle parking areas as part of the steam generator replacement component of the project. These activities may impact some of the onsite wetland systems. PEF proposes to address any substantive Environmental Resource Permit

(ERP) requirements through separate ERPs for areas of the non-certified site, or on a post-certification basis, following approval of the Unit 3 site certification. Once Unit 3 is certified, more detailed design work will be prepared. PEF proposes that appropriate conditions of certification provide for post-certification review and approval by DEP of any ERP-related impacts as necessary."

"With the proposed conditions attached hereto and incorporated herein as Exhibit "A," the Conditions for Issuance of Chapter 40D-2, F.A.C. are met. Staff recommends approval of the certification application and forwarding of this Agency Report to the DEP, subject to the proposed conditions of certification."

### 4.1.4 Citrus County

Citrus County made a determination that the CR3 project is consistent and in compliance with the land use plans and zoning ordinances of Citrus County. A copy of the determination filed with the Division of Administrative Hearings is attached as Appendix II-3.

### 4.1.5 Florida Fish and Wildlife Conservation Commission

The Florida Fish and Wildlife Conservation Commission (FWC) submitted their agency report on February 1, 2008. The primary concern of the FWC is the potential increased impingement and entrainment of estuarine organisms due to the increased flow velocities at the intake screens. FWC will review the PEF federal NPDES renewal application and accompanying studies at the time of submittal.

The FWC report is included in Appendix II-4.

### 4.1.6 Withlacoochee Regional Planning Council

On December 5, 2007 The Withlacoochee Regional Planning Council (WRPC) submitted their final agency report. The WRPC staff reviewed SCA topics including air quality, water quality and features, energy, transportation and economic development to determine overall consistency of the proposed project with the region's Strategic Regional Policy Plan. Below is the final summary from the WRPC report. The full report is attached as Appendix II-5.

"WRPC staff finds the completed site certification application to be consistent with the requirements of the SRPP, although all reasonable measures should be taken during and after project development to safe-guard regionally significant resources. The SRPP does no require the applicant to seek any variations, exceptions, forms of relief or to satisfy other requirements at the regional planning council level. Furthermore, the proposed project represents an intensification of activity already occurring onsite. It is WRPC staff's recommendation that the proposed uprate project for Unit 3 of the Crystal River Energy Complex be approved."

### 4.1.7 Department of Transportation

On December 20, 2007, the Florida Department of Transportation (FDOT) submitted their agency report (attached in Appendix II-6). The FDOT recommended approval

contingent upon PEF's compliance with recommended conditions. These conditions are included in the proposed Conditions of Certification.

### 4.2 Other Comments

The Department received no other comments from other agencies or persons pursuant to 403.507(5)(c).

## 5.0 GENERAL SITE SUITABILITY CONCERNS

### 5.1 Area Land Use

The CREC encompasses 4,738 acres. Approximately 335 acres were impacted by the construction of certified units CR4 and CR5 and the proposed CR3 certified area comprises approximately 27 acres. It is estimated that a total of 638 acres of the site (including CR1 and CR2) have been developed. Much of the remainder of the complex has been left in its preexisting condition and provides buffer between the main generating units and the surrounding area.

Land use and vegetative communities surrounding the project include mixed wetland hardwoods, open land, electrical power facilities, saltwater marsh, canals, and transmission lines. The CR3 uprate project involves primarily portions of the CREC site that have already been developed for electrical power facilities. Exceptions include the construction of the South Cooling Towers located along the discharge canal, and the construction laydown and parking areas of approximately 17 acres. Open land and areas of freshwater marsh and mixed wetland hardwoods will be utilized for these areas.

### 5.2 Impact On Land Use And Surrounding Populations

Much of the land surrounding the CREC is undeveloped land, with areas of low-density residential housing east of U.S. Highway 19 and north of the Central Florida Barge Canal. Citrus County has determined that the project is consistent with, and in compliance with the County's land use plans and zoning ordinances. According to PEF, because of local employment, traffic patterns and daily commuting, the demographic impact of the CR3 project is expected to be minimal.

In preparation for the CR3 project, a comprehensive noise analysis was performed. Ambient noise monitoring was performed at seven locations on or near the Project Site to assess the existing ambient noise levels.

Noise predictions for the CR3 uprate project were developed using the CADNA A computer model and noise impacts were evaluated using the sound power levels for the various operating equipment associated with the project. CADNA A is an environmental noise propagation computer program developed to assist with noise propagation calculations for major noise sources and projects.

The Citrus County noise ordinance calls for daytime levels less than than 60 dBA and nighttime levels less than 55 dBA in residential areas. With the exception of one site, the predicted noise levels of the baseline sites would be at or lower than Citrus

County noise standards for residential land use of 60 dBA during the daytime and 55 dBA during the nighttime. The predicted noise levels are not expected to adversely impact the sensitive receptors identified in the vicinity of the project area. Intermittent noise sources during routine startup, testing, and maintenance, and emergency conditions will include steam venting. Such activities would not normally occur simultaneously and would last for a short duration. The noise impacts of these conditions would not be expected to cause a nuisance.

A similar noise analysis was conducted for the impacts of construction noise impacts using the same CADNA A computer program. The model was performed to predict the maximum noise levels produced by a combination of likely noise sources with and without background noise levels. All of the equipment was assumed to be operating simultaneously at peak power for a conservative impact assessment. Predicted noise levels are not expected to adversely impact the sensitive receptors in the vicinity of the project area.

## 6.0 FACILITY SPECIFIC CONCERNS

### 6.1 Air Quality Significance

On June 11, 2007, the Department' Division of Air Resource Management received a federal air construction Prevention of Significant Deterioration (PSD) permit application from Progress Energy for the Crystal River Power Plant for the construction of additional mechanical draft cooling towers referred to as south cooling towers (SCT). In accordance with 403.5055, the Power Plant Siting Act does not supersede federal permitting processes such as the federal PSD permit. However, the PPSA does require (see 403.502, F.S.) amongst other things that operation safeguards are technically sufficient for the welfare and protection of citizens, and that a reasonable balance be made between the need for the facility and the environmental impact resulting from construction and operation of the facility, including air and water quality, fish and wildlife, and the water resources and other natural resources of the state.

**Preliminary Determination**

The Department made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis was required because the project does not result in a significant increase in the PM10 emissions. A final federal PSD permit for the addition of the South Cooling Towers was issued on October 12, 2007.

### 6.2 Water Quality Related Impacts

Crystal Bay is the only designated water body (designated a Class III Coastal Water) affected by CREC plant operations. PEF describes water quality near the site as "generally good". As part of the federal NPDES permit, CREC monitors and reports

levels of total dissolved solids in the intake canal. Because of the center's large flow rate, and the much smaller flow rates of added waste streams, the chemical concentrations in the discharge canal are not significantly different than those in the intake canal. There are no anticipated changes in the chemical concentrations in the intake and discharge canal due to the CR3 uprate project.

### 6.2.1 Surface Water Impacts

***Impacts Due to Heat Rejection***

The CR3 uprate project will result in an increase in rejected heat from the unit. Units CR1, CR2, and CR3 are currently limited to a collective maximum heat rejection rate at the point of discharge (POD) from the discharge canal. PEF proposes that addition of the new SCT will ensure that the total heat rejection rate from the three units will not exceed the maximum rate of 10.91 billion Btu per hour. PEF will submit a final design of the SCT with the federal NPDES permit renewal application scheduled for 2009.

***Impacts of Increased Through-Screen Velocity on Impingement/Entrainment***

PEF proposes to offset the additional cooling water withdrawn from the intake canal for CR3 by re-circulating a portion of the water flow through the SCT from the discharge canal back into the intake canal. Although the total quantity of water withdrawn from the Gulf of Mexico through the intake canal will not increase, there may be a significant increase in through-screen velocity (as much as 22 percent) at the intake screen.

Actual impacts due to through-screen velocities are not known. PEF has been in the process of quantifying aquatic impingement and entrainment impacts at the CREC in order to develop a Comprehensive Demonstration Study (CDS) for submittal to the DEP in compliance with the federal Clean Water Act (CWA) 316(b) rule. On July 9, 2007, the United States Environmental Protection Agency suspended parts of the rule affected by a federal appellate court decision in response to a rule challenge. In November 2007, DEP amended Rule 62-620.100(3), Florida Administrative Code (F.A.C.), allowing for the implementation of Section 316(b) of the CWA on a Best Professional Judgment (BPJ) basis. Determination of Best Technology Available (BTA) compliance with Section 316(b) of the CWA for existing power plants shall continue to be based on BPJ under authority of Rules 62-620.100, F.A.C. The Department has revised the requirement for submittal of biological and engineering reports to evaluate compliance with BTA on a BPJ basis at the time of federal NPDES permit renewal. The process of permit renewal will begin in 2009 for PEF.

***Potential Wetland Impacts - Construction Laydown and Parking Areas***

PEF describes the replacement of the CR3 steam generator as the Steam Generator Replacement Project (SGRP). According to statements made by PEF, the steam-generator will be replaced in 2009 as part of a routine maintenance program, regardless of whether the CR3 uprate project is approved or not. Certain undisturbed areas on the site will be needed for construction lay-down and parking areas. These same areas will be utilized to support the CR3 uprate project. Based on the conceptual design submitted by PEF, the construction laydown and parking areas will potentially have both short term and long-term impacts on various wetland systems.

The Department does not agree with PEF's separation of the two projects (uprate project versus steam generator replacement), but has chosen to take more of a "partnering" rather than an adversarial role. Accordingly, as currently planned, once detailed design work for the impacted areas has been completed, PEF will submit all information needed to support the issuance of an Environmental Resource Permit to the DEP district office. Additionally, prior to construction, PEF will prepare a Storm Water Pollution Prevention Plan and submit the Notice of Intent to use the FDEP Generic Permit for Storm Water Discharge for Large and Small Construction Activities as applicable.

***Potential Wetland Impacts – Addition of SCT***

Preliminary design of the SCT indicates impacts to a saltwater marsh area. The exact location and design of the cooling tower is not known. Final design and function of the SCT will be addressed during the federal NPDES permit renewal process. Prior to construction of the SCT, PEF will be required to submit all information needed to support the issuance of an Environmental Resource Permit to the DEP district office. Additionally, prior to construction, PEF will prepare a Storm Water Pollution Prevention Plan and submit the Notice of Intent to use the FDEP Generic Permit for Storm Water Discharge for Large and Small Construction Activities as applicable.

### 6.2.2 Ground Water Impacts

Groundwater withdrawals for Units 1, 2 and 3 are currently authorized under Water Use Permit (WUP) No. 2003672.004 renewed by the District in November 2007. PEF proposes no new groundwater use to support the increased power generation for Unit 3. In light of the commingled water use for Units 1, 2 and 3, PEF has requested that it not be required to segregate water use for Unit 3 and that Unit 3's water use continue to be regulated through WUP No. 2003672.004 and any subsequent permit renewals/modifications.

Pollution control measures will be in place for laydown areas and roads as necessary to control dust and runoff.

## 6.3 Impacts On Threatened Or Endangered Species

Wildlife habitat in the project area has been significantly altered by the construction and operation of the existing power facility, therefore terrestrial ecological impacts will be minimal. Gopher tortoises are known to occur within the CREC property away from the project area in upland adjacent to the existing rail line.

There is one bald eagle nest on the CREC and another just north of the property. The on-site nest is in the southeast corner of the property approximately 1.9 miles from CR3. Both nests were active every year from 2001-2005. The wood stork, snowy egret, tricolored heron, little blue heron, and white ibis are other species listed by the U.S. Fish and Wildlife Service and/or the Florida Fish and Wildlife Conservation Commission that either have been observed on the CREC property or are likely to forage within the project area.

Four sea turtle species have been observed at or near CR3 in the CREC intake canal. In 2002 the national Marine Fisheries Service concluded in a Biological Opinion that continued operation of CR3 would not jeopardize any of the listed sea turtle species populations. PEF continues to implement a Sea Turtle Rescue and Handling Guidance for observation, rescue, handling, notifications, and reporting requirements for sea turtles. The Florida manatee is also observed in the area of the CREC intake and discharge canals.

According to PEF, no adverse impacts to threatened or endangered species are anticipated as a direct result of the CR3 uprate project. No objections to the project were received from the Florida Fish and Wildlife Conservation Commission.

## 6.4 Archaeological and Historic Sites

According to a background check conducted in December 2006 by New South Associates on behalf of Tetra Tech NUS, there are 195 archaeological sites, nine structures, and three cemeteries within a six-mile radius of CREC. No known historical sites are located within the CR3 project area. According to the application, no known cultural resources, either on- or offsite, will be impacted by the CR3 uprate project.

## 6.5 Impacts on Public Lands

This project occurs on an existing, approved power plant site, and will cause no hardship that can sometimes be associated with the conversion of land use. The improvements to the power plant will not displace any human populations. The development of the project at this site will not displace or significantly impact any recreational or other public lands.

## 6.6 Construction and Operational Safeguards

As outlined in the application, construction procedures to minimize fugitive dust emissions will be implemented. Due to the existing nature of the CR3 unit, much of the construction during the uprate project will not have significant impacts on the surrounding area. Post certification approvals for the SCT and construction

laydown and parking areas will include any appropriate run-off control facilities and practices to avoid contamination of state waters. Compliance with OSHA standards and the provisions of Section 440.56, F.S. should adequately protect construction workers and operating personnel.

The conceptual design and operating procedures appears sufficient to protect the public and to protect the environment from significant harm.

## 7.0 COMPLIANCE AND VARIANCES

As currently designed, the operation of the Crystal River facility, including Unit CR3, will not contribute to a violation of air or water quality standards. No variances to non-procedural regulations of reviewing agencies would be necessary to implement the construction and operation of CR3 and its related facilities.

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

### 8.1 Conclusions

#### 8.1.1 Construction Impacts

Construction of the proposed facilities necessary to implement Unit CR3 would have the following impacts:

1. The proposed CR3 area comprises approximately 27 acres of developed land and includes the reactor building, turbine building, access/security building, auxiliary building, maintenance training facility, reactor head storage building and miscellaneous warehouses and other buildings. Approximately 17 acres will be developed to support construction activities. The SCT will also require some amount of additional acreage.
2. The CR3 project will provide significant economic benefits for Citrus County. The project will provide up to 650 construction jobs during peak construction-related activities and a total construction payroll of an estimated $20 million over the four-year construction period. Following the CR3 uprate project, property taxes are estimated by PEF to increase to approximately $10 to 12 million.
3. Traffic control practices will be implemented at the main plant entrance on US Highway 19 to reduce the impacts of construction traffic.

#### 8.1.2 Operational Impacts

1. Completion of the CR3 uprate project will Increase the use of the facility.
2. No violations of ambient air quality standards or violations of federal PSD increments are predicted for the expansion of the site to include the SCT.
3. No new water discharges will result from the project.

### 8.1.3 Agency Conclusions

The following table includes the recommendations of approval or denial from each of the affected agencies.

**Table 2. Agency Recommendations**

| AGENCY | APPROVAL | DENIAL |
|---|---|---|
| PSC | √ | |
| DCA | ---- | ---- |
| SWFWMD | √ | |
| Citrus County | √ | |
| FWCC | √ | |
| WRPC | √ | |
| DOT | √ | |
| DEP | √ | |

1. The Public Service Commission determined there is a specific need for the project
2. The Southwest Florida Water Management District recommends approval of the project subject to compliance with the District's recommended conditions of certification.
3. Citrus County determined that the CR3 project is consistent with and in compliance with the county's land use plans and zoning ordinances.
4. The Fish and Wildlife Conservation Commission approved the CR3 project.
5. The Withlacoochee Regional Planning Council (WRPC) recommends approval of the project.
6. The DOT recommended certification based on the contention that the applicant would meet all of their recommended conditions of certification.
7. Based on the project's design the Department of Environmental Protection has reasonable assurance that CREC Unit CR3 would be able to comply with applicable agency standards and criteria as long as compliance with the proposed conditions of certification is achieved.

## 8.2 Recommendation

The Department's recommendation is, at least in part, based upon recommendations included in the agencies' reports required by 403.507(2)(a), F.S. Neither the failure of any agency to submit a report nor the inadequacy of a report, are grounds to deny or condition certification. (403.507(6), F.S.)

If Progress Energy Florida, Inc. as the applicant agrees to abide by the conditions of certification, attached and incorporated herein, the Department would recommend certification of the Crystal River Energy Complex Unit CR3.

**DONE AND ISSUED** this 1 day of February 2008, at Tallahassee.

Michael P. Halpin, P.E.
Siting Program Manager

## Appendix I: Draft Conditions of Certification

**Appendix II–1: Public Service Commission Determination of Need**

BEFORE THE PUBLIC SERVICE COMMISSION

| | |
|---|---|
| In re: Petition for determination of need for expansion of Crystal River 3 nuclear power plant, for exemption from Bid Rule 25-22.082, F.A.C., and for cost recovery through fuel clause, by Progress Energy Florida, Inc. | DOCKET NO. 060642-EI<br>ORDER NO. PSC-07-0119-FOF-EI<br>ISSUED: February 8, 2007 |

The following Commissioners participated in the disposition of this matter:

LISA POLAK EDGAR, Chairman
MATTHEW M. CARTER II
KATRINA J. TEW

APPEARANCES:

R. ALEXANDER GLENN, ESQUIRE, Progress Energy Service Company, LLC, 100 Central Avenue, Suite 1D, St. Petersburg, Florida 33701, and JAMES MICHAEL WALLS, and DIANNE M. TRIPLETT, ESQUIRES, Carlton Fields, P. A., Post Office Box 3239, Tampa, Florida 33601-3239
On behalf of Progress Energy Florida, Inc. (PEF).

JOHN W. MCWHIRTER, JR., ESQUIRE, McWhirter, Reeves & Davidson, P. A., 400 North Tampa Street, Suite 2450, Tampa, Florida 33601-3350
On behalf on the Florida Industrial Power Users Group (FIPUG).

ROBERT SCHEFFEL WRIGHT and JOHN R. LAVIA, III, ESQUIRES, Young van Assenderp, P. A., 225 South Adams Street, Suite 200, Tallahassee, Florida 32301
On behalf of the Florida Retail Federation (FRF).

PATRICIA A. CHRISTENSEN, and JOSEPH A. MCGLOTHLIN, ESQUIRES, Office of Public Counsel, c/o The Florida Legislature, 111 West Madison Street, Room 812, Tallahassee, Florida 32399-1400
On behalf of the Citizens of the State of Florida (OPC).

LISA C. BENNETT, and LORENA A. HOLLEY, ESQUIRES, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
On behalf of the Florida Public Service Commission (Staff).

FINAL ORDER GRANTING PETITION FOR DETERMINATION OF NEED
FOR PROPOSED EXPANSION OF
CRYSTAL RIVER UNIT 3 NUCLEAR POWER PLANT

BY THE COMMISSION PANEL:

Background

On September 22, 2006, Progress Energy Florida, Inc. (PEF) filed a Petition (petition) for Determination of Need for Expansion of its Crystal River 3 Nuclear Power Plant (CR3) located in Citrus County, Florida. The proposed expansion is an uprate that when completed will increase the power output at CR3 by approximately 180 megawatts ("MWs"). The proposed uprate or expansion will be completed in two phases. The first phase will be accomplished during the planned 2009 refueling outage and the second phase will be completed during the 2011 planned refueling outage. Phase one will be completed during a scheduled steam generator replacement and will include modifications to the turbine line components to take advantage of greater steam efficiencies, with an expected additional 40 MW of power following work completed in phase one. Phase two consists of changes that will allow for use of more highly enriched uranium in the reactor core and will result in an anticipated additional 140 MW of power.

Included in PEF's petition was a request for exemption from Rule 25-22.082, Florida Administrative Code, and a request that PEF be permitted to recover the costs of the expansion through the fuel clause. On December 22, 2006, by Order No. PSC-06-1059-PCO-EI, the Prehearing Officer bifurcated the cost recovery issue from the need determination. A formal administrative hearing was held on January 18, 2007 to hear the issues related to the need determination and the requested exemption from Rule 25-22.082, Florida Administrative Code. Intervention was granted to the Office of Public Counsel (OPC), the Florida Industrial Power Users Group (FIPUG), the Florida Retail Federation (FRF), and AARP. AARP has subsequently been excused from this proceeding.

We approve the settlement between the parties and grant PEF's petition for determination of need. This Order reflects that decision and serves as our report under the Power Plant Siting Act, as required by section 403.507(4), Florida Statutes.

Section 403.519(3), Florida Statutes, sets forth those matters that we must consider in a proceeding to determine the need for a proposed expansion of an existing nuclear power plant:

> In making its determination, the commission shall take into account the need for electric system reliability and integrity, the need for adequate electricity at a reasonable cost, the need for fuel diversity and supply reliability, and whether the proposed plant is the most cost-effective alternative available. The commission shall also expressly consider the conservation measures taken by or reasonably available to the applicant or its members which might mitigate the need for the proposed plant and other matters within its jurisdiction which it deems relevant.

*Exemption from Requirements of Rule 25-22.082, Florida Administrative Code*

We find that the CR3 Uprate satisfies all criteria for exemption from the Bid Rule, pursuant to Rule 25-22.082(18), Florida Administrative Code (F.A.C.). PEF has shown that the CR3 Uprate will likely result in a lower cost supply of electricity to its general body of ratepayers and will also serve the public welfare. Because the CR3 Uprate provides customers additional generation at a net savings, not a net cost, from a more environmentally beneficial source that enhances fuel diversity, no request for proposal is needed. No generation alternative can supply 180 MW of additional power at a net savings to customers comparable to the economic, environmental, and fuel diversity benefits provided by the CR3 Uprate. Other available supply-side generation alternatives will likely have higher fuel costs and, therefore, increase the net cost to customers.

In making our decision whether to grant a determination of need, we have necessarily relied on the representations of the proposed power plant's cost effectiveness made by PEF. This reliance is especially critical where, as in PEF's petition before us in this case, there are no request for proposal results or other market-based checks on the utility's representations. Accordingly, while we grant PEF's requested exemption, PEF is on notice that we will closely scrutinize the reasonableness and prudence of any capital cost greater than those represented by PEF through its testimony and exhibits.

*Need for Electric System Reliability and Integrity*

In determining the need for the CR3 Uprate, we have taken into account the need for electric system reliability and integrity. The need for the CR3 Uprate is an economic need, not reliability need. The CR3 Uprate will displace higher cost fossil fuel and purchased power generation with low cost nuclear generation, resulting in substantial fuel savings that provide a net benefit to customers. The CR3 Uprate's substantial economic benefits satisfy the statutory need requirements under our prior precedent and Rule 25-22.081(3), F.A.C., recognizing an economic or socio-economic need for new generation.

*Need for Adequate Electricity at a Reasonable Cost*

We find that the CR3 Uprate will displace higher cost fossil fuel and purchased power generation with low cost nuclear generation, resulting in substantial fuel savings that provide a net benefit to customers. Nuclear energy is the lowest cost energy available on PEF's system. Producing additional nuclear energy from the CR3 Uprate, therefore, will produce energy at the lowest possible generation fuel cost.

*Need for Fuel Diversity and Supply Reliability*

We find that the proposed CR3 Uprate will displace fossil fuel and purchased power generation with nuclear generation, resulting in increased fuel diversity and supply reliability. The CR3 Uprate provides a stable source of additional base load power. Nuclear generation is

not subject to the same supply interruptions or changes in price volatility that can affect generation with fossil fuels. Rather, the supply of nuclear fuel is relatively plentiful and stable in price. PEF's customers, and the State, thus, will benefit from increased price stability, enhanced fuel diversity, and decreased reliance on foreign fuel sources resulting from the addition of nuclear capacity to PEF's system.

*No Mitigating Conservation Measures*

We find that expanding conservation programs cannot displace the CR3 Uprate. PEF is currently exceeding its Commission-approved numeric conservation goals. Further, PEF has recently expanded its demand side management program offerings, resulting in a projected additional 388 MW of summer demand savings. The CR3 Uprate will produce more incremental energy into the system than an equivalent amount of conservation can save. If the comparison were to be done on equivalent energy alone, it would take more MWs of conservation to save an amount of energy equivalent to the energy produced by the CR3 upgrade, which would result in higher costs to customers.

*Most Cost-Effective Alternative Available*

We find that the CR3 Uprate displaces higher cost generation on PEF's system, yielding substantial fuel savings to the net benefit of PEF's customers. PEF's customers will receive additional generation at a net savings of approximately $327 million on a cumulative net present value basis. This means that no entity offering a supply-side generation alternative can likely propose a lower cost alternative for the same amount of power, and certainly not from relatively clean nuclear power. The CR3 Uprate, because of the net fuel savings benefits driving the project, is the lowest cost supply of electricity for PEF's customers.

Conclusion

Based on the foregoing, we grant PEF's petition for a determination of need for the proposed expansion of the Crystal River Unit 3 Nuclear Power Plant because it fills an economic need. It will provide adequate electricity at a reasonable cost to customers. CR3 will displace higher cost fossil fuel and purchased power generation with low cost nuclear generation, resulting in substantial fuel savings that provide a net benefit to customers. Although it is not needed for reliability it does meet the need for fuel diversity and supply reliability. The proposed CR3 Uprate will displace fossil fuel and purchased power generation with nuclear generation, resulting in increased fuel diversity and supply reliability. PEF's customers, and the State, thus, will benefit from increased price stability, enhanced fuel diversity, and decreased reliance on foreign fuel sources resulting from the addition of nuclear capacity to PEF's system. There are no cost-effective demand-side management measures available to offset the need. Because the CR3 uprate displaces higher cost generation on PEF"s system, yielding fuel savings to the net benefit of PEF"s customer, there can be no less costly supply-side generation alternative available.

Upon further consideration, we exempt PEF from the requirements of Rule 25-22.082, (F.A.C.), as it applies to CR3 uprate. In granting the exemption, we do so upon the considerations listed above.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that Progress Energy Florida's petition for determination of need for its proposed expansion of Crystal River Unit 3 nuclear power plant is granted. It is further

ORDERED that Progress Energy Florida is exempted from the requirements of Rule 25-22.082, Florida Administrative Code. It is further

ORDERED that this docket shall be closed.

By ORDER of the Florida Public Service Commission this 8th day of February, 2007.

Blanca S. Bayó

BLANCA S. BAYÓ, Director
Division of the Commission Clerk
and Administrative Services

( S E A L )

LCB

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Director, Division of the Commission Clerk and Administrative Services, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within five (5) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Director, Division of the Commission Clerk and Administrative Services and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

## Appendix II-2: Southwest Florida Water Management District

**SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT – AGENCY REPORT**

**PROGRESS ENERGY FLORIDA**
**CRYSTAL RIVER UNIT 3 UPRATE PROJECT**
**POWER PLANT SITING APPLICATION No. PA 77-09A2**

**STAFF RECOMMENDATION – APPROVAL WITH CONDITIONS**



## I. PROJECT DESCRIPTION

Progress Energy Florida (PEF) owns and operates the electrical generating facilities at the Crystal River Energy Complex (Complex) located on approximately 4,738 acres on Crystal Bay, along the Gulf of Mexico. The Complex is located midway between the Withlacoochee/Cross Florida Barge Canal and Crystal River in Citrus County. Five separate power generation units operate within the Complex. Units 1 and 2 began operations in the 1960's, prior to adoption of the Florida Electrical Power Plant Siting Act (PPSA) in 1973. Unit 3 is an 838 MW pressured water nuclear reactor facility which began operations in 1977. Electrical power generation facilities in existence or under construction at the time the PPSA became effective were not required to seek certification. Hence, Units 1, 2 and 3 are not PPSA certified facilities. Units 4 and 5 became certified in 1978. The Complex utilizes a once-through water cooling system for all power generating facilities. Seawater is withdrawn from the Gulf of Mexico into a 14-mile-long intake canal, routed through the power generating Units, and then discharged back to the Gulf of Mexico through a separate discharge canal.

PEF is proposing to add 180 megawatts (MW) of electrical generation capacity to Unit 3. The additional power generation will increase the total Complex gross electrical power output from 900 MW to 1,080 MW. This increased capacity will require PPSA certification.

## II. EXISTING AND PROPOSED WATER USE

Twelve existing groundwater wells are permitted to provide water to the Complex, of which only nine are in use. The wells are located linearly eastward away from the Complex. The closest production well is approximately 3 miles east of the Complex. The wells provide raw water to a water treatment plant, which produces finished water used for potable and production-related (boiler makeup and pollution control) purposes. Units 1, 2 and 3 are served by the 5 most western wells, two of which produce brackish groundwater. The other four wells that are in use serve Units 4 and 5. Groundwater withdrawals for Units 1, 2 and 3 are currently authorized under Water Use Permit (WUP) No. 2003672.004, which was renewed by the District in November 2007. The WUP allows total withdrawals of 1,000,000 gallons per day (gpd) on an annual average basis and 1,500,000 gpd on a peak month basis. No new groundwater quantity is proposed to support the increased power generation for Unit 3. In light of the commingled water use for Units 1, 2 and 3, PEF has requested that it not be required to

segregate water use for Unit 3, and that Unit 3's water use continue to be regulated under WUP No. 2003672.004. Staff has agreed to this request.

## III. PROPOSED SURFACE WATER MANAGEMENT SYSTEM

The proposed uprating activities will include preparation of construction laydown and additional vehicle parking areas as part of the steam generator replacement component of the project. These activities may impact some of the onsite wetland systems. PEF proposes to address any substantive Environmental Resource Permit (ERP) requirements through separate ERPs for areas of the non-certified site or on a post-certification basis, following approval of the Unit 3 site certification. Once Unit 3 is certified, more detailed design work will be prepared. PEF proposes that appropriate conditions of certification provide for post-certification review and approval by DEP of any ERP-related impacts as necessary.

## IV. STAFF RECOMMENDATION

With the proposed conditions attached hereto and incorporated herein as Exhibit "A," the Conditions for Issuance of Chapter 40D-2, F.A.C., are met. Staff recommends approval of the certification application and forwarding of this Agency Report to the DEP, subject to the proposed conditions of certification.

**REPORT PREPARED BY:**

Paul Williams, P.G.
Water Use Manager
Brooksville Regulation Department

Date: 1/16/08

Leonard F. Bartos, P.W.S.
Environmental Regulation Manager
Brooksville Regulation Department

Date: 1/16/08

Bobby Lue
Director
Brooksville Regulation Department

Date: 1/16/08

Exhibit A
Proposed Conditions of Certification

A. Groundwater Use.

1. No groundwater use for Unit 3 is authorized by these Conditions of Certification. Potable water demand for Unit 3 shall continue to be met by water supply authorized under Water Use Permit (WUP) No. 2004695.004. WUP No. 2004695.004 authorizes 1,000,000 gallons per day (annual average) and 1,500,000 gpd (peak month) for boiler makeup, pollution control, and potable water needs at Units 1, 2, and 3.

L: \PEF Crystal River Unit 3\agency report.doc

**Appendix II-3: Citrus County Land Use Consistency**

# Board of County Commissioners
DEPARTMENT OF DEVELOPMENT SERVICES
Web Address: http://www.bocc.citrus.fl.us
Toll Free (352) 489-2120 • TTY (352) 527-5312
3600 W. Sovereign Path, Lecanto, FL 34461-8070

In reply, refer to:

DS-07-202

August 2, 2007

**By Fax Filing (850-921-6847)**

Anne Cole, Clerk
Division of Administrative Hearings
The DeSoto Building
1230 Apalachee Parkway
Tallahassee, FL 32399-3060

Re: Progress Energy Florida Crystal River Unit 3 Uprate Project
DOAH Case No. 07-2713EPP

Dear Ms. Cole:

Attached for filing with the Division of Administrative Hearings in the above-referenced case is Citrus County's Determination of Compliance with Local Land Use Plans and Zoning. Should you have any questions concerning the attached, please do not hesitate to call me at (352) 527-5220.

Respectfully,

Gary W. Maidhof, Director
Department of Development Services

GWM:pla
cc: June M. Fisher, County Administrator

STATE OF FLORIDA
DIVISION OF ADMINISTRATIVE HEARINGS

Re: Progress Energy Florida
Crystal River Unit 3 Uprate Project
Power Plant Siting Application
No. PA 77-09A2

DOAH Case No. 07-2713EPP
OGC Case No. 07-1062

CITRUS COUNTY'S DETERMINATION OF COMPLIANCE WITH LOCAL LAND USE PLANS AND ZONING

Citrus County, Florida hereby submits the following:

1. Citrus County has received a copy of the Site Certification Application that Progress Energy Florida filed with the Florida Department of Environmental Protection on June 6, 2007 seeking a certification under the Florida Power Plant Siting Act, Chapter 403, Part II, Florida Statutes for the Crystal River Unit 3 Uprate Project (CR3 Uprate Project).

2. Citrus County is familiar with the existing and proposed facilities and activities on the proposed site. The site is located in the unincorporated area of Citrus County.

3. Sections 2.2.2.2 (Zoning) and 2.2.2.2 (Future Land Use) of the Site Certification Application correctly identify the Zoning and Future Land Use Designations for the proposed site CR3 Uprate Project site in Citrus County as Transportation, Communications, and Utilities.

4. The Future Land Use designation for the proposed site is Transportation, Communications, and Utilities, and the Citrus County Comprehensive Plan, Future Land Use Element allows "Public Utility Facilities" which include power plants as allowed uses on the proposed site.

5. The zoning category for the Project site and access roads is also Transportation, Communications, and Utilities which allows power plants and ancillary facilities as permitted principal uses pursuant to Section 4634 of the Citrus County Land Development Code.

6. Based upon the foregoing statement of facts, Citrus County has determined that the Crystal River Unit 3 Uprate Project, as described in the Site Certification Application, is consistent with and in compliance with the land use plans and zoning ordinances of Citrus County, Florida, pursuant to section 403.50665(2), Florida Statutes (2006).

SUBMITTED FOR CITRUS COUNTY ON THIS 1ST DAY OF AUGUST 2007 BY:

Gary W. Maidhof, Director
Department of Development Services
3600 W Sovereign Path, Suite #109
Lecanto, Florida 34461

f://shared/dds/dds admin/Project Energy/ CR3 Uprate Project AUG 07

## CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by U.S. Mail this 1st day of August, 2007:

Jack Chisolm, Esq
Deputy General Counsel
Department of Environmental Protection
3900 Commonwealth Blvd., MS 35
Tallahassee, FL 32399-3000

James V. Antista, Esq.
Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

Kelly A. Martinson, Esq.
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100

Sheauching Yu, Esq.
Department of Transportation
Haydon Burns Building
605 Suwannee Street, MS 58
Tallahassee, FL 32399-0450

Mary Ann Helton, Esq.
Florida Public Service Commission
Gerald Gunter Building
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Martha A. Moore, Esq.
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899

Cindy Mulkey
Office of Siting Coordination
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

Fred Landt, Esq.
Withlacoochee Regional Planning Council
Post Office Box 2045
Ocala, FL 34478

Robert Battista, Esq.
Office of the Citrus County Attorney
110 N. Apopka Avenue
Inverness, FL 34450

Kevin A. Smith, Director
Sue Farnsworth, Environmental Planner
Citrus County Development Department
3600 W. Sovereign Path, Suite 140
Lecanto, FL 34461

R. Alex Glenn
Progress Energy Florida, LLC
Post Office Box 14042
St. Petersburg, FL 33733

Douglas S. Roberts, Esq.
Hopping Green & Sams, P.A.
Post Office Box 6526
Tallahassee, FL 32314

Gary W. Maidhof, Director
Citrus County
Department of Development Services

## Appendix II-4: Florida Fish and Wildlife Conservation Commission

Florida Fish and Wildlife Conservation Commission

Commissioners
**Rodney Barreto**
Chair
*Miami*

**Kathy Barco**
*Jacksonville*

**Ronald M. Bergeron**
*Fort Lauderdale*

**Richard A. Corbett**
*Tampa*

**Dwight Stephenson**
*Delray Beach*

**Kenneth W. Wright**
*Winter Park*

**Brian S. Yablonski**
*Tallahassee*

Executive Staff
**Kenneth D. Haddad**
Executive Director

**Victor J. Heller**
Assistant Executive Director

**Karen Ventimiglia**
Deputy Chief of Staff

Office of Policy and Stakeholder Coordination
**Mary Ann Poole**
Director
(850) 410-5272
(850) 922-5679 FAX

*Managing fish and wildlife resources for their long-term well-being and the benefit of people.*

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: (850) 488-4676

Hearing/speech impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)

MyFWC.com

February 1, 2008

Mike Halpin
Administrator, Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Progress Energy Florida Crystal River Unit 3, Citrus County

Dear Mr. Halpin:

The Florida Fish and Wildlife Conservation Commission (FWC) does not object to certification of the referenced project. In order to be consistent with Chapter 370.025, Florida Statutes, we recommend as a condition of certification that Progress Energy Florida provides to the FWC their report, when finished, which qualifies the baseline aquatic impingement and entrainment impacts due to the increased flow velocities at the intake screens at the Crystal River complex. In addition, as a condition for certification, we recommend that the Licensee will survey the certified site for species of fish and wildlife listed in Florida Administrative Code and report any findings to the FWC. If avoidance of impacts is not practicable, then the requirements of Article IV, Section 9 of the Florida Constitution, and the rules thereto, as well as statutes relating to protected species, are applicable, and the FWC shall be contacted prior to taking any action that might result in an impact to those species.

We appreciate the opportunity to comment. If we may provide any additional assistance, please contact us.

Sincerely,

David W Read

for Mary Ann Poole, Director
Office of Policy and Stakeholder Coordination

map/bl
ENV 2-11-2/3
Crystal River_896
cc: James Antista, FWC

**Appendix II-5: Withlacoochee Regional Planning Council**

MICHAEL R. MOEHLMAN
EXECUTIVE DIRECTOR

1241 S.W. 10th Street
OCALA, FLORIDA 34471-0323

Telephone 352-732-1315
FAX 352-732-1319
email: mailbox@wrpc.cc
http://www.wrpc.cc




December 3, 2007

Ms. Cindy Mulkey
Florida Energy & Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road MS-48
Tallahassee, FL 32399-2400

**CORRECTED COPY**

SUBJECT: Progress Energy Site Certification Application—Crystal River Unit 3 Uprate Project: Final Agency Report

Dear Ms. Mulkey:

Pursuant to Chapter 403.507 of the Florida Statutes, Withlacoochee Regional Planning Council (WRPC) staff has compiled a final agency report based on prior review of Progress Energy's completed site certification application. This letter summarizes affected goals, policies and objectives of the WRPC's Strategic Regional Policy Plan (SRPP). Council staff has written this statement for the benefit of the public, the applicant and all interested parties to convey clearly the impact of the proposed project on the region's SRPP. WRPC staff reviewed the following topics to determine overall consistency between the proposed project and the region's SRPP:

1. Natural Resources—Air Quality

The Withlacoochee Region's SRPP identifies electrical power plants as a potentially significant source of air pollution within a region that is otherwise in attainment of air quality standards. Under the 1977 Clean Air Act Amendments, Citrus County ranks as a Class II area by having attained air quality standards. Similarly, areas in the vicinity of the Crystal River Energy Complex as well as Chassahowitzka National Wildlife Area are Class I, meaning that only the smallest increments of pollution are permissible in these locations. Therefore, WRPC staff note the applicability of SRPP Goal 4.14 and Policy 4.1.4.4 in guiding project development.

***Goal 4.14*** Maintain the region's concentrations of all air pollutants for which standards have been established at levels less than the maximum allowed by state and federal standards.

***Policy 4.14.1*** Consider the cumulative effects of development on air quality during project review; implement mitigation measures where needed to avoid deterioration of ambient air.

Recommendation: Based on Goal 4.14 and Policy 4.14.1, WRPC staff asks that the project utilize the maximum available control technology to preserve regional air quality.

Natural Resources—Water Quality and Features

The SRPP lists the Crystal, Homosassa, and Chassahowitzka coastally connected rivers and springs as regionally significant resources. Additionally, these water bodies have been designated as Outstanding Florida Waters (OFW) by the state. Citrus County's coast, near the project site, has the status of aquatic preserve, consisting of state-owned sovereign submerged lands and associated water bodies. Likewise, the Chassahowitzka National Wildlife Refuge is located to the south along the coast.

Moreover, Florida law (F.A.C. 17-302.400 ) designates almost all of Citrus County's coastal waters as maintaining a superior rating of suitability for aquatic life. Specifically, these waters meet Class II standards. This indicates conditions necessary for productive fisheries and aquaculture propagation.

Consequently, if any water temperature rise resulted in the Florida Barge Canal and/or Gulf of Mexico as a result of the proposed project, then that would constitute a negative impact requiring mitigation. Offsite temperature increase would adversely impact the integrity of those regionally significant resources listed above. The following goals and policies address staff concern:

***Goal 4.5*** Maintain and restore coastal resources and the natural functions of coastal ecosystems.

***Goal 4.6*** Protect marine habitats from the adverse impacts of new development and redevelopment.

***Policy 4. 6.6*** Where unregulated discharge of heated water occurs, do not cause substantial damage or harm to the aquatic life or vegetation in the receiving body of water or interfere with the beneficial uses designated for the classification assigned to those waters.

Recommendation: Based on SRPP Goals 4.5/4.6 and Policy 4.6.6, staff asks that the proposed project employ the maximum available control technology to prevent and minimize adverse impacts to the environmental quality and ecosystems of regional water bodies. Staff further asks that water temperature monitoring be considered to track project outcomes. Should an increase in water temperatures be detected, staff asks that all appropriate mitigation measures be taken to manage water temperature change.

Natural Resources—Energy

The SRPP discusses energy use within the region, and recognizes that all human systems require energy to function. The SRPP stresses efficient use of the region's energy resources. It also prioritizes development of electrical energy generation from a variety of sources.

***Goal 4.16*** Achieve a rate of per capita electrical energy use no greater than state averages.

Recommendation: The SRPP affirms the foundational role played by electrical energy generation in all human activities within the region, and the proposed project is consistent with this view of regional energy need.

2. Transportation—Roadway Level of Service

Traffic impact analysis provided in the application indicates a temporary increase in trips on US-19 and deterioration of the Intersection (LOS) at US-19 and West Powerline Road, during construction. As a regionally significant roadway, US-19 is subject to guidance by SRPP policies and goals.

***Policy 5.5.1*** Level of service standards for regionally significant roadways should be consistent with Florida Department of Transportation (FDOT) recommended level of service standards.

***Policy 5.5.9*** Coordinate land use plans and transportation planning efforts to ensure that land use decisions and transportation improvements are complementary.

Recommendation: WRPC staff recommends traffic monitoring occur over the duration of the project construction to determine what may be done to mitigate adverse traffic impacts to US-19 through transportation system management or other appropriate actions.

3. Economic Development

Residual heat from the power generation process could have economic use. If explored, heat output from the plant could serve as input for other industry. WRPC staff encourage the owner/developer to investigate such possibilities. Such an approach would aid efficient use of surplus energy, while facilitating new industry and markets. The SRPP supports such an innovative approach.

***Policy 4.15.1*** Use renewable [residual] energy sources wherever feasible.

***Policy 2.3.10*** Increase intra-regional cooperation in attraction/expansion of industry dependant upon close proximity to one another or actual co-location.

***Policy 2.3.7*** Increase coordinated economic development approaches through partnerships among education, business, industry, agriculture and the arts.

Recommendation: WRPC staff recommends that the owner/developer explore developing new economic uses for the residuals of electrical power generation.

The recommendations outlined above communicate the best case-scenario for project development, given the requirements of the Withlacoochee Region's SRPP. WRPC staff finds the completed site certification application to be consistent with the requirements of the SRPP, although all reasonable measures should be taken during and after project development to safeguard regionally significant resources. The SRPP does not require the applicant to seek any variations, exceptions, forms of relief or to satisfy other requirements at the regional planning council level. Furthermore, the proposed project represents an intensification of activity already occuring onsite. It is WRPC staff's recommendation that the proposed uprate project for Unit 3 of the Crystal River Energy Complex be approved.

Please contact me with any questions regarding this matter.

Sincerely,

Bruce Day
Planning Director
Withlacoochee Regional Planning Council
bday@wrpc.cc
352.732.1315 ext. 230
352.732.1319 Fax

Xc: Parties of record
Douglas Roberts, Esq., Counsel for Progress Energy, Inc.
Levy County
DCA
File

BD/dpc

## Appendix II-6: Department of Transportation

Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0458

STEPHANIE C. KOPELOUSOS
SECRETARY

December 19, 2007



Mr. Mike Halpin, Program Administrator
Florida Energy and Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, Florida 32399-2400

Re: Progress Energy Florida Crystal River Unit 3 Uprate
Project Power Plant Siting Application
No. PA 77-09A2
DOAH Case No. 07-2713 EPP
DEP OGC Case No. 07-1062

Dear Mr. Halpin:

Enclosed is the Florida Department of Transportation's Agency Report for the Progress Energy Florida Crystal River Unit 3 Uprate Project Power Plant Siting Application.

If there are any questions, please call either me at (850) 414-5286 or Connie Mitchell, Siting Coordinator, at (850) 414-4572. Thank you.

Sincerely,

Leon M. Biegalski

Leon M. Biegalski
Assistant General Counsel

cc: Douglas S. Roberts, Esq., Hopping Green & Sams
Kent Fast, District 7
Connie Mitchell

**FLORIDA DEPARTMENT OF TRANSPORTATION**
**Agency Report on Progress Energy Florida Crystal River Unit 3 Uprate Project**
**Power Plant Siting Application**
**No. PA 77-09A2**
**DOAH Case No. 07-2713EPP**
**DEP Case No. 07-1062**

## SECTION I. CORRIDOR LOCATION ISSUES

No outstanding issues.

## SECTION II. OUTSTANDING SUFFICIENCY ISSUES

No outstanding issues.

## SECTION III. VARIANCES TO STANDARDS

No variances requested.

## SECTION IV. SPECIAL USE PERMISSIONS

No special use permissions requested.

## SECTION V. RECOMMENDATION FOR CERTIFICATION

The Florida Department of Transportation recommends the certification of the proposed power plant expansion. This recommendation is made contingent upon the conditions of Section VI being addressed/met.

## SECTION VI. PROPOSED CONDITIONS OF CERTIFICATION

### 6.1 REQUEST FOR RESTRICTED AREAS

No requests for restricted areas are necessary.

### 6.2 POST CERTIFICATION REVIEW ITEMS

**Access Management to the State Highway System:** Any access to the State Highway System will be subject to the requirements of Rule Chapters 14-96, State Highway System Connection Permits, and 14-97, Access Management Classification System and Standards, Florida Administrative Code.

**Overweight or Overdimensional Loads**: Operation of overweight or overdimensional loads by the applicant on State transportation facilities during construction and operation of the utility facility will be subject to safety and permitting requirements of Chapter 316, Florida Statutes, and Rule Chapter 14-26, Safety Regulations and Permit Fees for Overweight and Overdimensional Vehicles, Florida Administrative Code.

**Use of State of Florida Right of Way or Transportation Facilities** All usage and crossing of State of Florida right of way or transportation facilities will be subject to Rule Chapter 14-46, Utilities Installation or Adjustment, Florida Administrative Code; Florida Department of Transportation's Utility Accommodation Manual (Document 710-020-001); Design Standards for Design, Construction, Maintenance and Utility Operation on the State Highway System; Standard Specifications for Road and Bridge Construction; and pertinent sections of the Florida Department of Transportation's Project Development and Environmental Manual. US 19 have been identified as Florida Intrastate Highway System (FIHS) and Strategic Intermodal System's (SIS) facilities. The placement of the transmission line and pipeline should take into consideration the planned widening of these facilities. The cost of relocating or reconstructing the transmission line and pipeline will be borne by the applicant to the extent required by Section 337.403, Florida Statutes, and Rule Chapter 14-46, Florida Administrative Code.

**Standards**: The Manual on Uniform Traffic Control Devices; Florida Department of Transportation's Design Standards for Design, Construction, Maintenance and Utility Operation on the State Highway System; Florida Department of Transportation's Standard Specifications for Road and Bridge Construction; Florida Department of Transportation's Utility Accommodation Manual; and pertinent sections of the Department of Transportation's Project Development and Environmental Manual will be adhered to in all circumstances involving the State Highway System and other transportation facilities.

**Drainage:** Any drainage onto State of Florida right of way and transportation facilities will be subject to the requirements of Rule Chapter 14-86, Drainage Connections, Florida Administrative Code, including the attainment of any permit required thereby.

**Use of Air Space**: Any newly proposed structure or alteration of an existing structure will be subject to the requirements of Chapter 333, F.S., and Rule 14-60.009, Airspace Protection, F.A.C. Additionally, notification to the Federal Aviation Administration (FAA) is required prior to beginning construction, if the structure exceeds notification requirements of 14 CFR Part 77, Objects Affecting Navigable Airspace, Subpart B, Notice of Construction or Alteration. Notification will be provided to FAA Southern Region Headquarters using FAA Form 7460-1, Notice of Proposed Construction or Alteration in accordance with instructions therein. A subsequent Determination by the FAA stating that the structure exceeds any federal obstruction standard of 14 CFR Part 77, Subpart C for any structure that is located within a 10-nautical-mile radius of the geographical center of a public-use airport or military airfield in Florida will be required to submit information for an Airspace Obstruction Permit from the Florida Department of Transportation or variance from local government depending on the entity with jurisdictional authority over the site of the proposed structure. The FAA Determination regarding the structure

serves only as a review of its impact on federal airspace and is not an authorization to proceed with any construction. However, FAA recommendations for marking and/or lighting of the proposed structure are made mandatory by Florida law. For a site under Florida Department of Transportation jurisdiction, application will be made by submitting Florida Department Transportation Form 725-040-11, Airspace Obstruction Permit Application, in accordance with the instructions therein.

## SECTION VII BEST MANAGEMENT PRACTICES

Traffic control during facility construction and maintenance will be subject to the standards contained in the Manual on Uniform Traffic Control Devices; Rule Chapter 14-94, Statewide Minimum Level of Service Standards, Florida Administrative Code; Florida Department of Transportation's Design Standards for Design, Construction, Maintenance and Utility Operation on the State Highway System; Florida Department of Transportation's Standard Specifications for Road and Bridge Construction; and Florida Department of Transportation's Utility Accommodation Manual, whichever is more stringent.

It is recommended that the applicant encourage transportation demand management techniques by doing the following:

Placing a bulletin board on site for car pooling advertisements.

Requiring that heavy construction vehicles remain onsite for the duration of construction to the extent practicable.

If the applicant uses contractors for the delivery of any overweight or overdimensional loads to the site during construction, the applicant should ensure that its contractors adhere to the necessary standards and receive the necessary permits required under Chapter 316, Florida Statutes, and Rule Chapter 14-26, Safety Regulations and Permit Fees for Overweight and Overdimensional Vehicles, Florida Administrative Code.

References

[1] U.S. Energy Information Administration. *State Carbon Dioxide Emissions: 2007.* Available at: http://www.eia.doe.gov/environment.html

2 U.S. Energy Information Administration. *International Emissions Data: Energy-Related Emissions Data. 2006*. Available at: http://www.eia.doe.gov/pub/international/iealf/tableh1co2.xls

[3] Sierra Club. *Global Warming & Energy, Global Warming Q & A.* Available at http://www.sierraclub.org/globalwarming/qa/sources

4 U.S. Energy Information Administration. Energy Outlook 2007 with Projections to 2030, Report # DOE/EIA-0383(2007), February 2008. Available at: http://www.eia.doe.gov/oiaf/aeo/index.html

5 U.S. Energy Information Administration. *Emissions of Greenhouse Gases in the United States 1985-1990*, DOE/EIA-0573 (Washington, DC, September 1993), p. 16.