1.0 Introduction and General Information

Duke Energy Florida, Inc. (DEF), the Applicant, is filing this site certification application (SCA) for the proposed construction and operation of new electrical generating facilities in Citrus County, Florida. The proposed facilities will be located on an approximately 400-acre site (Site) adjacent to the eastern boundary of DEF's existing Crystal River Energy Complex (CREC) and north of the existing transmission line right-of-way to the CREC. The facilities will consist of two natural gas-fired combined cycle units with each unit utilizing two advanced combustion turbine generators (CTGs), two heat recovery steam generators (HRSGs), one steam turbine generator (STG), and directly associated facilities. The proposed facilities also include several on- and off-Site associated linear facilities, including 230- and 500-kilovolt (kV) electrical transmission lines and pipelines for cooling tower makeup and blowdown, augmentation water, and well water. The off-Site portions of these linear facilities will be located within corridors wholly contained within DEF-owned CREC property. Each combined cycle unit will have a nominal generating capacity of 820 megawatts (MW), for a total nominal generating capacity of 1,640 MW. In this SCA, the proposed project, which includes the electrical generating facilities and all associated facilities, will be referred to as the Citrus Combined Cycle Project (CCC, CCC Project, or Project). Figure 1.0.0-1 shows the regional location of the CCC Site, and Figure 1.0.0-2 provides a conceptual rendering of the proposed facilities on the Site.

This SCA has been prepared in accordance with the requirements of: (a) the Florida Electrical Power Plant Siting Act (PPSA), Sections 403.501 through 403.518, Florida Statutes (F.S.); and (b) the Florida Department of Environmental Protection (FDEP) rules implementing the PPSA, codified in Chapter 62-17, Part I (62-17.011 through 62-17.293), Florida Administrative Code (F.A.C.). This SCA follows the format of the draft FDEP Application Instruction Guide: Electrical Power Plant Sites and Associated Facilities Electrical Transmission Lines, revised September 1, 2009.

This SCA chapter provides information on the Applicant, DEF, an overview of the proposed CCC Project and DEF's existing CREC, and the purpose of the SCA.

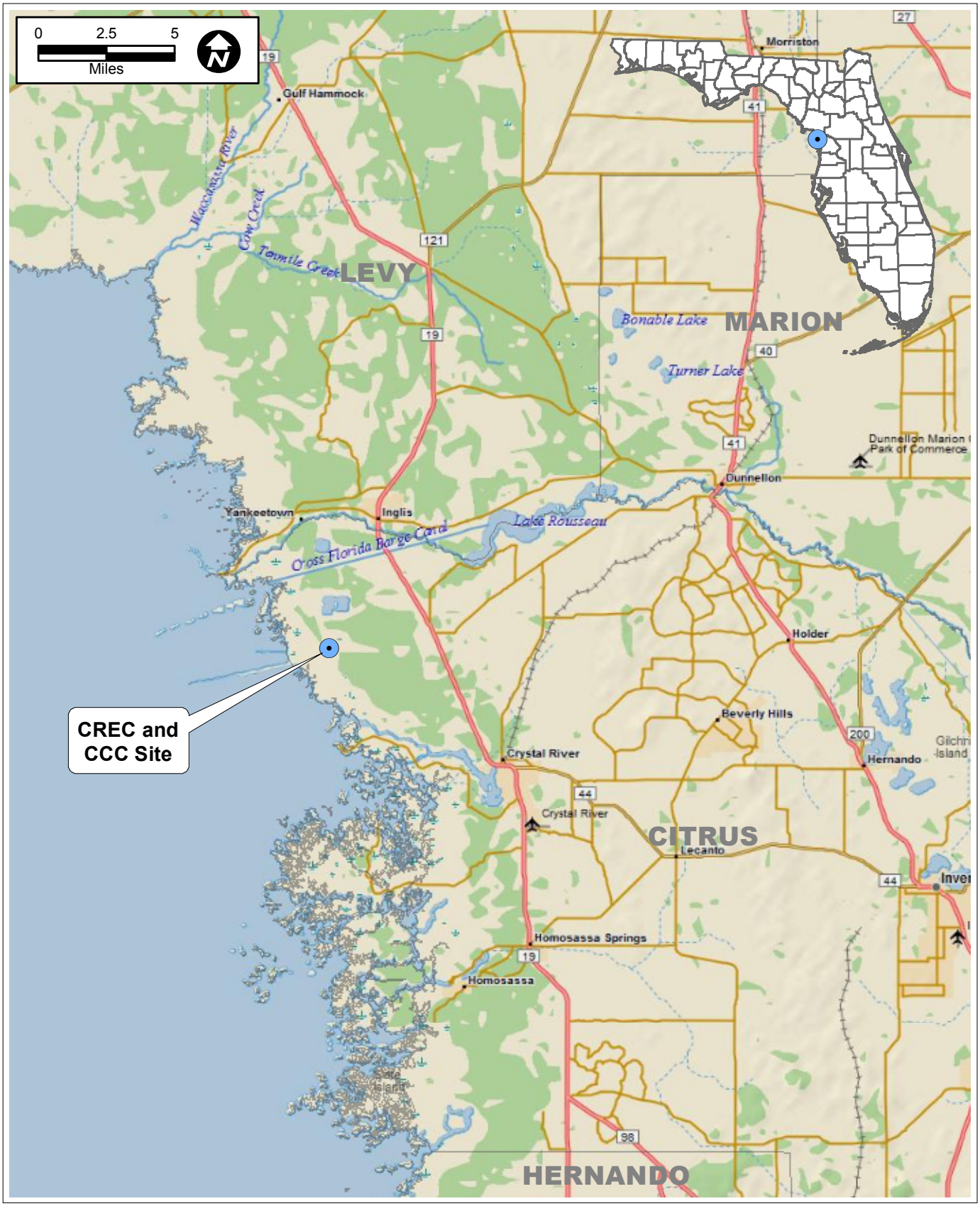

FIGURE 1.0.0-1.

REGIONAL LOCATION OF CREC AND CCC SITE

Sources: DeLorme, 2014; ECT, 2014.

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AERIAL VIEW FROM EAST

FIGURE 1.0.0-2.

CONCEPTUAL RENDERING OF PROPOSED CCC FACILITIES

Source: DEF, 2014.

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1.1 Applicant Information

1.1.1 Applicant Identification

DEF is the Applicant for this SCA for the proposed CCC Project. Table 1.1.1-1 provides the basic information to identify DEF as prescribed in FDEP's instruction guide.

1.1.2 DEF Information

DEF, headquartered in St. Petersburg, Florida, is a wholly-owned subsidiary of Duke Energy Corporation (Duke Energy). Among others, DEF is subject to the rules and regulations of the Federal Energy Regulatory Commission (FERC) and Florida Public Service Commission (PSC).

DEF serves approximately 1.7 million customers in Florida. As shown in Figure 1.1.2-1, DEF's service territory covers approximately 20,000 square miles in all or part of 35 counties from Central Florida north to the Florida-Georgia state line. This territory includes the densely populated areas around Orlando, as well as the cities of St. Petersburg and Clearwater. DEF is interconnected with 22 municipal and nine rural electric cooperative systems in Florida.

DEF's existing, owned generating resources are located at 14 power plant sites distributed geographically around its service territory (Figure 1.1.2-1). These resources consist of a diversity of generating technologies and fuels, including coal- and natural gas-fired steam units; natural gas-fired combined cycle units; and natural gas- and oil-fired CTG units. As of December 31, 2013, DEF had total summer generating capacity resources of 11,258 MW, consisting of installed capacity of 9,141 MW and 2,117 MW of firm purchased power.

The DEF electrical transmission system includes approximately 5,000 circuit miles of transmission lines. DEF's electrical distribution system includes approximately 18,000 circuit miles of overhead distribution conductors and approximately 13,000 circuit miles of underground cable.

Table 1.1.1-1. Applicant Information

Applicant's Official Name:	Duke Energy Florida, Inc. (DEF)
Address of Applicant:	299 First Avenue North, St. Petersburg, Florida 33701
Address of Official Headquarters:	299 First Avenue North, St. Petersburg, Florida 33701
Business Entity (corporation, partnership, cooperative):	Corporation
Name and Title of Chief Executive Officer:	R. Alexander Glenn, State President Florida
Name, Address, and Telephone Number of Official Representative Responsible for Obtaining Certification:	Amy Dierolf, Lead Environmental Specialist Duke Energy Florida, Inc. 299 First Avenue North, FL903 St. Petersburg, Florida 33701 727 – 820 – 5657
Site Location—County:	Citrus County
Nearest Incorporated City:	City of Crystal River
Latitude and Longitude:	Latitude: 28° 59′ 5.4″ Longitude: 82° 40′ 24.08″
Universal Transverse Mercators (UTM), Northerly and Easterly:	Northerly: 3,205,613.46 Easterly: 336,953.01
Section, Township, Range:	Sections 26 and 27, Township 17 South, Range 16 East
Location of Any Directly Associated Transmission Facilities (Counties):	New 230- and 500-kilovolt (kV) transmission lines inter-connecting with existing 230- and 500-kV lines and cooling tower makeup and blowdown water, blowdown augmenta-tion water, and well water pipelines within corridors on Crystal River Energy Center property in Citrus County
Name Plate Generating Capacity of Additional Unit:	1,640 MW (nominal)
Ultimate Site Capacity:	No ultimate site capacity is requested
Additional Information:	Project Name: Citrus Combined Cycle (CCC) Project

Source: DEF, 2014.

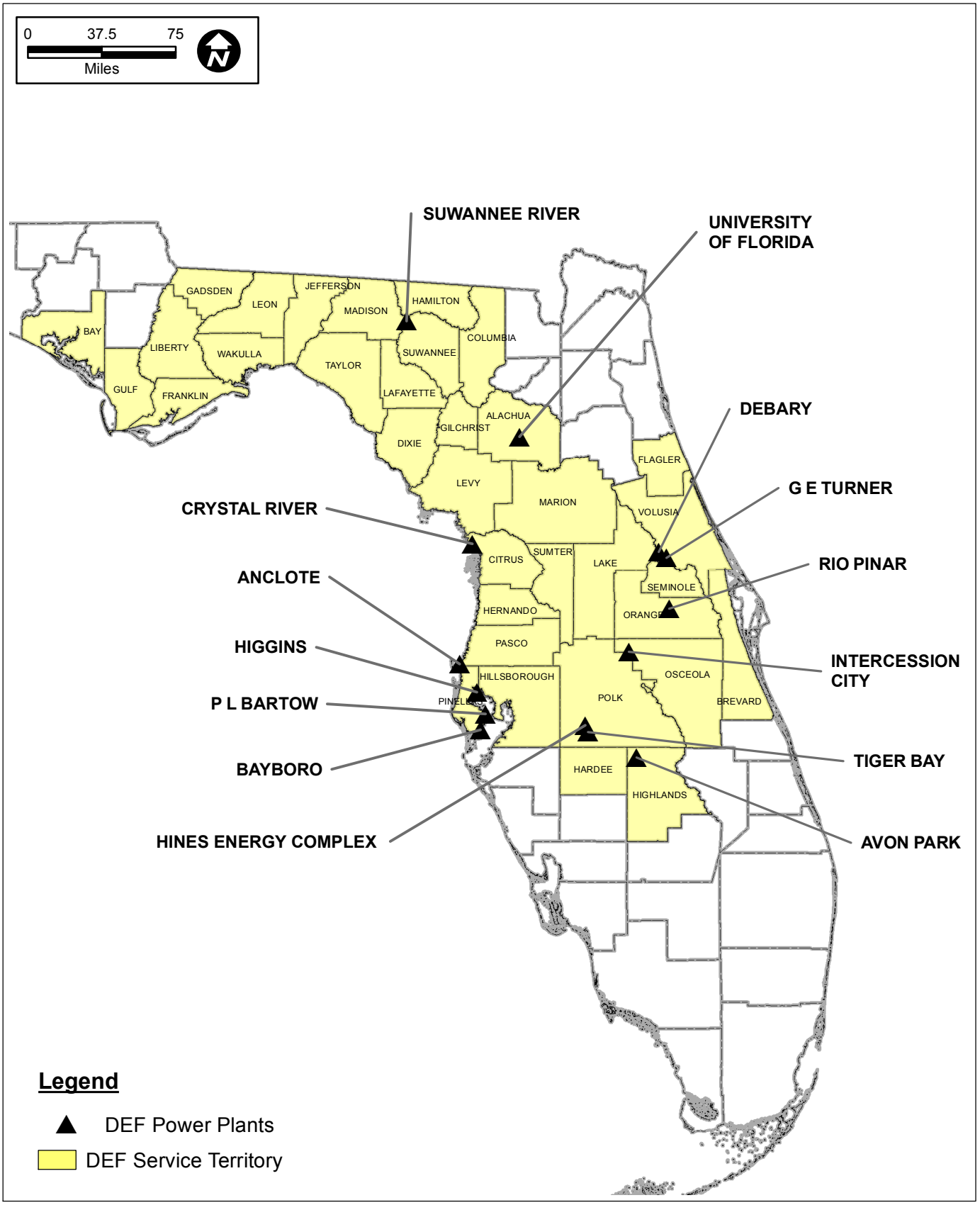

FIGURE 1.1.2-1.
DEF SERVICE TERRITORY AND POWER PLANT LOCATIONS

Sources: ECT, 2014.

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1.2 Overview of Existing CREC and Facilities

The proposed CCC Project will be located on an approximately 400-acre Site adjacent to DEF's existing CREC in northwestern Citrus County, Florida. As shown on Figure 1.2.0-1, the existing CREC property consists of approximately 4,400 acres, including the approximately 1,330-foot (ft)-wide transmission line and road corridor running east from the site to U.S. Highway 19 (U.S. 19). Adjacent land uses to the CREC property primarily include limestone mining and lands designated for future limestone mining to the north and northwest and conservation lands to the south and southwest. Access to CREC is provided by West Power Line Street, which connects to U.S. 19, approximately 3 miles to the east.

CREC has been used for power generation since 1966. The complex currently contains four operating coal-fired plants (Crystal River Units 1, 2, 4, and 5) and one nuclear plant (Crystal River Unit 3), which was permanently retired in 2013. The 440.5-MW (nominal) Unit 1 and 523.8-MW (nominal) Unit 2 were placed in commercial service in 1966 and 1969, respectively. The retired Unit 3 nuclear plant was placed in service in 1977. The 760-MW (nominal) Unit 4 and 760-MW (nominal) Unit 5 were placed in service in 1982 and 1984, respectively. Currently, the total generating capacity of the units on the CREC site is 2,484.3 MW (nominal). Figure 1.2.0-2 shows the locations of the generating units and major associated facilities at CREC. DEF currently anticipates retiring Units 1 and 2 in 2018 in coordination with the proposed CCC Project commercial operations.

Portions of CREC associated with Crystal River Units 4 and 5 were originally certified under the PPSA in November 1978 (Case No. PA 77-09, Florida Division of Administrative Hearings Case No. 77-2212). The now-retired Unit 3 nuclear plant was certified under the PPSA in 2008 (PA77-09A2; Division of Administrative Hearings Case No. 07-2713EPP). Figure 1.2.0-2 shows the certified areas within the CREC property. Therefore, the current conditions of certification (COCs), dated August 1, 2012, are applicable to Units 3, 4, and 5 and their associated facilities. Units 1 and 2 are not subject to the certification or the COCs.

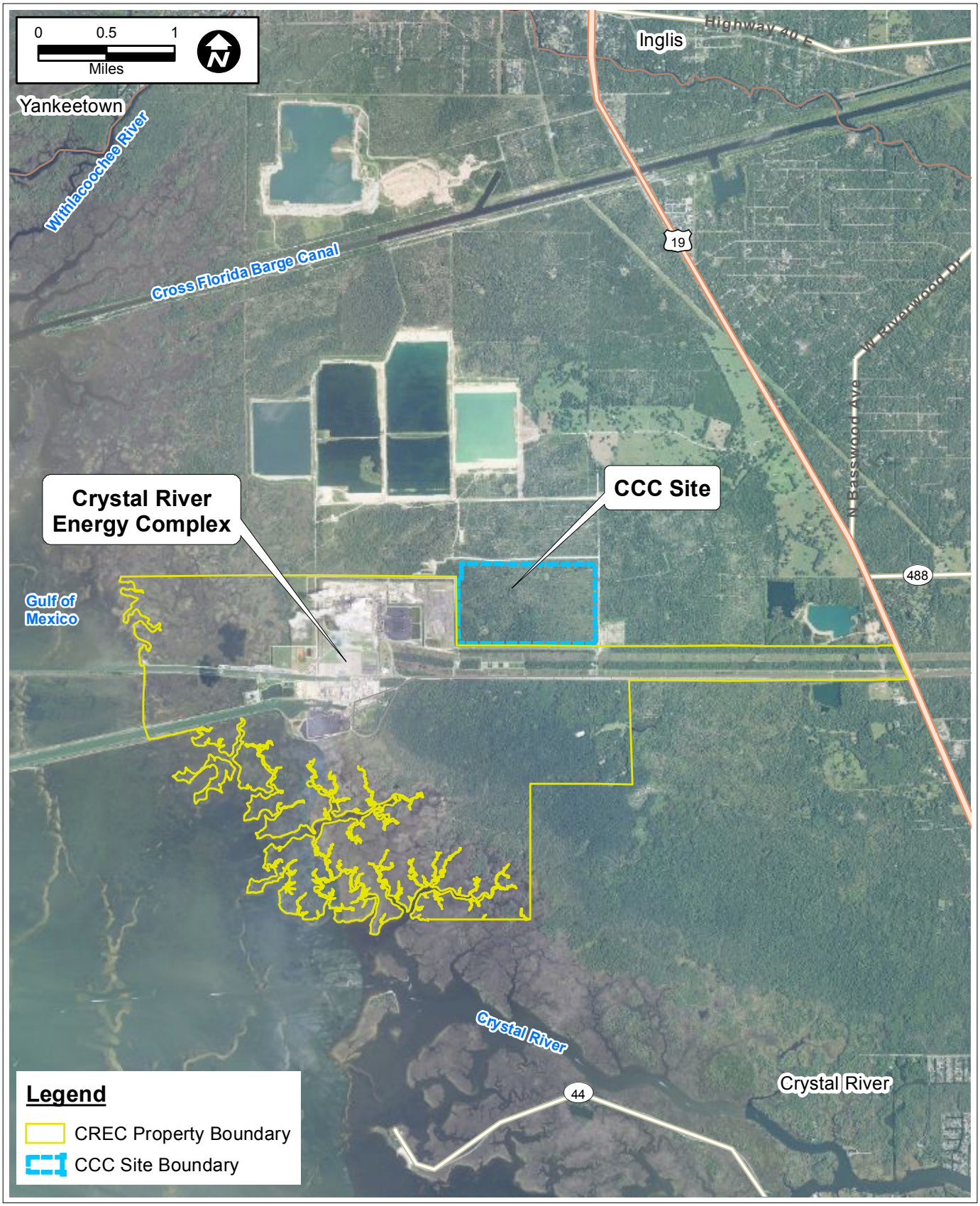

FIGURE 1.2.0-1.
GENERAL VICINITY LOCATION OF CCC SITE

Sources: ESRI, 2013; NAIP, 2013; AMEC, 2013; ECT, 2014.

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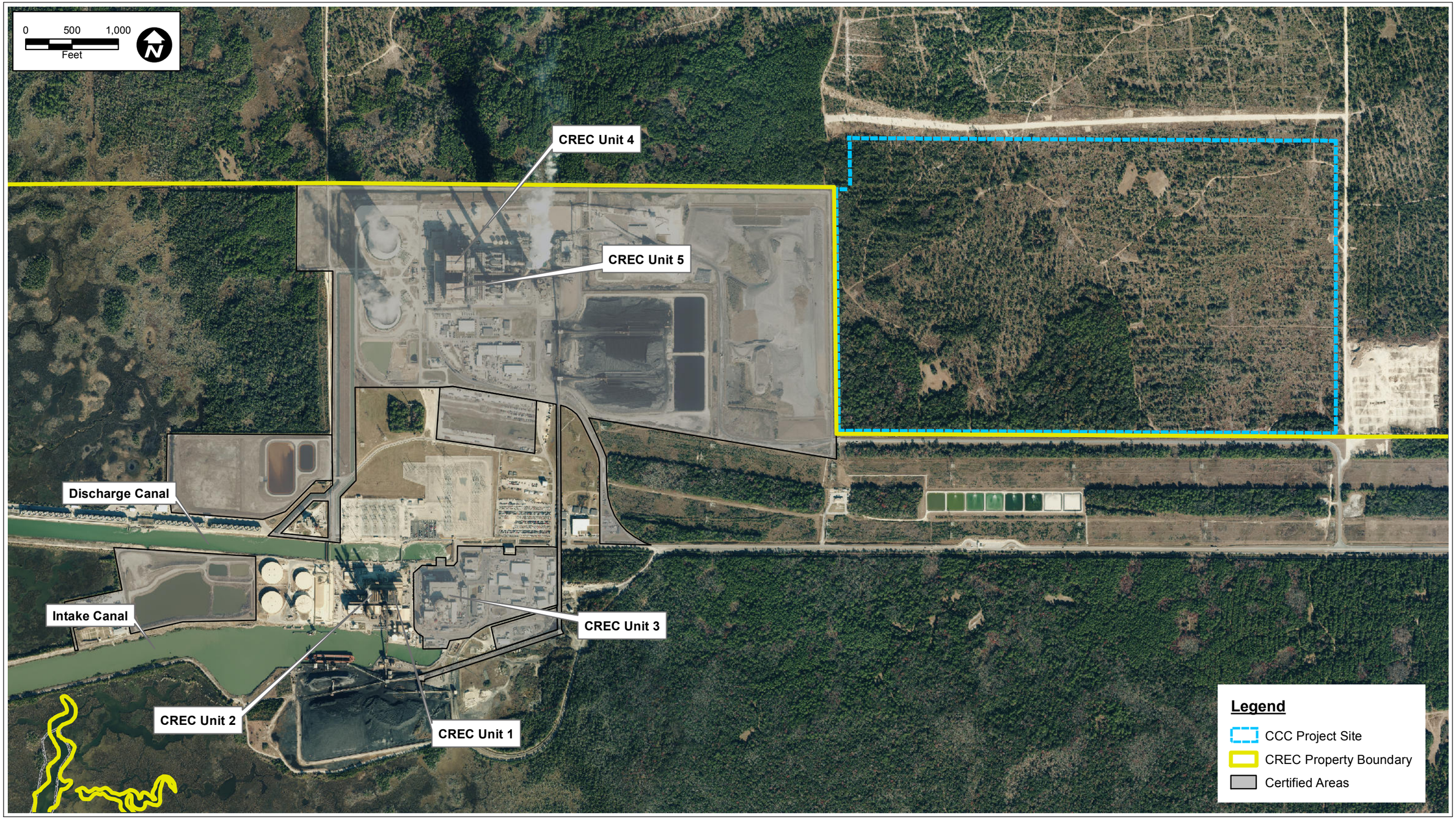

FIGURE 1.2.0-2.
LOCATIONS OF EXISTING FACILITIES AT CREC AND PREVIOUSLY CERTIFIED AREAS

Sources: Labins Aerials 2011; ECT, 2014.

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1.3 Overview of CCC Project

Based on its integrated resource planning (IRP) process, DEF has determined the need for additional generating capacity in 2018. The results of the IRP process have also determined that the most cost-effective and reliable alternative to meet this future power supply need is the construction of the proposed CCC Project. The CCC Project will involve state-of-the-art electric generating facilities with advanced environmental control systems.

The proposed CCC Project will be located on an approximately 400-acre Site adjacent to DEF's existing CREC. As shown on Figure 1.2.0-2, the Site is situated to the east of and directly adjacent to the existing CREC Units 4 and 5 certified area, north of the existing transmission line and road corridor, and approximately 2.3 miles west of U.S. 19. The closest incorporated areas to the Site are the city of Crystal River approximately 4 miles to the southeast, the town of Inglis 4 miles to the northeast, and the town of Yankeetown 4.5 miles to the northwest. The closest larger municipal areas to the Site are the city of Ocala approximately 40 miles to the northeast and the city of Tampa approximately 70 miles to the south.

The proposed CCC Project will consist of two two-on-one combined cycle electric generating units. Each unit will have two advanced CTGs, two HRSGs, and one STG. Each unit will have a nominal net generating capacity of 820 MW, for a total combined capacity of 1,640 MW. The units will be fired on natural gas only. The Project also includes on-Site associated facilities, such as mechanical draft cooling towers, administration/warehouse building and parking, emergency diesel generators, firewater pump, inlet air chillers and water storage tank, water treatment facilities, switchyard, stormwater management system and detention ponds, and wastewater percolation pond. In addition, the Project includes several associated linear facilities that run both on- and off-Site, including four 230-kV and three 500-kV electrical transmission lines and pipelines for cooling tower makeup and blowdown water, blowdown augmentation water, and well water (see Figure 4.2.0-1 in Chapter 4.0). Chapter 9.0 of this SCA addresses the proposed associated linear facilities. Construction activities for the Project are scheduled to begin in January 2016, and commercial operation is scheduled for May 2018 for the first unit and December 2018 for the second unit.

The efficiency of electrical power generation is improved when a simple cycle CTG is combined with an HRSG and STG for combined cycle operation. When a CTG operates in simple cycle mode, the hot combustion gases are released to the atmosphere. In a combined cycle configuration, the hot gases from the CTG are used to produce steam in an HRSG, and the steam is then used to drive an STG to generate additional electricity without additional fuel input.

The proposed CCC Project will be designed to utilize technologies to minimize air emissions. After detailed evaluations, DEF has selected the Mitsubishi® 501GH advanced, large-frame CTG model for the Project. The CTGs will be equipped with dry low-nitrogen oxide (NO_x) combustors to control NO_x air emissions. The HRSGs will be equipped with selective catalytic reduction (SCR) systems to further reduce NO_x emissions. Emissions of other air pollutants (i.e., sulfur dioxide [SO_2], carbon monoxide [CO], volatile organic compounds [VOCs], and particulate matter [PM]) will be controlled and minimized through the use of pipeline-quality natural gas and good combustion practices. In addition, the Project will minimize greenhouse gas (GHG) emissions through the use of natural gas, along with the highly efficient combined cycle generation technology. On a pound-per-megawatt-hour (lb/MW-hr) basis, the operation of the Project combined cycle units in place of less efficient generation using other fossil fuels (i.e., coal) will result in an overall reduction in GHG emissions from DEF's system.

The proposed CCC Project will be designed to minimize the use of water and maximize the recycling/reuse of water. The condenser cooling system will be a closed-loop system consisting of a new 14- or 16-cell mechanical draft cooling tower for each unit. Cooling tower makeup water will be withdrawn from the existing CREC intake canal through the existing Unit 3 intake structure. Groundwater use will be minimized through the use of seawater for cooling water. Cooling tower blowdown will be discharged to the existing CREC discharge canal through a new discharge structure. The proposed CCC Project's cooling water makeup withdrawal and blowdown discharge quantities will be significantly less than the previous flows with Unit 3 in operation. Process and potable water needs for the proposed Project will be provided from existing or replacement wells on the CREC property, and these needs will not increase the existing groundwater use allocations for CREC. The cooling water makeup and blowdown water, augmentation water, and well water pipelines will be located within the

existing CREC transmission line/road corridor south of the CCC Site moving west to terminate at the existing CREC intake and discharge canals, all on DEF-owned property.

The proposed CCC Project will be interconnected to the transmission system through new 230- and 500-kV transmission line interconnections to DEF's existing transmission lines in the existing corridor south of the CCC Site. The corridor is approximately 1,240 ft wide and 14,000 ft long. No associated transmission lines outside DEF's existing property will be needed for the Project.

Natural gas fuel for the Project will be supplied through a new, approximately 22-mile pipeline lateral from the new Sabal Trail Transmission, LLC (Sabal Trail), natural gas transmission system. The pipeline lateral will begin in southwestern Marion County and will run southwest and then west to the Project Site. The new pipeline lateral will be permitted, owned, and oeprated by Sabal Trail; therefore, the lateral is not included as an associated linear facility in this SCA.

1.4 Summary of Public Outreach Program

DEF is committed to keeping its customers, plant neighbors, and the public informed on the proposed CCC Project and to consider inputs and feedback from these stakeholders. To meet this commitment, DEF has implemented a proactive public outreach program for the Project to provide information about the Project, including the combined cycle natural gas technology, Project schedule, approval and permitting process, and environmental protection measures.

DEF formally announced its plans to construct the new state-of-the-art, highly efficient, combined cycle, natural gas plant in Citrus County on May 13, 2014. In conjunction with this announcement, DEF reached out to inform key stakeholders about the Project. Other public actions since the announcement have included:

- May 15, 2014—The Citrus County Planning and Development Commission, after a public hearing, voted unanimously in favor of forwarding DEF's comprehensive plan and atlas amendment applications to the Citrus County Board of County Commissioners (BOCC).

- May 27, 2014—DEF filed a petition for a determination of need with the Florida PSC.
- June 10, 2014—The Citrus County BOCC, after a public hearing, voted unanimously in favor of transmitting DEF's comprehensive plan and atlas amendment applications to state agencies for review.
- June 16, 2014—DEF mailed invitations to an open house for the Project, scheduled for July 10, 2014, to 16,029 residents within a 10-mile radius of the Site. DEF also issued a media release regarding the open house.
- July 7, 2014—DEF issued a reminder media release regarding the open house.
- July 10, 2014—DEF hosted an open house on the Project at the Plantation on Crystal River resort in Crystal River.

The July 10 open house provided the community an opportunity to meet the DEF Project team, ask questions, and provide feedback on DEF's CCC Project plans. More than 300 persons attended the open house, including local plant neighbors, DEF customers, and key community leaders. The open house was also attended by several newspaper and television reporters, and their coverage resulted in articles about the open house and Project over the following week.

To continue to update the community on the Project's progress and milestones and receive feedback, DEF has also set up a Project Website and toll-free telephone number:

- Project Website: http://www.duke-energy.com/citrusnaturalgas.
- Project toll-free telephone number: 1-800-510-7435.

A member of DEF's Project Team will respond to any comments or questions in a timely manner.

1.5 Purpose of the SCA

Since its enactment in 1973, all new power plants in Florida with a steam-generating capacity of 75 MW or greater are required to be certified (or licensed) in accordance with the PPSA, Sections 403.501 through 403.518, F.S. The PPSA provides for a centrally coordinated review and approval process of an SCA that incorporates applicable

state, regional, and local substantive requirements. The SCA may include associated facilities, including, among other things, pipelines, roads, and transmission lines. The PPSA supersedes individual state, regional, and local agency permitting processes under Section 403.511, F.S., and certification is in lieu of separate state, regional, and local permits. Certification under the PPSA does not replace any licenses or permits required under federal law, such as New Source Review (NSR), Prevention of Significant Deterioration (PSD), and National Pollutant Discharge Elimination System (NPDES) permits from FDEP or Section 404 permits from the U.S. Army Corps of Engineers (USACE).

Under the PPSA, the SCA is prepared by the applicant and filed with FDEP, with copies to other reviewing agencies. FDEP administers the processing of the SCA under the PPSA pursuant to Section 403.504(5), F.S. The final certification (i.e., approval) is issued by Florida's Governor and Cabinet sitting as the Siting Board or by FDEP.

The purpose of this SCA is to obtain certification (i.e., approval) for the location, construction, operation, and maintenance of the proposed CCC Project, including associated on- and off-Site facilities, on a Site adjacent to DEF's existing CREC. As detailed in Section 1.2, portions of the CREC property are certified under the PPSA and are, therefore, subject to general and specific conditions of certification. Because the proposed CCC Project Site is located adjacent to the existing CREC property, including certified areas at CREC, DEF is requesting that the CCC Site be considered part of CREC and that the CREC COCs be modified as necessary to accommodate the proposed Project.

This SCA demonstrates that the proposed CCC Project will comply with applicable agency nonprocedural requirements as defined in Section 403.503(21), F.S.