DEFINITIONS

Access roads. Roads that will be constructed specifically to connect the proposed Levy Nuclear Plant Units 1 and 2 (LNP) site and appurtenant facilities with area highways.

Appurtenant facilities. The appurtenant facilities include the following site components: the pipeline corridors, transmission line corridors, site access roads and heavy haul road, barge slip, and the intake structure and pumphouse.

Blowdown pipelines. The two pipes, one per unit, which will carry blowdown from the cooling towers to the proposed discharge location at the Crystal River Energy Complex (CREC). These two pipes will follow a pipeline corridor located in Levy and Citrus counties to reach the discharge location.

Cooling water intake structure (CWIS). The CWIS will consist of the intake structure, vertical bar screens, traveling screens, pumps, and pumphouse. The LNP CWIS will be located on the north bank of the Cross Florida Barge Canal (CFBC), just downstream of the Inglis Lock.

Cross Florida Barge Canal (CFBC). An incomplete cross-Florida waterway. The westernmost portion of this waterway is the dredged canal that extends from the Inglis Lock at Lake Rousseau into the Gulf of Mexico. Originally a federal project, most CFBC lands, including those in the LNP project vicinity, have been ceded to the State of Florida and incorporated into the Marjorie Harris Carr Cross Florida Greenway (CFG) and Conservation Area.

Emergency Planning Zone (EPZ). As defined in 10 Code of Federal Regulations (CFR) 50.33, the EPZ is an area that includes the plume exposure pathway EPZ for nuclear power reactors, consisting of an area with an approximate 16-kilometer (km) (10-mile [mi.]) radius, and the ingestion pathway EPZ, consisting of an area with an approximate 80-km (50-mi.) radius.

Exclusion Area Boundary (EAB). The area surrounding a reactor, in which the reactor licensee has the authority to determine all activities, including the exclusion or removal of personnel and property from the area. The area is represented by the union of two circles, each with a radius of 1340 meters (m) (4396 feet [ft.]), centered on the reactor building of the units.

Florida Power Corporation doing business as Progress Energy Florida, Inc. (PEF). The LNP Combined License (COL) applicant and owner.

Heavy haul road. Road that will be constructed specifically to transport equipment and materials north from the termination of the barge slip access road at County Road 40 to the LNP site.

Inglis Lock Bypass Channel. A man-made bypass channel located just north of the CFBC. When the CFBC was constructed and the original Withlacoochee River channel was bisected, the bypass channel was constructed to carry downstream flows from Lake Rousseau to the natural Withlacoochee River channel.

Lake Rousseau. A man-made lake located on the border of Levy, Citrus, and Marion counties. The lake is fed by the Withlacoochee River and has a surface area of 1497 hectares (ha) (3700 acres [ac.]) (Figure 1.1-1).

Pipeline corridors. A makeup water pipeline and corridor will connect the CFBC and the LNP. A blowdown pipeline and corridor will connect the LNP to the CREC.

Plant site. The primary location of the two reactors and ancillary power production support facilities. The plant site will be comprised of approximately 121 ha (300 ac.) near the center of the LNP site.

Proposed Levy Nuclear Plant Unit 1 (LNP 1) and proposed Levy Nuclear Plant Unit 2 (LNP 2). LNP 1 is the southernmost reactor and LNP 2 is the northernmost reactor.

Proposed Levy Nuclear Plant Units 1 and 2 (LNP) site. An irregularly shaped area that is approximately 1257 ha (3105 ac.) in size. The LNP site is located within Levy County (Figure 1.1-1).

Region. The area between a 9.7-km (6-mi.) radius and an 80-km (50-mi.) radius from the centerpoint of the LNP power block footprint. The LNP site is located in a rural, sparsely populated area.

Through-screen intake velocity. The velocity of water passing through the center of the $^{3}/_{8}$-inch (in.) mesh screen openings in the CWIS traveling screens during facility normal intake operations.

Transmission lines. High-voltage lines carrying electrical power generated at the LNP to high-voltage substations. Transmission lines will be located in proposed and existing transmission line corridors.

Vicinity. The area from the centerpoint of the LNP power block footprint to a 9.7-km (6-mi.) radius. The vicinity includes a much larger tract of land than the LNP site. The vicinity is located within Levy, Citrus, and Marion counties.

2.0 ENVIRONMENTAL DESCRIPTION

This chapter of the Environmental Report (ER) describes the existing environmental conditions at and around the proposed Levy Nuclear Plant Units 1 and 2 (LNP) site. The environmental conditions described in this chapter provide sufficient details to identify those environmental resources that have the potential to be affected by the construction and operation of the proposed units. This information forms the basis for assessing the potential effects from the proposed activities as discussed in ER Chapters 4, 5, 6, and 10.

The pertinent terms and definitions used for discussion and consistency within these chapters are provided in ER Chapter 1.

This chapter is divided into the following eight sections:

- ER Section 2.1 — Station Location
- ER Section 2.2 — Land
- ER Section 2.3 — Water
- ER Section 2.4 — Ecological Description
- ER Section 2.5 — Socioeconomics
- ER Section 2.6 — Geology
- ER Section 2.7 — Meteorology and Air Quality
- ER Section 2.8 — Related Federal Project Activities

2.1 STATION LOCATION

This section describes the geographical location of the station, which is proposed to be located near the southern border of Levy County, Florida (Figures 1.1-1 and 2.1-1). Table 2.1-1 shows the coordinates of the proposed Levy Nuclear Plant Units 1 and 2 (LNP 1 and LNP 2), which are located within the following Sections, Township, and Range: Sections 7, 17, 18, 19, 20, 29, and 30; Township 16 S, Range 17 E. LNP 1 and LNP 2 are designed to be situated near the center of the LNP site, which is 1257 hectares (ha) (3105 acres [ac.]) in area. LNP 1 will be located immediately south of LNP 2 (Figure 2.1-2) (Reference 2.1-001).

Figure 1.1-1 of ER Chapter 1 identifies readily recognized landmarks such as the Crystal River Energy Complex (CREC), which is located approximately 15.5 kilometers (km) (9.6 miles [mi.]) south of the plant. The Withlacoochee River, Inglis Bypass Channel, and the Cross Florida Barge Canal (CFBC) are located approximately 5.4 km (3.4 mi.), 5.2 km (3.2 mi.), and 5.2 km (3.2 mi.)

south of the site, respectively. The City of Gainesville, which is located approximately 71.1 km (44.2 mi.) northeast of the LNP, and the City of Ocala, which is located approximately 48.4 km (30.1 mi.) east of the LNP, are the nearest major cities. The towns closest to the site are Inglis and Yankeetown, which are located 6.6 km (4.1 mi.) and 12.9 km (8.0 mi.) southwest of the site, respectively.

The LNP site is approximately 4.8 km (3.0 mi.) north of Lake Rousseau and 12.8 km (7.9 mi.) east of the Gulf of Mexico. The Withlacoochee River is the only major river in the site vicinity; other local waterways include Spring Run and Ten Mile Creek to the northwest of the LNP site (Figure 2.1-1). U.S. Highway 19 (US-19) runs generally in the north to south direction along the northwestern portion of the LNP site and intersects with County Road 40 (CR-40) to the west in the Town of Inglis (Figure 2.1-1).

The LNP station is irregularly shaped and will be comprised of the following major site-related features (Figure 2.1-2):

- LNP 1 and LNP 2 and associated cooling towers.
- Three stormwater retention ponds (A, B, and C [C1 and C2]).
- On-site portion of the blowdown pipeline corridor.
- 500-kilovolt (kV) switchyard.
- Switchyard connection corridor.
- On-site portion of the transmission line corridor.
- On-site portion of two access roads.
- On-site portion of the heavy haul road.
- Meteorological tower.

Figure 3.1-3 in ER Chapter 3 provides a conceptual, perspective view of the major components listed above looking south on the LNP site.

These habitats and their presence on and in the vicinity of the LNP site are described in the following subsections.

2.4.1.1.5.1 Wildlife Sanctuaries, Refuges, and Preserves

Levy County, along with adjacent Gulf Coast counties, is an area known as Florida's Nature Coast, valued for its vast natural areas, water, wildlife resources, and scenic beauty. Several conservation areas are located in the vicinity of the LNP site. Figure 2.4-7 presents the natural resource areas, which include the following:

- Goethe State Forest
- Waccasassa Bay Preserve State Park
- Big Bend Seagrasses Aquatic Preserve
- Crystal River State Buffer Preserve
- CFG State Recreation and Conservation Area

No unique or rare habitats or habitats with priority for protection were identified on the site. However, some of these areas occur in the vicinity, such as the Withlacoochee River, which is located approximately 2 mi. south of the LNP site (Figure 2.4-7) and designated by the State of Florida as an OFW (Reference 2.4-022). Wildlife sanctuaries, refuges, and preserves associated with the transmission corridors are also discussed in ER Subsection 2.2.2.4.

Wetlands are defined jointly by the USACE and the U.S. Environmental Protection Agency (USEPA) as the following (Reference 2.4-023):

> Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetlands include swamps, marshes, bogs, and similar areas. The USACE currently uses the *Corps of Engineers Wetlands Delineation Manual* to establish jurisdiction under Section 404 of the CWA (Reference 2.4-023). The State of Florida uses the *Florida Wetlands Delineation Manual* (Reference 2.4-024) to determine wetland boundaries pursuant to Chapter 62-340, F.A.C. *Delineation of the Landward Extent of Wetlands and Surface Waters*.

Wetlands in the study area were delineated in accordance with the definitions and routine methodologies described in the manuals listed above. The limits of jurisdictional wetland boundaries are based on the dominance of hydrophytic vegetation, the presence of hydric soils, and evidence of wetland hydrology (Reference 2.4-023).

Wetlands on and in the vicinity of the LNP site were initially identified and characterized through review of agency databases, published documents, and subsequently through field delineation. Formal jurisdictional determinations of wetlands on the LNP site by the FDEP Wetland Evaluation and Delineation Section are ongoing.

The most common wetland systems on-site are cypress swamps, cypress-hardwood mixed swamps, and freshwater marsh. These and other wetland systems on the site are described in ER Subsection 2.4.1.1. There were no USFWS-designated critical habitats for protected species found on the LNP site.

2.4.1.1.6 Preexisting Environmental Stresses

In addition to feral hogs (see ER Subsection 2.4.1.1.4), the major preexisting environmental stresses on the LNP site are associated with the prolonged silvicultural operations that re-shaped the local landscape and converted diverse native vegetative communities to even-aged, monospecific planted pine stands. Earthwork can alter the soil substrate, distort local drainage patterns, and profoundly transform natural communities.

The predominant forces shaping the succession of vegetative communities in pine plantations are fire and logging. Fire suppression encourages the proliferation of dense understory vegetation and the buildup of peat, which can fill what were formerly open water areas. Fire suppression also facilitates succession from cypress swamps to hardwood swamps (Reference 2.4-007). Heavy equipment may compact and damage wetland soils, and logging directly alters the vegetative composition of forests and changes drainage patterns through the construction of dikes, roads, and bedding (Reference 2.4-012). Clear-cutting can exacerbate localized flooding, at least temporarily, through the loss of transpiring vegetation (Reference 2.4-025).

2.4.1.2 Associated Facilities

The facilities associated with the LNP site comprise the following:

- Access roads.
- Heavy haul road and barge slip access road.
- Barge slip.
- Makeup and blowdown pipeline corridor.
- Transmission line corridors.

The access roads, heavy haul road, barge slip access road, barge slip, makeup and blowdown pipelines, and the portion of the transmission corridor north of CR-40 are identified collectively as early infrastructure facilities, because they will be constructed in advance of the LNP generating facilities. Locations for the early infrastructure facilities are depicted on Figure 2.4-8 and land cover classes are listed in Table 2.4-10. Transmission corridors are described in ER Subsection 2.2.2. Locations of the transmission corridors (south of CR-40) are depicted on Figure 2.4-9, and land cover classes for the transmission corridors are listed on Table 2.4-11.

2.4.1.2.1 Existing Cover Types

Existing vegetative cover types crossed by the early infrastructure facilities that are described below are based on FLUCCS, as interpreted and mapped by the SWFWMD (Figure 2.4-8) (References 2.4-003 and 2.4-004). Vegetative cover types crossed by the early infrastructure facilities are described below in order of decreasing prevalence (Reference 2.4-004). Species lists are based on either FLUCCS code descriptions or observations made during field surveys performed by CH2M HILL ecologists between September 2006 and January 2008 (References 2.4-003 and 2.4-004).

2.4.1.2.1.1 Tree Plantations (Code 440)

Tree Plantations represent the largest land area crossed by the early infrastructure facilities. Approximately 135 ha (333 ac.) or 41 percent of the early infrastructure facilities acreage are classified as Tree Plantations. These areas are predominantly planted with slash pine. Understory and groundcover vegetation generally includes gallberry, saw palmetto, sand blackberry, wax myrtle, broomsedge, or blue maidencane.

2.4.1.2.1.2 Open Lands (Rural) (Code 260)

Open Lands (Rural) encompass 40 ha (100 ac.), representing 12 percent of land covered by the early infrastructure facilities. In the areas crossed by early infrastructure facilities, this land cover generally consists of tree plantations that have been clear-cut. Remaining vegetation includes broomsedge, redroot, dog fennel, annual ragweed, or slash pine saplings.

2.4.1.2.1.3 Other Open Lands (Code 190)

Other Open Lands represent nine percent or 31 ha (76 ac.) of land covered by the early infrastructure facilities. Parcels that are undeveloped and are without indicators of the intended land use are generally classified as Other Open Lands. These areas are generally comprised of turf grass or ruderal species such as bahia grass (*Panicum notatum*), dog fennel, or annual ragweed.

2.4.1.2.1.4 Cypress (Code 621)

Cypress swamps encompass approximately 21.96 ha (54.26 ac.), representing seven percent of the total early infrastructure facilities land area. These wetlands are characterized by a dominant canopy cover of pond cypress with a subdominant cover of slash pine, redbay, swamp tupelo, or red maple. The understory and groundcover strata are generally composed of woody or herbaceous vegetation including buttonbush, fetterbush, Virginia willow, lizard's tail, maidencane, cinnamon fern, and Virginia chain fern.

2.4.1.2.2 Important Species

2.4.1.2.2.1 Early Infrastructure Facilities

Field surveys by CH2M HILL ecologists on and in the vicinity of the early infrastructure facilities are ongoing. Recreationally valuable species that were identified during these field surveys included white-tail deer, bobwhite quail, and wild turkey. These species are common in the area. Feral hogs are also widespread, but are considered a nuisance species (Reference 2.4-014).

One active bald eagle nest was identified approximately 1000 m (3281 ft.) west of the proposed heavy haul road area. In addition, an FNAI Occurrence Report generated for the LNP site and vicinity identified several protected species known to occur within the areas surrounding the early infrastructure facilities (see Tables 2.4-6, 2.4-7, 2.4-8, and 2.4-9) (Reference 2.4-013). Although the report identifies no documented occurrences of protected species on early infrastructure sites, some areas were identified as having the potential to provide habitat for protected species including the gopher tortoise, gopher frog, red-cockaded woodpecker, bald eagle, and sandhill crane.

2.4.1.2.2.2 Transmission Corridors

2.4.1.2.2.2.1 500-kilovolt (kV) transmission lines from the LNP to proposed Citrus Substation (LPC)

Listed species refers to those plant and animal species that are designated by the USFWS as threatened, endangered, or of special concern (Reference 2.4-026). Wildlife habitat in the area of the LPC corridor has been altered significantly from its natural state for mixed forest land, cropland and pasture, roadways, and residential use. However, several wildlife species do utilize the area within and adjacent to the LPC corridor for foraging and cover. Wildlife resources were evaluated through site reconnaissance, literature reviews, and availability of suitable habitat. In addition, the FNAI Geographic Information System (GIS) database of documented occurrences of listed species was queried. Wildlife observations recorded during site reconnaissance activities conducted in November 2007, including direct visual observation, calls, tracks, scat, burrows, or other signs, and those wildlife species (including listed species) that are reasonably expected to inhabit the corridor based on habitats present, are presented in Appendix 2.4-1.

of these and other listed species that may reasonably be expected to inhabit the LCFS corridor.

According to FNAI data (Reference 2.4-013), several documented occurrences of listed animal species occur within or adjacent to the LCFS corridor:

- Bald eagle: Identified 366 m (1200 ft.) east of the westernmost portion of the LCFS corridor, within a cropland and pasture area.

- Florida pine snake: Classified as a species of special concern by the FFWCC. Identified within the LCFS corridor near residential area intermixed with deciduous forest lands, about ½-mile north of the North Deltona Boulevard and North Lecanto Highway (CR-491) intersection.

- Sherman's fox squirrel: Identified by FNAI within the LCFS corridor, approximately 183 m (600 ft.) southwest of CR-39 in an area of cropland and pasture.

- Florida scrub jay: Identified by FNAI approximately 1800 ft. south of the LCFS corridor, in an area of deciduous forest land adjacent to the large nonforested wetland southwest of the intersection of SW Highway 200 and CR-39; identified by FNAI within the LCFS corridor, approximately 61 m (200 ft.) northeast of CR-39 in deciduous forest land habitat.

- Gopher tortoise: Identified by FNAI within the LCFS corridor, south of the CFBC in an area of deciduous forest land; identified by FNAI within the LCFS corridor, west of SR-495 in a cropland and pasture area; identified by FNAI within the LCFS corridor, southeast of the intersection of SR-44 and US-301 in a non-forested wetland.

- Little blue heron: Classified as a species of special concern by the FFWCC; identified by FNAI within the LCFS corridor, north of SR-44 in an area of deciduous forest land.

Non-listed wildlife observed during field reconnaissance or expected to occur based upon available habitat include common species typical of central Florida, such as white-tailed deer, eastern cottontail, raccoon, opossum, gray squirrel, southeastern pocket gopher (*Geomys pinetis*), feral pig, nine banded armadillo, and common bird species such as black vulture, red-tailed hawk, red-shouldered hawk, wild turkey, great blue heron, American coot, common moorhen, great egret, red-winged blackbird, cattle egret, northern mockingbird, eastern phoebe (*Sayornis phoebe*), eastern meadowlark (*Sturnella magna*), and mourning dove.

2.4.1.2.3 Important Terrestrial Habitats

2.4.1.2.3.1 Early Infrastructure Facilities

Wildlife sanctuaries, refuges, and preserves located in the vicinity of the early infrastructure facilities include the following:

- Goethe State Forest
- CFG State Recreation and Conservation Area

The Goethe State Forest is located just north of the proposed plant location, while a portion of the makeup and blowdown pipe corridor would be located within the CFG State Recreation and Conservation Area. The CFG State Recreation and Conservation Area is owned by the State of Florida and is managed by the FDEP Office of Greenways and Trails. As described in Section 1.2 and Table 1.2-1, FDEP will coordinate approval for construction and operation in lands owned and/or managed by the state.

No unique or rare habitats, habitats with priority for protection or USFWS-designated critical habitats for protected species were identified at the early infrastructure facility sites.

2.4.1.2.3.2 Transmission Corridors

Wildlife sanctuaries, refuges, and preserves associated with the transmission corridors are discussed in ER Subsection 2.2.2.4.

2.4.2 AQUATIC ECOLOGY

Aquatic ecological resources were evaluated through published reports, consultation with agencies, and site studies. Descriptions of the aquatic habitats in the vicinity of the LNP site are provided in ER Subsection 2.4.2.1, physicochemical characteristics of the aquatic environment are provided in ER Subsection 2.4.2.2, descriptions of biological characteristics are provided in ER Subsection 2.4.2.3, and a description of biological and anthropogenic stressors is provided in ER Subsection 2.4.2.4. A biological characterization of the CREC discharge area is provided in ER Subsection 2.4.2.5.

2.4.2.1 Aquatic Habitat Description

The CFBC was authorized in 1942 but was terminated in 1971 after one-third of the canal had been completed. The segment of the CFBC that is associated with the LNP site falls within a completed portion of the canal, extending from Inglis Lock and the Inglis Dam at the western end of Lake Rousseau westward into the Gulf of Mexico. This reach of the CFBC was excavated to 27.0 km (16.8 mi.), which extends from land into the Gulf. The material dredged from the land-cut portion was placed on both sides of the canal, while material excavated from the Gulf of Mexico was placed in multiple spoil piles along the south side of the

Table 2.4-10
Land Cover Class Composition at the Associated Facilities

FLUCCS Code	Classification	Early Infrastructure Facilities Area (ac.)	Percentage of Total Early Infrastructure Area[a]
440	Tree Plantations	391.2	54.0
620	Wetland Coniferous Forests	83.6	11.5
190	Open Land	48.1	6.6
260	Other Open Lands (Rural)	45.7	6.3
640	Vegetated Non-Forested Wetlands	31.4	4.3
630	Wetland Coniferous Forests	30.4	4.2
410	Upland Coniferous Forests	27.8	3.8
430	Upland Hardwood Forests, Coniferous	24.1	3.3
830	Utilities	14.5	2.0
330	Mixed Rangeland	10.0	1.4
810	Transportation	5.4	0.7
160	Extractive	4.6	0.6
320	Shrub and Brushland	3.2	0.4
510	Streams and Waterways	2.5	0.3
530	Reservoirs	2.3	0.3
Total		**724.8**	

Notes:

a) Includes only the portion of the transmission corridor north of CR-40.

ac. = acre
FLUCCS = Florida Land Use and Cover Classification System

Source: Reference 2.4-003

Table 2.4-11 (Sheet 1 of 2)
Acreage of Vegetative Communities within each of the Preferred Corridors

		Acreage						
FLUCCS Code	FLUCCS Description	500 kV – Levy Nuclear Plant – Proposed Citrus Substation	230 kV – Crystal River Energy Complex – Proposed Citrus Substation	69 kV - Levy Nuclear Plant Administration Substation	500 kV - Levy Nuclear Plant - Proposed Central Florida South Substation	500 kV - Preferred Corridor A	500 kV - Alternative Alignment A-1	500 kV - Preferred Corridor B
210	Cropland and Pastureland	630	244	----	5,580	1,251	256	484
260	Other Open Lands (Rural)	141	0.4	131	581	365	----	236
310	Herbaceous Dry Prairie	----	----	----	16	13	----	5
320	Shrub and Brushland	40	12	6	218	225	----	176
330	Mixed Rangeland	----	----	----	10	----	----	----
410	Upland Coniferous Forest	78	----	68	158	336	----	39
411	Pine Flatwoods	73	----	----	159	97	----	23
412	Longleaf Pine - Xeric Oak	31	89	----	614	6,292	261	3,699
420	Upland Hardwood Forests	----	----	----	62	26	----	11
434	Hardwood-Conifer Mixed Forests	1,579	679	108	3,752	843	----	122
440	Tree Plantations	1,047	256	600	1,157	1,029	----	179
441	Coniferous Plantations	----	----	----	46	----	----	----
510 [(a)]	Streams and Waterways	60	----	----	65	60	----	----
520	Lakes	12	0.5	----	83	16	----	49
530	Reservoirs	6	2	1	42	12	----	4
615	Stream and Lake Swamps	56	34	----	682	54	----	5
617	Mixed Wetland Hardwoods	----	----	----	1	----	----	----

and the project is tentatively scheduled to be complete within two years thereafter. The two-lane segment of US-19 that bridges the CFBC is located in the Town of Inglis and serves as a major thoroughfare from residential areas in Citrus County to the LNP site (Reference 2.5-043).

The Suncoast Parkway is part of the State of Florida's Turnpike system and serves as an alternative north-south route through Florida's west coast (Reference 2.5-077). A northward expansion of the Suncoast Parkway into Citrus County is currently in the design phase and construction is scheduled to begin sometime after 2012. Construction is expected to take 3 to 4 years.

Greyhound and Trailway Bus Lines provide bus service to Levy County. These services include nine northbound and eight southbound buses daily (Reference 2.5-044). Freight service is also provided on both lines (Reference 2.5-044). Greyhound Bus Lines services one depot in Fanning Springs (Reference 2.5-044). Flag stops are serviced by both Greyhound and Trailways Bus Lines at Chiefland, Bronson, Williston, Lebanon Station, Otter Creek, and Gulf Hammock (Reference 2.5-044). SunTran provides bus services for the City of Ocala in Marion County, and Marion County Transit Services provides public transportation services by appointment only for its disadvantaged citizens (Reference 2.5-078). The Citrus County Transit System provides bus service to Citrus County residents (Reference 2.5-079). Transit bus stations are located in Beverly Hills, Crystal River, Dunnellon, Floral City, Hernando, Homosassa, Inverness, Lecanto, and Ozello/ Red Level/Citronelle (Reference 2.5-079). The Ozello/Red Level/Citronelle transit station is currently the closest to the LNP site (Reference 2.5-079). Intercity bus service between Levy, Marion, and Citrus counties is provided by Greyhound Bus Lines (Reference 2.5-080).

Two railroad lines are located within the 16-km (10-mi.) vicinity of the LNP site. The lines include an abandoned track with only the rail bed remaining, which is located northeast of the site and north of SR-336, and an active railroad line operated by CSX, which is located southeast of the LNP site. The CSX line runs from the City of Crystal River northeast to the City of Dunnellon.

In accordance with Regulatory Guide 1.206, further analysis of the CSX rail segment was not conducted, as it lies outside of the 8-km (5-mi.) radius of the LNP site.

2.5.2.10 Distinctive Communities

The population in the region is fairly diverse, and while predominantly Caucasian, includes a variety of other ethnic groups. ER Subsections 2.5.1 and 2.5.4 discuss the population in the region in more detail. As stated in ER Subsection 2.5.3.5, PEF is not aware of any Native American tribes that have links to the site. Efforts have been made to contact tribes that potentially have links to the site. The primary tourist attractions (and visual resources) in the vicinity are the Goethe State Forest and the CFG, which are described in detail in ER Subsection 2.5.2.7. ER Subsection 2.5.3.4.1 describes two historic districts in Marion County that could be considered distinctive.

2.5.3 HISTORIC PROPERTIES

Historic properties include districts, sites, buildings, structures, and objects that represent past human activities. Significant cultural resources, or historic properties, include those resources that are listed, or considered eligible for listing, in the National Register of Historic Places (NRHP). The criteria for NRHP eligibility are set forth in 36 CFR 60.4:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in historic properties that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> > (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
> > (b) that are associated with the lives of persons significant in our past; or
> > (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> > (d) that have yielded, or may be likely to yield, information important in prehistory or history.

In addition, to qualify for listing in the NRHP, an historic resource usually must be at least 50 years old. Archaeological and historical investigations were carried out between May 2007 and February 2008 at the LNP site, along the proposed transmission line corridor immediately south of the LNP site, along access roads, and along the proposed route of the blowdown pipeline in Levy and Citrus counties.

2.5.3.1 Cultural Resource Investigations at the LNP Site

2.5.3.1.1 LNP Site Field Survey Methodology

Based on consultations with the Florida State Historic Preservation Officer (SHPO), which are further addressed in ER Section 2.5.3.3.1, two Areas of Potential Effect (APE) were agreed upon; one for archaeological resources and one for standing structures. The APE for archaeological resources encompassed areas of proposed construction and ground disturbance within the LNP site, including building locations and support facilities, proposed access roads, and transmission lines, as well as existing access roads on the site (see Figure 2.5-11). The APE for standing structures encompassed a 1.6-km (1-mi.) radius from the LNP site (see Figure 2.5-11). The surveys were conducted in two phases. The initial surveys covered 121.4 ha (300 ac. [1.2 km^2]) in the vicinity of the LNP site. The second phase of surveys completed the remaining areas within each respective APE.

Since the ROWs for the remaining proposed off-site transmission corridors have not been finalized, historic properties within 1.9 km (1.2 mi.) of the proposed transmission ROWs could not be definitively determined. Instead, a desktop survey was conducted on resources within or adjacent to the LPC, LCR, and LCFS corridors. Based on this detailed desktop survey of FMSF data, the resources within or adjacent to the corridors include 54 previously recorded archaeological sites, three previously recorded historic structures, one previously recorded historic cemetery, and one previously recorded resource group. These resources along the proposed off-site transmission corridors are described in Table 2.5-36 (Reference 2.5-093). Although the majority of these resources are not designated as NRHP-eligible in the FMSF, the presence of these resources indicates the potential for additional unrecorded cultural resources to be present.

2.5.3.4.3 Properties within 2 Km (1.2 Mi.) of Off-Site Areas

Blowdown Pipeline. A review of FMSF data showed 59 previously recorded archaeological sites within a 2-km (1.2-mi.) radius of the proposed off-site blowdown pipeline. The Levy County sites included three determined ineligible for listing in the NRHP and one with insufficient information to make an eligibility determination. The 55 previously surveyed sites in Citrus County included one determined ineligible for listing in the NRHP by the SHPO, two sites with insufficient information to make a determination, 39 recommended ineligible by the surveyor, but not yet evaluated by the SHPO, seven not evaluated by the surveyor nor the SHPO, and six sites recommended eligible for listing in the NRHP by the surveyor, but not evaluated by the SHPO. None of these six sites are located within the APE for archaeological resources. It is customary not to publish the locations of archaeological sites due to the potentially sensitive nature of the artifacts. (Reference 2.5-093)

Further review of FMSF records showed no previously surveyed structures, bridges or cemeteries within a 2-km (1.2-mi.) radius of the proposed blowdown pipeline. There are 11 previous surveys that are partially within the 2-km (1.2-mi.) radius. Of those, four are in Levy County and seven are in Citrus County. (Reference 2.5-093)

2.5.3.5 Traditional Cultural Properties

PEF is not aware of any traditional cultural properties of any Native American tribes that have links to the site. Efforts have been made to contact tribes that potentially have links to the site.

2.5.4 ENVIRONMENTAL JUSTICE

Environmental justice refers to a federal executive order in which federal actions should not result in disproportionately high and adverse impacts to low income or minority populations. Executive Order 12898 directs federal agencies to consider environmental justice by identifying and mitigating disproportionately high and adverse human health and environmental effects. This includes the interrelated social and economic benefits of their programs, policies, and activities on low income and minority populations.

This subsection follows the methodology of NUREG-1555, Revision 0, described in ER Subsection 2.5.4.1 below to identify and locate “minority” and “low-income” communities within 80 km (50 mi.) of the LNP site. This section, along with ER Subsections 4.4.3 and 5.8.3, details the studies that are used to define these populations of interest. Furthermore, the environmental justice review has three goals:

- Define racial, ethnic, and special characteristics of the group that could be affected by any adverse environmental impacts from the facility.
- Define the income characteristics of the populations that could be affected by any adverse environmental impacts from the facility.
- Describe resources, customs and practices, circumstances of living (e.g., migrant labor), or preconditions (e.g., pre-existing health conditions or access to particular facilities or locations) of particular minority or low income populations that may make them likely to experience disproportionate environmental impacts from the proposed project.

2.5.4.1 Methodology

The 2004 NRC’s “Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues” defines a “minority” population as: American Indian or Alaskan Native; Asian; Native Hawaiian or other Pacific Islander; Black or African-American; other single races; multi-racial; and Hispanic ethnicity.

The guidance indicates that a minority population exists if either of the following two conditions exists:

- The minority population in the census block group or environmental impact site exceeds 50 percent.

Table 2.5-36 (Sheet 4 of 4)
Previously Recorded Sites within/adjacent to the Proposed Off-Site Transmission Corridors

FMSF#	Resource Name	County	Resource Type	NRHP Evaluation [a]
8SM100	Russell Stover East	Sumter	Archaeological Site / Pre-Columbian Non-Quarry Lithic Reduction Site	Not Evaluated
8SM107	Wildwood	Sumter	Archaeological Site / Pre-Columbian Campsite	Ineligible
8SM108	DH	Sumter	Archaeological Site / Pre-Columbian Site	Ineligible
8SM109	John Simpson	Sumter	Archaeological Site / Pre-Columbian Site	Ineligible
8SM128	West Pasture	Sumter	Archaeological Site / Seminole (1716 - present) Homestead; Pre-Columbian Habitation	Potentially Eligible
8SM129	East Pasture	Sumter	Archaeological Site / Middle Archaic Campsite	Ineligible
8SM130	Muldrews	Sumter	Archaeological Site / Pre-Columbian Lithic / Ceramic	Not Evaluated
8SM131	Edwards	Sumter	Archaeological Site / Pre-Columbian Campsite	Not Evaluated
8SM249	1016 South Main Street (US 301)	Sumter	Historic Structure	Ineligible
8SM402	Bigham Ranch	Sumter	Archaeological Site / Pre-Columbian Campsite	Ineligible
8SM446	Sumter II	Sumter	Archaeological Site / Pre-Columbian Campsite	Ineligible
8SM473	Seaboard Air Line Railroad	Sumter	Historic Structure / Twentieth Century-American Historic Rail Line	Insufficient Information for Evaluation
8SM497	CSX Railroad	Sumter	Archaeological Site / Twentieth Century-American Railroad Corridor	Ineligible

Notes:

a) As required in the FMSF, some previously evaluated sites may require re-evaluation.

FMSF = Florida Master Site File

Source: Reference 2.5-099

Table 2.5-37 (Sheet 1 of 4)
Surveyed and Historic Properties within a 2-Km (1.2-Mi.) Radius of Off-Site Areas

Site ID#	Site Name	County	Property Type	Status

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