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May 12, 2009

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC
William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019
AP1000 Combined License Application for the
William States Lee III Nuclear Station Units 1 and 2
Response to Request for Additional Information
Ltr# WLG2009.05-02

Reference: Letter from J.M. Muir (NRC) to B.J. Dolan (Duke Energy), *Request for Additional Information Regarding the Environmental Review of the Combined License Application for William States Lee III Nuclear Station, Units 1 and 2*, dated August 21, 2008

Letter from B.J. Dolan to Document Control Desk, Duke Energy Carolinas, LLC, William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019 AP1000 *Combined License Application for the William States Lee III Nuclear Station Units 1 and 2, Response to Request for Additional Information*, Ltr# WLG2008.11-28, dated November 25, 2008

This letter provides supplemental information to the Duke Energy response to the Nuclear Regulatory Commission's (NRC) request for additional information (RAI) included in the referenced letter:

RAI 68, Terrestrial Ecology

Responses to these NRC requests are addressed in the enclosures which also identify any associated changes that will be made in a future revision of the William States Lee III Nuclear Station application.

D093
NRO

If you have any questions or need any additional information, please contact Peter S. Hastings, Nuclear Plant Development Licensing Manager, at 980-373-7820.

Bryan J. Dolan
Vice President
Nuclear Plant Development

Enclosure:

1) Response to RAI 68, Terrestrial Ecology

AFFIDAVIT OF BRYAN J. DOLAN

Bryan J. Dolan, being duly sworn, states that he is Vice President, Nuclear Plant Development, Duke Energy Carolinas, LLC, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this supplement to the combined license application for the William States Lee III Nuclear Station and that all the matter and facts set forth herein are true and correct to the best of his knowledge.

Bryan J. Dolan

Subscribed and sworn to me on May 12, 2009

Notary Public

My commission expires: April 19, 2010

SEAL

xc (w/o enclosure):

Loren Plisco, Deputy Regional Administrator, Region II
Stephanie Coffin, Branch Chief, DNRL
Robert Schaaf, Branch Chief, DSER

xc (w/ enclosure):

Linda Tello, Project Manager, DSER
Brian Hughes, Senior Project Manager, DNRL

Lee Nuclear Station Response to Request for Additional Information (RAI)

RAI Letter Dated: January 21, 2009

Reference NRC RAI Numbers: ER RAI 68

NRC RAIs: What is the final routing of the rail spur? What associated consultation has been conducted with state and federal agencies?

Duke Energy Response:

This response provides supplemental information to a previous response submitted November 25, 2008 (Letter No. WLG2008.11-28, Accession No. ML083520465).

In 2008, Duke Energy completed a biological evaluation of the rail corridor (Attachment 68-1). A copy of the evaluation was transmitted to the U.S. Fish and Wildlife Service (Attachment 68-2). On April 1, 2009 the U.S. Fish and Wildlife Service provided a letter of concurrence with the findings of the evaluation indicating that construction of the rail line would not impact any federally listed threatened or endangered species (Attachment 68-3).

Associated Revisions to the Lee Nuclear Station Combined License Application:

None

Associated Attachments:

Attachment 68-1	Biological Evaluation and Potential Jurisdictional Waterbody Identification and Delineation, Proposed Rail Line Construction Corridor, Cherokee County, South Carolina
Attachment 68-2	Letter from T. Bowling (Duke Energy) to L. Zimmerman (U.S. Fish and Wildlife Service), March 10, 2009
Attachment 68-3	Letter from T. Hall (U.S. Fish and Wildlife Service) to T. Bowling (Duke Energy), April 1, 2009

Enclosure No. 1
Duke Letter Dated: May 12, 2009

Attachment 68-1

Biological Evaluation and Potential Jurisdictional Waterbody Identification and Delineation, Proposed Rail Line Construction Corridor, Cherokee County, South Carolina

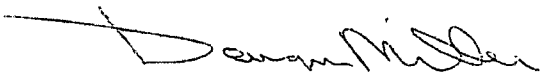
BIOLOGICAL EVALUATION
and
POTENTIAL JURISDICTIONAL WATERBODY IDENTIFICATION AND DELINEATION

Proposed Rail Line Construction Corridor
Cherokee County, South Carolina
Enercon Project Number: DUKCORP014

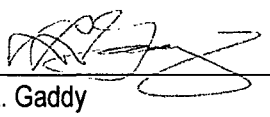
Prepared by:

ENERCON SERVICES, INC.
6525 N. Meridian Ave, Suite 400
Oklahoma City, OK 73116

Prepared by:

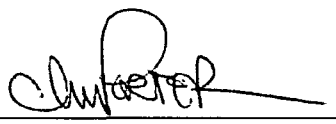


Dewayne Miller
Biologist

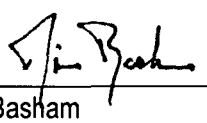


Lacy L. Gaddy
Biologist

Reviewed by:



Clint M. Porter
Project Manager



Tim Basham
Manager, NEPA Services

November, 2008

Biological Evaluation
and
Potential Jurisdictional Waterbody Identification and Delineation

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Executive Summary

- Duke Energy Carolinas, LLC (Duke) plans to construct a railroad connecting a southern rail line to the William States Lee III Nuclear Station site. Most of the proposed construction will occur along an abandoned railway corridor originally cleared for the Cherokee Nuclear Station. Approximately 1,300 feet of the project will occur along a new alignment, north of the existing corridor.
- A biological evaluation was performed of the proposed project area, along with identification and delineation of potentially jurisdictional waterbodies.
- Five mapped perennial streams, three mapped intermittent streams, and two unmapped ephemeral drainages were identified along the route of the proposed construction project. No wetlands are located within the proposed project boundaries.
- Construction activities resulting in discharge of dredge or fill materials in any waterbodies will be subject to permitting under Section 404 of the Clean Water Act. Because all stream crossings along the existing rail corridor were previously channelized with culverts, less than 0.5 acre of jurisdictional waters will be affected by the construction. Nationwide Permit #14 (linear transportation projects) will likely cover these activities.
- The existing railroad corridor is an approximately 50-foot wide raised berm free of trees on top with trees and shrubs growing along its slopes. Approximately half of the 1,300-foot realignment area is forested, while the other half extended across paved or maintained yard associated with an ice plant. The general and immediate areas surrounding the project right of way (ROW) are characterized as undeveloped, mixed hardwood forest and industrial development.
- According to the United States Fish and Wildlife Service (USFWS), federally listed species occurring in Cherokee and York Counties include one endangered, one threatened, one candidate, and two special concern species. According to the South Carolina Department of Natural Resources (SCDNR), 12 additional state-listed species occur in Cherokee County.
- According to United States Fish and Wildlife Service (USFWS) and South Carolina Department of Natural Resources (SCDNR) databases, no endangered, threatened, or otherwise noteworthy plant or animal species is known to occur within the Lee Rail Line study area. Furthermore, a field inventory of the study area conducted in July 2008 did not locate any federally or state-listed species. There is, however, a strong likelihood, based on Dorcas (2007) and other ongoing investigations of the general area, that the northern cricket frog (*Acris crepitans*)—state listed as a special concern species—occurs in the Lee Rail Line study area.

1.0 Location and Description of the Proposed Action and Study Area

This evaluation was performed in support of a proposed rail line construction project. The majority of the proposed action will occur on a previously constructed rail line grade extending approximately 34,000 feet southeast from the Southern Railroad near Gaffney to the William States Lee III Nuclear Station. The existing railroad corridor was originally cleared and constructed for the Cherokee Nuclear Station, but the tracks have since been removed, and the corridor was unused at the time of the evaluation. An approximately 1,300-foot section of the project will consist of a new rail line grade to be constructed along a new alignment around the Reddy Ice Plant that occupies a portion of the original corridor. The proposed action extends southeast of Gaffney in Cherokee County, South Carolina. Figure 1 shows the proposed project area.

The proposed construction area is situated within the upper Piedmont Ecoregion of South Carolina. Elevations range from around 800 feet above mean sea level (msl) on ridges to 600 feet msl in creek bottoms. The Piedmont Ecoregion occupies an area between the southern Blue Ridge Escarpment and Sandhills Ecoregion. The northwestern boundary is considered the base of the Blue Ridge Escarpment; the division between the crystalline rocks of the Piedmont and the sedimentary rocks of the sandhills represents the southeastern boundary of the Piedmont Ecoregion. The Piedmont-Sandhill contrast zone is marked in many river channels by shoals and rock ledges that collectively form the fall line. Gently rolling hills with many stream-cut valleys characterize the region, with only a few level floodplains. In the lower Piedmont, there are relatively few sharp breaks in topography, except along major river valleys.

The rolling uplands of the Piedmont landscape are predominantly a mosaic of agricultural land and managed woodland, with a history of clearing and economic use that dates back to early European settlement. Hardwood-dominated forests occupy relatively narrow floodplains and scattered upland sites, while pine and pine-hardwood forests occupy the majority of forested upland sites. The resulting landscape does not constitute suitable habitat for many area-sensitive wildlife species or for species associated with either early succession or late succession conditions. Local hydrology is strongly influenced by the presence of the Broad River to the east.

2.0 Methods and Materials

In early July of 2008, the existing Lee Rail Line corridor and a proposed realignment area were inspected on foot. The existing embankment and a 25-foot buffer (extending out from the bottom of the berm of the rail embankment in both directions)—in essence a 100-foot wide corridor—were considered the study area for this project. In the case of the proposed realignment, the survey line for the realignment was the centerline of a 100-foot study area.

Enercon reviewed topographic maps, National Wetlands Inventory (NWI) maps, Natural Resource Conservation Service (NRCS) soil maps (Figure 4), and hydric soil lists for indications of potential jurisdictional waters in the proposed construction ROW. In addition, field reconnaissance was conducted to evaluate the ROW for the presence of wetland characteristics. Waterbodies identified in the project ROW are illustrated in Figure 2.

All jurisdictional wetlands crossing or abutting the study area were inventoried and mapped. Using Table 1 as a guide, careful searches for listed plants were conducted where suitable habitat was found. Intensive plant inventories were carried out primarily in the rich and low mixed hardwoods habitat, which was widespread in the study area. No surveys were conducted for reptiles and amphibians or bird species.

3.0 Vegetation/Cover Types

Within the existing rail corridor, all trees and shrubs were cleared for the original construction. The existing corridor vegetation is mainly grasses and forbs, with apparent ongoing disturbance from local use by off-road vehicles and pickups. Within the realignment corridor, the western half is forested, while the eastern half extends across paved or maintained yard areas for the ice plant. The forested area of the realignment corridor is mixed hardwood/pine. Vegetation communities along and adjacent to the rail corridor include several cover types: 1) grass-forb; 2) early successional forests; 3) pine forests; 4) pine-mixed hardwood forests; and 5) mixed hardwood forests. All five cover types are discussed below.

1. **Grass-Forb Areas.** These areas were observed along road crossings and the surface of the rail line grade. The dominant species within these areas are exotic and native grasses and other non-woody species. Fescue (*Festuca* sp.), sericea lespedeza (*Lespedeza cuneata*), sunflowers (*Helianthus* spp.), goldenrods (*Solidago* spp.), and other grass species were the most commonly encountered plants in these areas.

2. **Early Successional Forests.** Several areas of selectively harvested forest were found adjacent to the action area. Young pine and mixed hardwood species less than 30 feet tall were dominant.
3. **Pine Forests.** On ridges and upper slopes, planted and natural pine forests were common. Loblolly pine (*Pinus taeda*) was dominant in planted pine forests, Virginia pine (*Pinus virginiana*) was dominant in disturbed natural forest, and shortleaf pine (*Pinus echinata*) was dominant in mature natural pine forests.
4. **Pine-Mixed Hardwood Forests.** Pine-mixed hardwood forests were found on mesic upper slopes and previously disturbed lower slopes. Shortleaf and Virginia pine were found with white oak (*Quercus alba*), southern red oak (*Quercus falcata*), hickories (*Carya* spp.), and other mixed hardwood species.
5. **Mixed Hardwood Forests.** Mixed hardwood forests were found on lower slopes, north-facing slopes, along streams, and in deep ravines. Tulip poplar (*Liriodendron tulipifera*), beech (*Fagus grandifolia*), northern red oak (*Quercus rubra*), dogwood (*Cornus florida*), ironwood (*Carpinus caroliniana*), and sourwood (*Oxydendrum arboreum*) were the dominant tree species.

4.0 Evaluation and Delineation of Wetlands and Riparian Habitats

Section 404 of the federal Clean Water Act (CWA) (EPA, 1972) delegates authority to the United States Army Corps of Engineers (USACE) to issue permits for the discharge of dredged or fill material into waters of the United States, including wetlands. Presently, "waters of the United States," are defined to include (non-wetland "waters") waterways, streams, and (wetland "waters") wetlands that have a connection to navigable waters and tributaries to these waters. In tidal waters, USACE jurisdiction extends to the high tide line. In non-tidal waters, the limits of jurisdiction under the category of "waters" are "ordinary high water marks" (OHWM) identified through field observation of features such as shelving and debris deposits. Where wetlands occur above high tide or high water marks, they are considered "adjacent wetlands" and included within USACE jurisdiction as long as such features are connected to navigable waters or their tributaries.

For the onsite investigation, the criteria used for identification of potential waters of the United States (except for wetlands) included: any drainage areas mapped on the United States Geological Survey (USGS) 7.5-minute series topographic map (Figure 1), any natural or human-made reservoirs, ponds, etc., or any other drainage path with a visibly defined stream bed and banks, dry or wet.

According to the USGS 7.5-minute topographic map and site reconnaissance, five mapped perennial streams (Little London Creek, London Creek, Toms Branch Creek, Peoples Creek, and Furnace Creek), three unnamed, mapped intermittent steams, and two unmapped ephemeral drainages were identified along the existing rail line grade. All waterbodies associated within the existing rail line were previously channelized with culverts. One mapped perennial stream (Peoples Creek) is located along the route of the proposed rail line realignment. There will be no impact to waterbodies associated with the existing corridor. The total area of impact to potential jurisdictional waterbodies within the proposed rail line realignment was estimated at approximately 0.023 acre. Site photographs are included in Exhibit A.

Riparian habitat associated with the streams includes typical bottomland species found within the upper Piedmont Ecoregion. These are tulip poplar, water oak (*Quercus nigra*), sweet gum (*Liquidambar styraciflua),* river birch *(Betula nigra),* sycamore *(Platanus occidentalis),* and ironwood.

The proposed action can likely be completed under the coverage of Nationwide Permit #14 (linear transportation projects). Notification to the USACE, in accordance with General Condition 27 of the nationwide permit, is required for all waterbody impacts exceeding 0.10 acre. Best management practices (BMP), as described in the Duke Energy *Best Management Practices for Stormwater Management and Erosion Control, Policy and Procedures Manual,* will be followed during construction.

The USACE's technical guidelines outlined in the *Corps of Engineers Wetland Delineation Manual* (USACE, 1987) consist of three criteria for delineating a feature as a "wetland": hydrology, soils, and vegetation. Under the procedures and criteria in the manual, a feature must normally satisfy all three criteria to be classified as a wetland. These criteria are further defined as follows:

Wetland **hydrology** exists if an area is inundated either permanently or periodically during the growing season of the prevalent vegetation. Field indicators of wetland hydrology are described in the manual and include flow data, direct observation, and/or indirect evidence of flow or saturation, such as high water marks, drift lines, or sediment deposits.

Wetland **soil** conditions are present if the soils are hydric or have characteristics associated with reducing chemical processes. Field indicators of wetland soil conditions are described in the manual, and include a range of criteria for color and mottling.

Hydrophytic **vegetation** is defined as "macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present." The vegetation criterion is evaluated in terms of presence and dominance of plant species associated, to various degrees, with wetlands. This evaluation is based on regional lists (USFWS, 1996).

For the onsite investigation, the criteria used for identification of wetlands included: hydric soils indicated on county maps and lists or by visual identification; hydrology indicated by visible signs such as standing water, seasonal flooding, watermarks, etc.; and hydrophytic vegetation identified by changes in predominant vegetation where other indicators are present, such as depressions or areas near streams.

According to site reconnaissance and review of available maps, the project area did not exhibit the characteristics necessary for classification as a wetland due to a lack of hydric soils and hydrophytic vegetation. Soils were mapped as a combination of types in Cherokee County, including piedmont red clay loams and sandier loams of the Kings Mountain Belt (Figure 4).

5.0 Threatened, Endangered, and Sensitive Species Evaluation

The Endangered Species Act of 1973 prohibits any person from taking (harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, relocating, or collecting or attempting to engage in any such conduct) any federally listed threatened or endangered species. Significant habitat modification or degradation that results in death or injury to federally protected species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering is also prohibited. Administration and enforcement of the Endangered Species Act (ESA) are the responsibility of the USFWS and the National Marine Fisheries Service.

To evaluate the proposed construction site for the potential presence of protected species, Enercon reviewed the USFWS list for the region and the SCDNR list (for Cherokee County) of candidate species, threatened and endangered species, and designated critical habitat areas (Table 1). Enercon reviewed these sources to determine if the proposed project has the potential for adverse impacts to listed species or their habitat. Based on the habitat descriptions of those species indicated to occur in Cherokee County, a qualitative comparison to the habitat present within the proposed construction area was made during the site inspection. The qualitative comparison was based on regional and local ecological characteristics including soils, terrain, hydrology, and vegetation.

As listed in Table 1, along the rail line itself, "good" habitat only exists for two of the potentially occurring plants—the state-listed Canada moonseed (*Menispermum canadense*) and the southern adder's-tongue fern (*Ophioglossum vulgatum*). Field searches for both of these species were conducted along the rail line in rich and low woods, the preferred habitat for these plants (Radford et al., 1968, and Weakley, 2008, were used for the habitat information and plant discussions herein). Both of these plants, which are

readily identifiable in July when the searches were conducted, are known to occur in the general area of the rail line (in Cherokee County). During our survey, however, we found neither of these species growing in the rail line study area.

Extensive habitat for the loggerhead shrike (*Lanius ludovicianus*) and the American kestrel (*Falco sparverius*) do not occur in the study area. Both are birds of open areas. Habitat for these two species occurs only in the realignment area. Neither species was seen during our inventory of that habitat, which is only marginally good habitat for the two birds. No special inventories were conducted for the southeastern myotis (*Myotis austroriparius).*

The northern cricket frog is known to occur in the general study area (Dorcas, 2007). Although we did not hear the frog calling (this species calls on warm days), it is highly possible that it occurs in ponds along the rail line and in the creek in the realignment area. Because this species prefers open areas, the rail line has probably had only a positive impact on the species. If realignment construction avoids impacting the streamside wetland along Peoples Creek, the proposed project should have no negative impact on this species.

Nodding onion (*Allium cernuum*) occurs widely throughout the United States as far east as New York state and south to Texas and Georgia. Nodding onion is found in dry, open woods on basic circumneutral soils in South Carolina, and requires well-drained soil and sun to partial shade. A population of nodding onion occurs in the vicinity of the existing rail line ROW and realignment corridor in Cherokee County. Marginal habitat for the nodding onion occurs along the proposed existing rail line right of way (ROW) and realignment corridor, but field reconnaissance revealed no occurrence of this species along the proposed rail line ROW and realignment corridor. Because reconnaissance was conducted at a time when the nodding onion would have been in bloom, no further surveys are considered necessary to document the absence of this species in the project area.

Based upon the reconnaissance findings, the proposed project will have no effect on the nodding onion.

Georgia aster (*Symphyotrichum georgianum*) is an herbaceous plant, a perennial which can reach 100 cm in height. The leaves are alternate and can reach 7.5 cm in length. Habitat for the aster is dry, open, calcareous areas and disturbed sites over Mecklenberg and Iredell soils. This species occurs in scattered locations in North Carolina, South Carolina, Georgia, and Alabama. There is marginal habitat for it along the rail line and the realignment area. An October 2008 inventory for the species has been conducted; the addendum report is attached to this text.

Rough sedge (*Carex muricata*) inhabits gravelly seepage in wet rich woods. This large sedge is found primarily in the Blue Ridge province of the Carolinas. A small population is known from east of the Broad River in York County.

Habitat for this species is absent in the realignment area and poor along the rail line. Based upon site reconnaissance, which found no evidence of the species in the project area, the proposed project will have no effect on this species.

Smooth sunflower (*Helianthus laevigatus*) inhabits eastern coastal states from New York to South Carolina. It is a perennial herb/forb that inhabits sparse woodlands, shrublands, and open rock outcrops occurring on ridge and valley shales and Blue Ridge metashales of the central Appalachian Mountains at elevations from 1,000 to 2,600 ft. Habitats generally occur on steep slopes with south to west aspects. In Cherokee County, it is associated with disturbed soil over Kings Mountain Belt rocks.

Habitat for this species was absent along the rail line and poor in the realignment area. Based on site reconnaissance, which found no evidence of the species in the project area, the proposed project will have no effect on this species.

Schweinitz's sunflower (*Helianthus schweinitzii*) is found in sunny to semi-sunny clearings such as roadsides, power line clearings, old pastures, woodland openings, and generally on poor clay or rocky

soils. Almost all of the extant populations of this native sunflower are on vulnerable sites. Protection from shade and competition from other vegetation have been identified as the most important habitat characteristics; however, the habitat that meets these requirements has become increasingly rare. This species historically inhabited piedmont prairies and glades, and open habitats maintained by natural fires and (to some extent) by grazing animals. Today, artificial disturbances provide the necessary open habitat in places like roadsides and power line right-of-ways, sites that are extremely difficult to protect.

Habitat for this species was absent along the rail line and poor in the realignment area. Based on site reconnaissance, which found no evidence of the species in the project area, the proposed project will have no effect on this species.

The dwarf-flowered heartleaf (*Hexastylis naniflora*) is found only in the upper Piedmont regions of North and South Carolina (Gaddy, 1987). It is the only state or federally listed endangered or threatened species known to occur within Cherokee County. Soil type is the most important habitat requirement of the species. It needs acidic Pacolet, Madison gravelly sandy loam, or Musella fine sandy loam to grow. It is found on bluffs, slopes, boggy areas, and the headwaters of creeks and streams on these soil types. Although populations of this species are known in northern Cherokee County, dwarf-flowered heartleaf has never been reported on the Kings Mountain Belt soils, such as those found in the project study area.

Field reconnaissance revealed no occurrences of this species. Therefore, the proposed construction project will have no effect on the dwarf-flowered heartleaf.

Canada moonseed is a woody climbing vine (also termed a liana) found in rich floodplain forests in the Piedmont of South Carolina. It is known from the York County side of the Broad River, just east of the Lee Rail Line study area.

Field reconnaissance revealed no occurrences of this species. The proposed construction project should have no effect on this species.

Southern adder's tongue fern is native to temperate regions of the northern hemisphere. Southern adder's tongue fern is a small, hard-to-spot, atypical-looking fern that often occurs in large numbers in rich, loamy Piedmont floodplains.

Field reconnaissance revealed no occurrences of this species. The proposed construction project will have no effect on the southern adder's tongue fern.

The **southeastern myotis** is a medium-sized bat with a wingspan of approximately 25 cm. It occurs throughout the southeastern United States. Southeastern myotis forage mainly over ponds, lakes, and slow-moving streams, flying close to the water to catch insects. They roost in a variety of shelters including caves, mines, bridges, buildings, culverts, and tree hollows. The species prefers oak-hickory to mixed conifer hardwood habitats, and is often associated with human habitations near springs or lakes.

Field reconnaissance revealed no evidence of this species' presence in the project area; however, no nocturnal surveys were conducted. The nearest observed southeastern myotis was recorded approximately 10 miles east of the study area in Cherokee County, according to SCDNR's interactive geographic web site (access by password only) (SCDNR, 2006).

The **loggerhead shrike** is a predatory songbird referred to in the vernacular as the "butcher bird" due to its habit of impaling its prey, usually a small bird, mouse, or insect, on a thorn or barbed wire fence which facilitates tearing it apart. Loggerhead shrikes prefer edge habitat, nesting along roadsides and hedgerows in agricultural regions. They prefer tree species with thorns—e.g., hawthorn, crabapple, and locust, upon which they can impale their prey.

Based upon the absence of such trees and barbed wire fences throughout the project area, and the fact that no individuals were observed during site reconnaissance, the proposed construction project will have no effect on the loggerheaded shrike.

A spring 2009 survey for the species will be conducted; an addendum report will be attached to this text.

The **American kestrel** is also called the sparrow hawk. The American kestrel typically inhabits open areas, where it is commonly observed hovering or perched on telephone or power lines as it hunts the insects and small mammals it captures on the ground rather than in midair. American kestrels are found in a variety of habitats including parks, fields, and forest edges with openings. Field reconnaissance during this inventory revealed no occurrences of this species. However, the American kestrel has been observed in the general area. It is not known if it actually nests locally or not.

Due to the absence of large clearings and abandoned fields along the rail line ROW and the realignment corridor, the proposed construction project will have no effect on the American kestrel.

A spring 2009 survey for this and other avian species will be conducted; an addendum report will be attached to this text.

The **northern cricket frog** occurs in the Piedmont of South Carolina down to the fall line. It is uncommon in South Carolina and listed as "of concern" by SCDNR. Recent studies in the Lee Nuclear Site and adjacent properties indicate that it is quite common in the area (Dorcas, 2007).

This frog was not observed during our inventory, but it has been reported at London Creek (Dorcas, 2007) and could well occur along streams, in pools, and in ponds near the study area. Because it is a frog of open wetlands, the proposed construction project should have no effect on this species.

Detailed descriptions of the above-listed species are provided, along with photographs, in the exhibits with this report.

6.0 Conclusion and Effects Determinations

There were five mapped perennial streams (Little London Creek, London Creek, Toms Branch Creek, Peoples Creek and Furnace Creek), three mapped intermittent streams (unnamed), and two unmapped ephemeral drainages along the route of the proposed construction project. No wetlands exist within the proposed project boundaries.

The proposed action can likely be completed under the coverage of Clean Water Act, Section 404 Nationwide Permit #14 (linear transportation projects).

According to United States Fish and Wildlife Service (USFWS) and South Carolina Department of Natural Resources (SCDNR) databases, no endangered, threatened, or otherwise noteworthy plant or animal species is known to occur within the Lee Rail Line study area. Furthermore, a field inventory of the study area conducted in June, 2008, did not locate any federally or state-listed species. However, the American kestrel has been reported in the project area. In addition, the northern cricket frog has been reported in the area (Dorcas, 2007) where suitable habitat occurs in wetlands along the proposed Lee Rail line.

7.0 Literature Cited

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Weakley, A. S., "Vascular flora of the Carolinas, Virginia, Georgia, and the panhandle of Florida," University of North Carolina Herbarium, www.herbarium.unc.edu/flora.htm (accessed 2008).

Table 1 (Sheet 1 of 2)

Threatened, Endangered, and Species of Concern Potentially Present along the Rail Line ROW and Realignment Corridor in Cherokee County, South Carolina[1]

Common Name	Federal or State List	Federal Status[2]	State Status[3]	Brief Description of Preferred Cover/Habitat	Habitat at the Site?	Present on the site?
Plants						
Nodding onion	Cherokee		SC	Dry, open woods; well-drained soil and sun to partial shade. Basic circumneutral soils.	Rail line: poor Realignment: no	No
Georgia aster	Cherokee, York	FC		Dry, open calcareous areas and disturbed sites over Mecklenberg and Iredell soils.	Yes	No
Rough sedge	Cherokee		SC	Gravelly seepages in wet, rich woods.	Rail line: poor Realignment: no	No
Smooth sunflower	Cherokee, York		SC	Steep slopes with south to west aspects; in Cherokee Co., associated with disturbed soil over Kings Mountain Belt rocks.	Rail line: no Realignment: poor	No
Schweinitz's sunflower	York	FE		Piedmont prairies and glades; open habitats. Generally on poor clay or rocky soils.	Rail line: no Realignment: poor	No
Dwarf-flowered heartleaf	USFWS	FT,	ST	Bluffs, slopes, and boggy areas with the correct soil type. Needs acidic Pacolet, Madison gravelly sandy loam, or Musella fine sandy loam.	Rail line: poor Realignment: no	No
Canada moonseed	Cherokee		SC	Rich floodplain forest in the Piedmont.	Rail line: good Realignment: no	No
Southern adder's tongue fern	Previously unknown in either county		SC	Rich, loamy Piedmont floodplains.	Rail line: good Realignment: no	No
Mammals						
Southeastern myotis bat	USFWS		SC	Migratory; forages over ponds, lakes, and streams, and roosts in tree cavities and abandoned structures near water. Prefers oak-hickory forests.	Yes to both	No[5]
Birds						
Loggerhead shrike	USFWS		SC	Likes tree species with thorns, and prefers edge habitat	Rail line: no	No

Table 1 (Sheet 2 of 2)

Threatened, Endangered, and Species of Concern Potentially Present along the Rail Line ROW and Realignment Corridor in Cherokee County, South Carolina[1]

Common Name	Federal or State List	Federal Status[2]	State Status[3]	Brief Description of Preferred Cover/Habitat	Habitat at the Site?	Present on the site?
				along roadsides and hedgerows.	Realignment: yes	
American kestrel	USFWS	FSC	NL	Inhabits open areas for hunting and found in a variety of habitats: open fields, parks, and forest edges.	Rail line: no Realignment: yes	No
Frogs						
Northern cricket frog	York		SC	Open wetlands, in streams, ponds, and pools.	Yes to ~~all~~ both	Yes

NOTES:

1. Table derived from Table 2.4-5 in William States Lee III Nuclear Station COL Application, Part 3, Environmental Report for Cherokee County. All federally listed, federal "of concern," and federal "candidate" species known from York and Cherokee Counties and all state-listed species known from Cherokee County are included above.
2. Federal Status: FT–federally listed as threatened; FC–federal candidate, not yet listed; FSC—federal species of concern.
3. State Status: ST–state listed as threatened; NC–state listed as of national concern; RC–state listed as of regional concern; SC–state listed as of state concern; NL–not listed.
4. No effect (NE); may affect, but not likely to adversely affect (NLAA); likely to adversely affect (LAA).
5. No nocturnal observations were made.

TABLE 2:

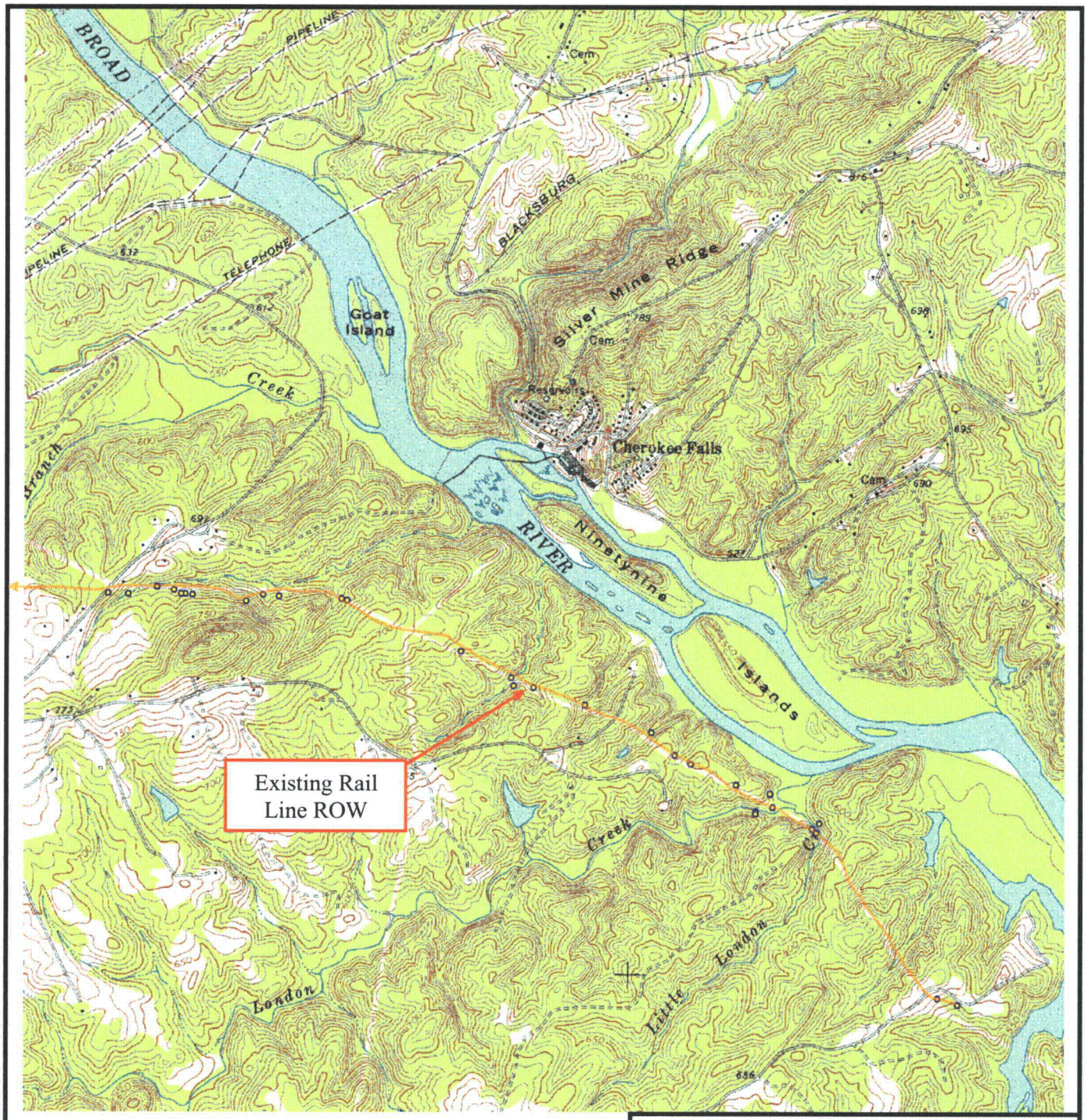
Potential Waters of the U.S. Crossings

Table 2: Potential Waters of the U.S. Crossings

Drain No.	Water of the US Type	Width and Depth at Ordinary High Water Mark	Railroad Crossing Method	Specific Best Management Practices	Approximate Locations	Impact Acreage
1	Mapped Perennial Stream	20 feet wide x 50 feet long	Culvert Installation	• Sediment capture devices, such as sediment fencing, should be utilized around the drainage perimeter to inhibit sediment runoff downstream during construction.	**Lat/long:** N 35° 04' 24.2" W081° 36' 52.2"	0.023 acre
						TOTAL ACREAGE **0.023 acre**

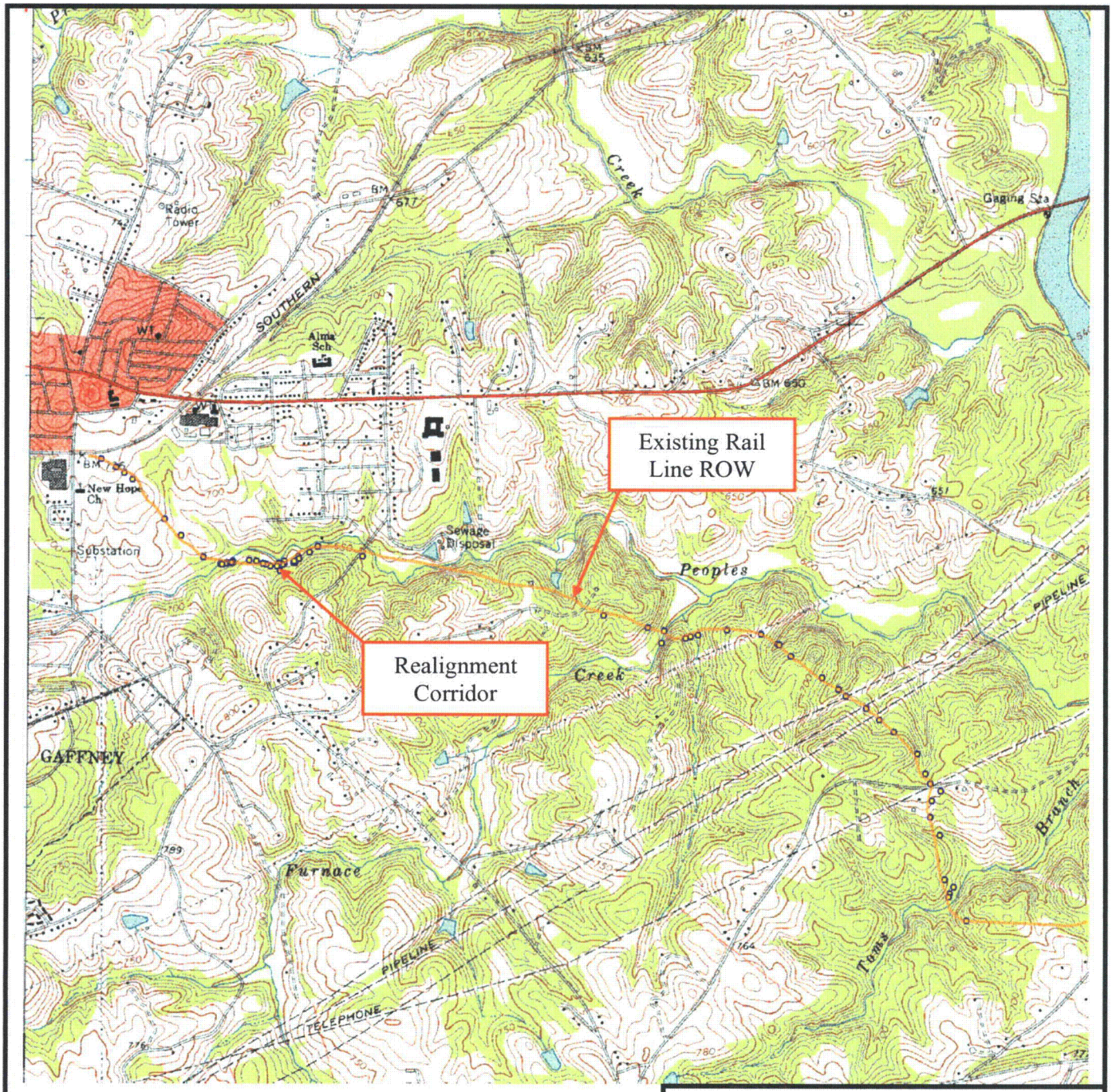
FIGURE 1:

Topographic Map



WILLIAM STATES LEE III NUCLEAR STATION UNITS 1 & 2

Figure 1-A: Topographic Map
Scale: 1:24,000
Source: USGS 7.5 Minute Topographic Map
Blacksburg South, SC

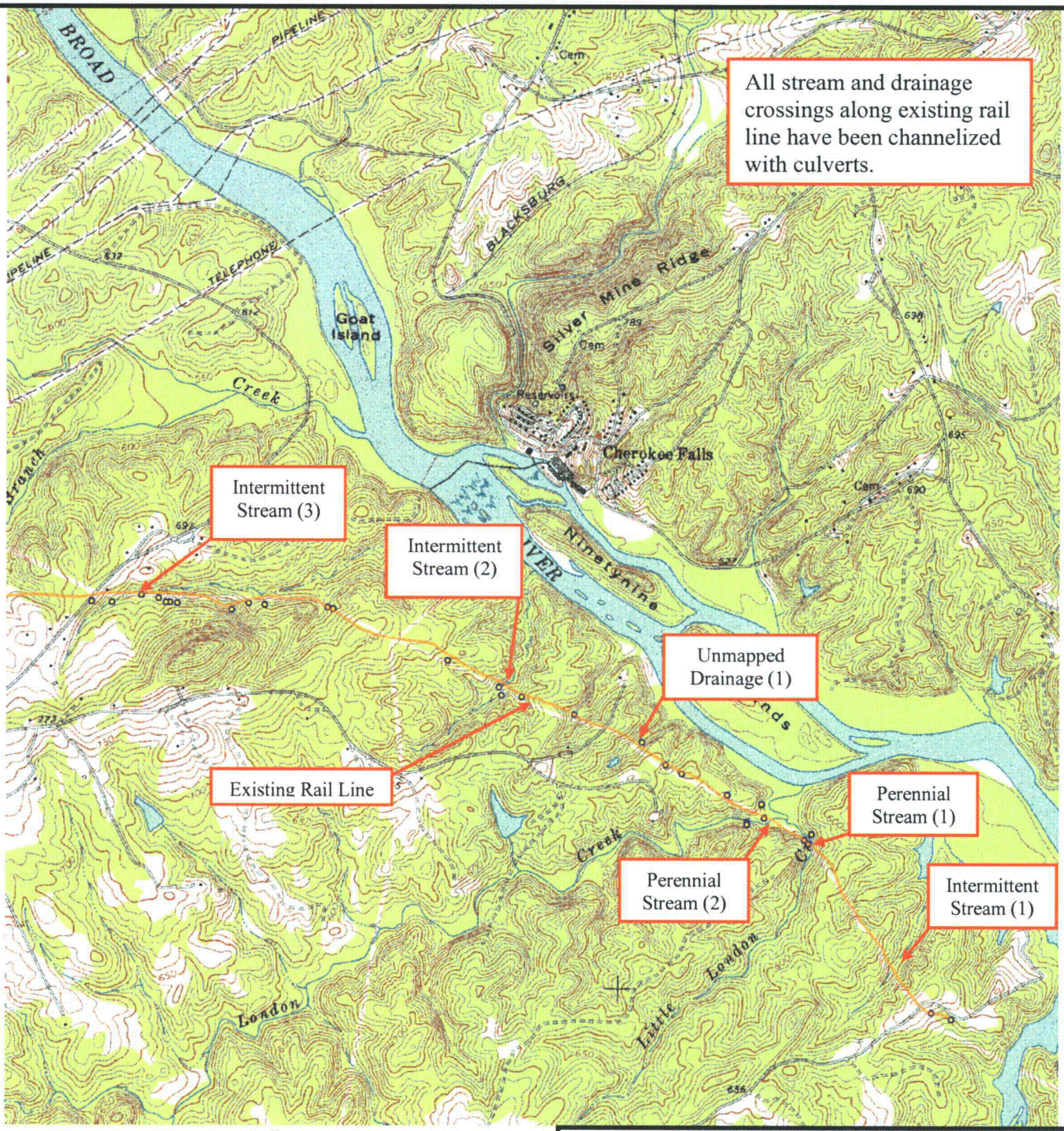


WILLIAMS STATES LEE III NUCLEAR STATIONS UNITS 1 & 2

Figure 1- B: Topographic Map
Scale: 1:24,000
Source: USGS 7.5 Minute TopographiMap
Blacksburg South, SC

FIGURE 2:

Site Map



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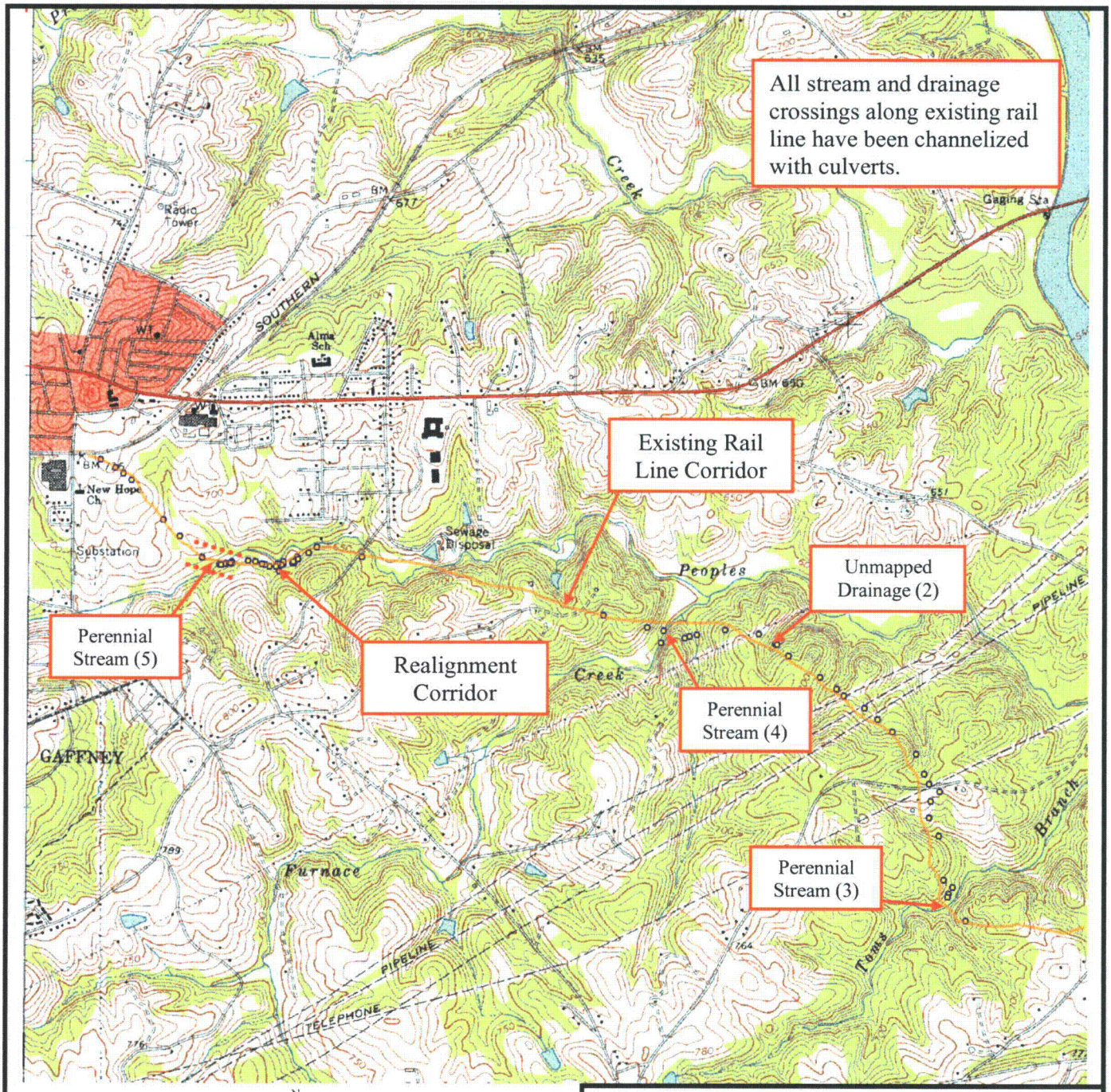
WILLIAMS STATES LEE 111
NUCLEAR STATION UNITS 1 & 2

Figure 2-A: Site Map
Scale: 1:24,000
Source: USGS 7.5 Minute Topographic Map
Blacksburg South, SC



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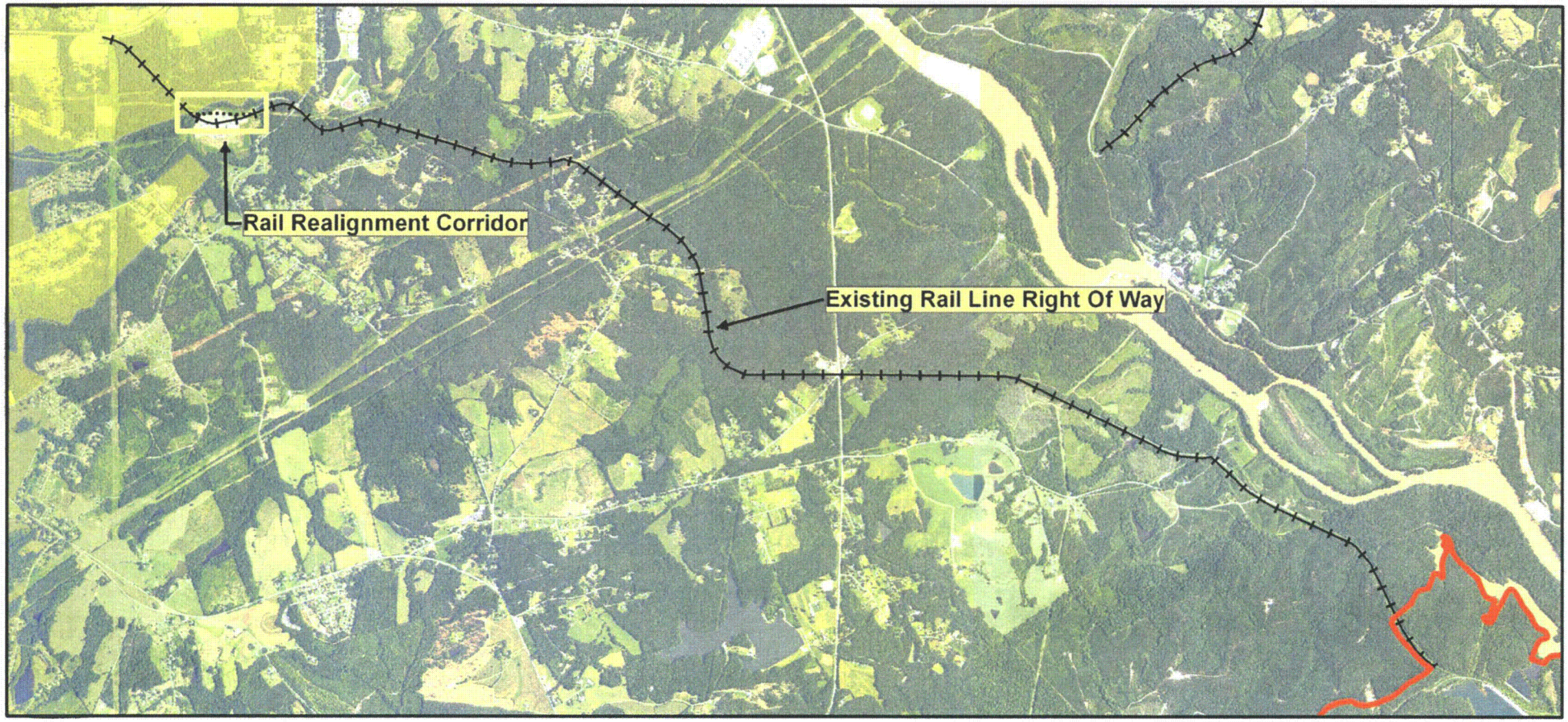
WILLIAMS STATES LEE III NUCLEAR STATION UNITS 1 & 2

Figure 2-B: Site Map
Scale: 1:24,000
Source: USGS 7.5 Minute Topographic Map
Blacksburg South, SC

FIGURE 3:

Aerial Map



Legend

- Rail Realignment
- Railroad
- Lee Nuclear Station Property Boundary
- Gaffney Urban Area

Source: U.S.D.A. National Agricultural Imagery Program 2005 Aerial

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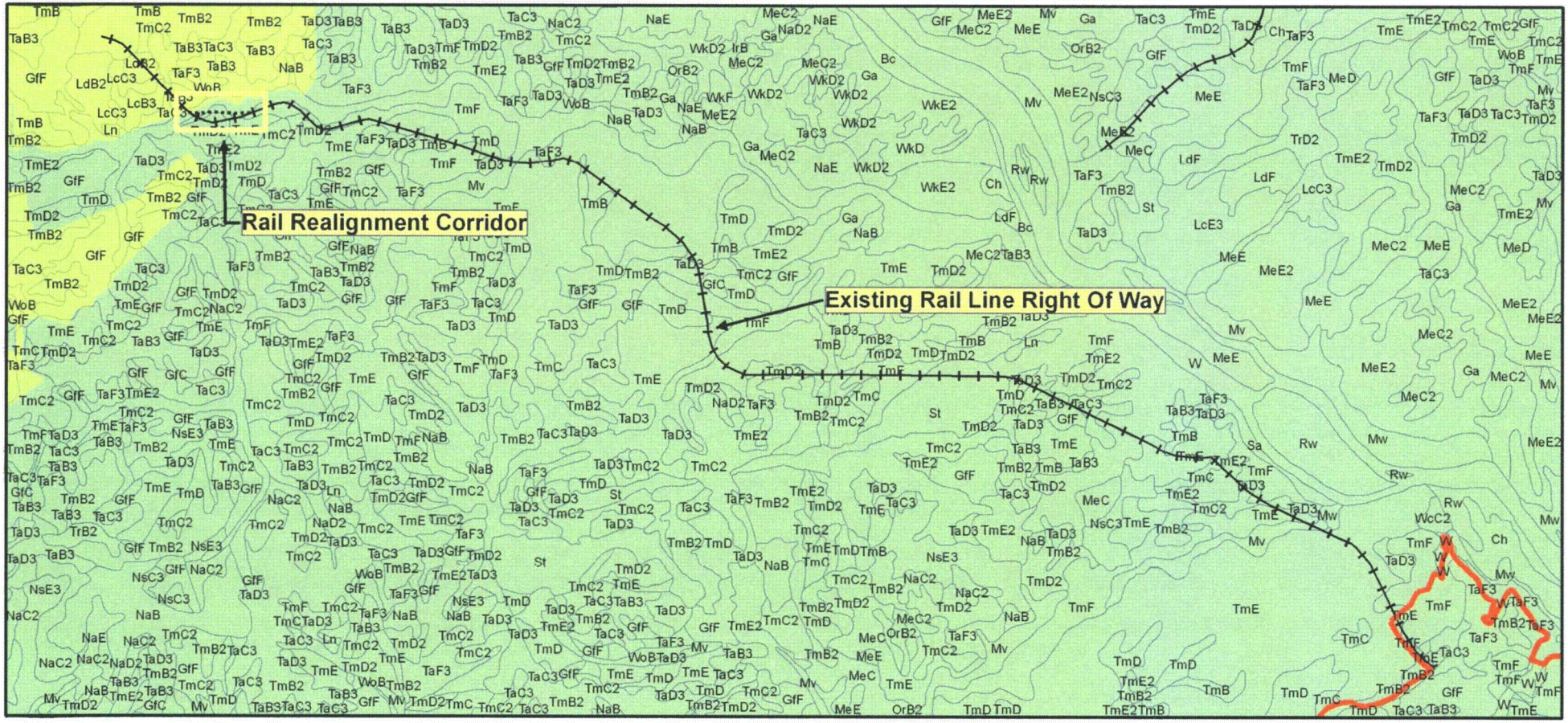
WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 & 2

Proposed Rail Line Right Of Way
and Realignment Corridor

Figure 3

FIGURE 4:

Soil Map



Legend

- Rail Realignment
- Railroad
- Lee Nuclear Station Property Boundary
- Gaffney Urban Area

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Source: Cherokee County Soil Survey

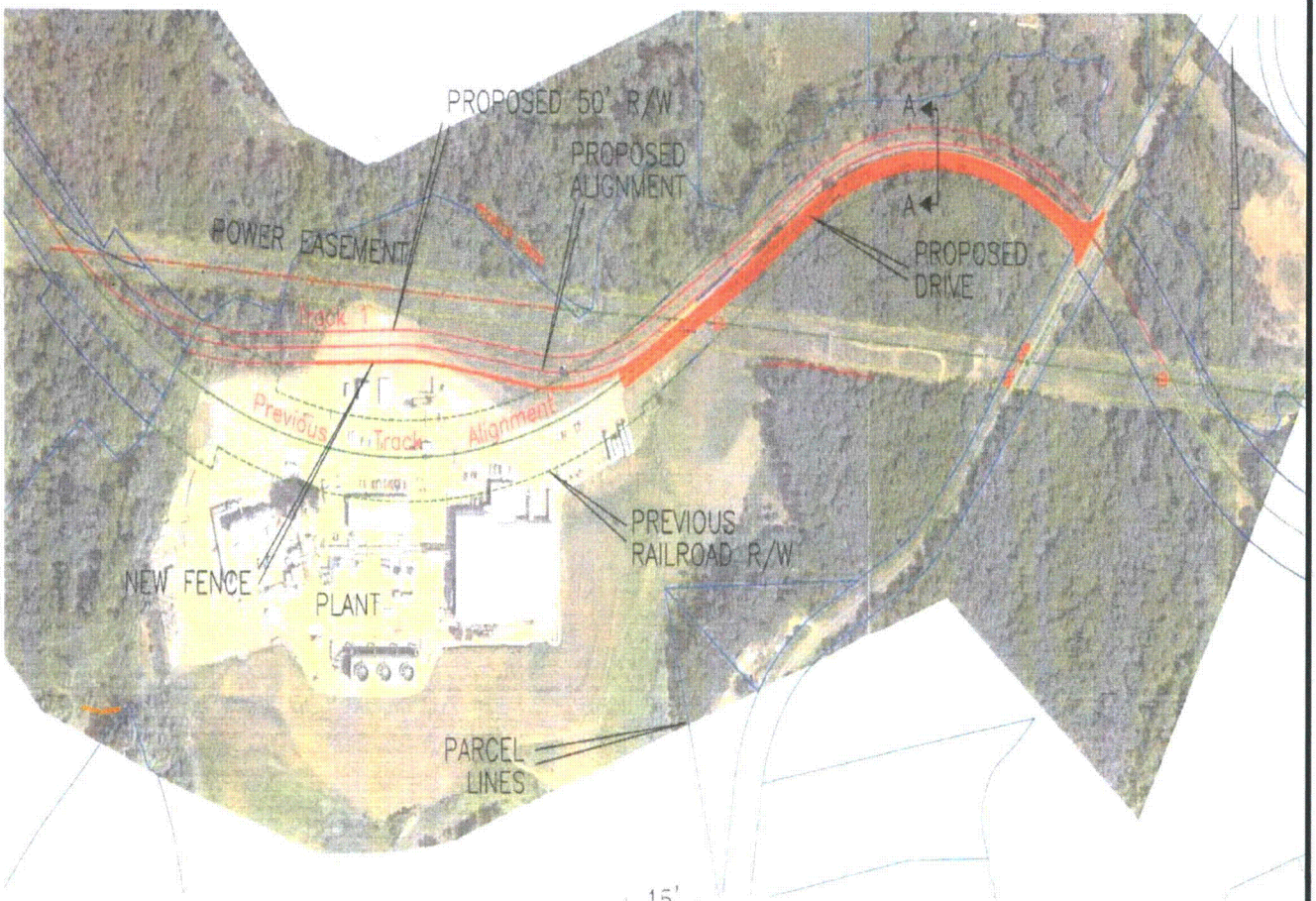
WILLIAM STATES LEE III NUCLEAR STATION UNITS 1 & 2

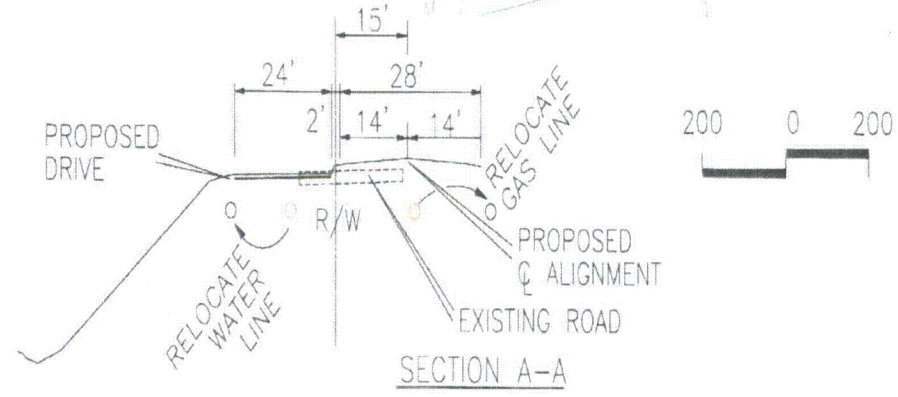
Proposed Rail Line Right Of Way and Realignment Corridor

Figure 4

EXHIBIT A:

Proposed Realignment





WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 & 2

Exhibit A: Proposed Realignment
Source: Duke Energy Carolinas, LLC

EXHIBIT B:

Site Photographs

Photo 1. Facing east along rail line Right of Way (ROW).

Photo 2. Realignment area north of the Ice Plant

Photo 3. Facing south towards Peoples Creek.

Photo 4. Facing west along Rail Line ROW.

Photo 5. Approximate location of proposed realignment area that crosses Peoples Creek.

Photo 6. Rail line ROW facing east.

Photo 7. Rail Line ROW facing west.

EXHIBIT C

Threatened, Endangered, and Species of Concern Descriptions

Nodding Onion

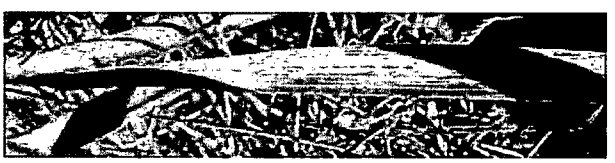
Allium cernuum
Lily family (Liliaceae)

Description: This native perennial plant consists of a vase-like rosette of basal leaves. The leaves are about 12" long and up to ¼" across. They are linear in shape, with smooth margins and parallel venation. Unlike many onions from the Old World, the leaves are solid and flat, and there is a small ridge running along their length. They are rather soft and tend to bend outward or downward.

From the center of the rosette, a single flowering scape may appear that is about 1½' tall. This scape terminates in an umbel of flowers. This umbel faces toward the ground because the scape bends downward at its apex. The flowers are individually about ¼" long, and may be white, light lavender, or pink. A flower consists of 3 petals and 3 sepals (i.e., tepals) with a similar appearance, and has 6 white stamens with yellow anthers. The pedicels are about ¾" long. At the base of the umbel are two membraneous bracts that soon fall off. The blooming season is usually mid-summer and lasts about a month. There is no floral scent. The flowers are replaced by seed capsules containing small black seeds that are light in weight and rather flat. They are distributed to a limited extent by the wind. The root system consists of a bulb that is longer than it is wide. Both the bulb and foliage have a typical onion-like scent. Offsets frequently form, creating small clumps of plants.

Cultivation: The preference is full or partial sun, and moist to mesic conditions. The soil can consist of black loam, or contain either rocky or sandy material. This plant resents hot, dry summers. It usually isn't bothered by foliar disease. This plant is easy to grow, and will spread gradually under suitable conditions. It is easier to establish plants by transplants from offsets, rather than by attempting to germinate the seeds.

Range & Habitat: Nodding Onion is an uncommon plant that occurs only in NE Illinois (see Distribution Map).



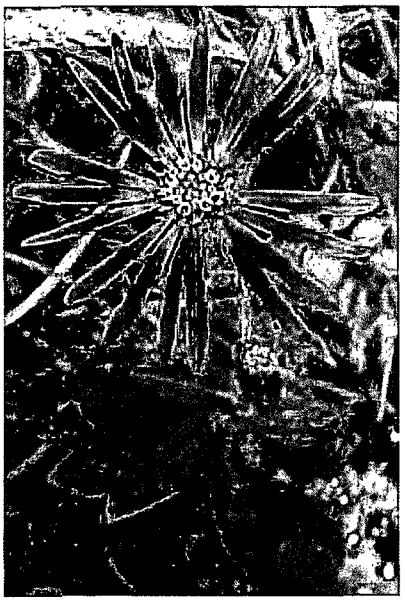
Habitats include moist to mesic black
soil prairies, sandy pannes near dunes, and rocky bluffs. Much of the prairie habitat where this plant once occurred has been destroyed by development. It is more likely to be observed in high quality habitats than disturbed areas.

Faunal Associations: The flowers are pollinated by small short-tongued bees, such as Halictid bees. Syrphid flies may visit the flowers as well, but they are feeding on the pollen and are non-pollinating. Mammalian herbivores usually don't eat *Allium spp.*, although livestock may consume the foliage along with the grass in pastures, which can provide milk with an off-flavor.

Photographic Location: The photographs were taken at the wildflower garden of the webmaster in Urbana, Illinois.

Comments: This plant is easy to identify because of the nodding habit of the flowers. Nodding umbels of flowers are an evolutionary adaptation that tends to restrict insect visitors to bees. Other insects are more reluctant to hang upside down while attempting to feed on nectar or pollen. The nodding habit may also protect the nectar from rain. The Nodding Onion is available in the nursery trade, which often features cultivars with rosy pink flowers.

Return



http://www.2bnthewild.com/plants/H383.htm

Georgia Aster (*Aster georgianus*)

Federal Status: FC
State Status:

Description: This is a herbaceous plant, it is a perennial which can reach 100cm in height (39inches). The leaves are alternate and can reach 7.5cm in length (3inches). Each leaf is elliptic and entire. The flowers have numerous parts and are up to 5cm wide (2 inches). They are violet. Blooms first appear in early fall and continue into mid fall their habitat is dry open areas and often in disturbed sites. Their range is North Carolina, South Carolina, Georgia and Alabama, in very scattered locations and was once known from Florida.

Rough Sedge (*Carex scabrata*)
http://plants.usda.gov/java/profile?symbol=CASC13

Federal Status:
State Status: SC

Descripition:

Stem: sharply 3-angled to winged; brownish at base; 30-90 cm; grows in dense tufts.

Leaves: dark green; fertile shoots 4-8 mm wide, sterile shoots to 18 mm wide; 2 lateral veins more prominent than central vein; leaf sheath hairless; sometimes minutely rough on surface facing away from stem.

Spikes: 4-7; toward base long-stalked, stalks progressively shorter to lacking as progress up infloresence; sheaths of leafy bracts short to absent; basal spikes pistillate, 2-4 cm long, 5-7 mm wide; pistillate scales equal in length to perigynia, acute to short-awned, with small short hairs; terminal spike staminate.

Perigynia: 3-5 mm long; spreading from axis; green-brown; 2-ribbed and strongly 6-8 veined; small scatttered hairs; egg-shaped with wide end toward base, tapers to beak that is about 1/3 of total length; beak tip with soft teeth or none.

Achene: 3 stigmas; style deciduous; achene 3-sided, angled ridges separated by concave sides; almost fills perigynium; style not persistent.

Habitat: wet rich deciduous woods, creek borders; sometimes also in swamps and wet clearings.
http://research.plattsburgh.edu/wetlandmonitoring/Plant%20ID%20manual/Carex%20scabrata.pdf

http://plants.usda.gov/java/largeImage?imageID=ecla_001_ahp.jpg

Smooth coneflower (*Echinacea laevigata*)

Federal Status: Endangered
State Status:

Description: Smooth-purple Coneflower is an herbaceous perennial closely related to the common Purple Coneflower. The leaves of Smooth-Purple Coneflower, which are never cordate (heart shaped), distinguish the two in the field. It is a rhizomatous perennial herb with a fleshy rootstock and coarse, lanceolate, scabrous basal leaves. It grows up to 1.5 m tall and the stems are smooth with few leaves. Flower heads are usually solitary. The ray flowers are light pink to purple and usually drooping. Disk flowers are very dark purple and tubular. Since the discovery of the species, more than half of the known populations have been destroyed, mainly because of agricultural clearing and residential and industrial development. (USFWS 1995)

Smooth-Purple Coneflower has historically always been a rare plant. Its habitat is restricted to open sites with low competition. Prior to European settlement, forest openings were more common. Such openings were most likely maintained by fire and large grazing mammals. Neither of these forms of disturbance is a significant factor in modern times. As a result, acceptable habitat for species requiring such conditions is greatly diminished. There are a total of 23 extant populations of this attractive plant, 13 of which are in decline and only one of which is increasing.

Smooth-Purple Coneflower is found in sunny sites with low competition, usually on magnesium and calcium rich soils. These sites include open woods, barrens, roadsides,

clearcuts, dry limestone bluffs, and power line rights-of-way. Periodic disturbance is necessary for the maintenance of open conditions. (USFWS 1995)
http://www.centerforplantconservation.org/ASP/CPC_ViewProfile.asp?CPCNum=1541

http://plants.usda.gov/java/profile?symbol=EUCA5

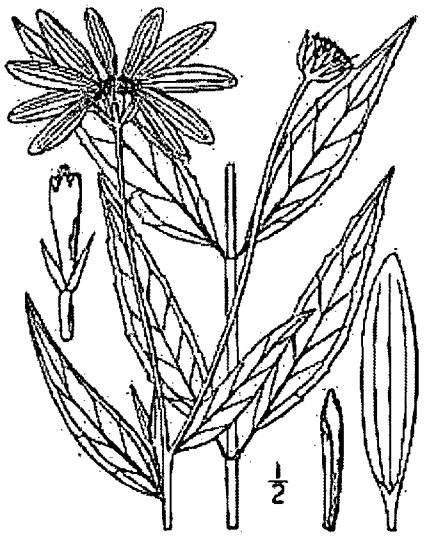
Vasey's dogfennel (*Eupatorium capillifolium var. vaseyi*)

Federal Status:
State Status: SC

Description: Dogfennel grows in the southeastern United States from southern Florida west to eastern Texas. Its range extends north to Tennesee, Virginia, and New Jersey. It is occasional farther north along the East Coast to Massachusetts.

Dogfennel is a common, aggressively weedy native of the southeastern United States. It is alternately described as an annual and a perennial. It has several stems arising from a stout woody caudex. It grows in distinct colonies on favorable sites. Dogfennel normally reaches 4 to 5 feet (1.2-1.5 m) in height but can reach up to 9 feet (2.7 m) on fertile sites. The fruit is a smooth achene.

Dogfennel grows on disturbed sites in the Southeast. It is common on young burns in the loblolly pine (Pinus taeda)-turkey oak (Quercus laevis) type in Florida's Ocala National Forest, on recent burns in the Okefenokee Swamp, on burned and cut Atlantic white-cedar (Chamaecyparis thyoides) sites in the Great Dismal Swamp, and on overgrazed sites in Louisiana. Dogfennel is a frequent invader of everglades sawgrass (Cladium sp.) communities during drought. Other dogfennel sites include meadows, swales, old fields, pond borders, ditches, disturbed or overgrazed pastures, and roadsides. Although apparently able to grow on a variety of soils, it is most common on dry, sandy soils.
http://www.fs.fed.us/database/feis/plants/forb/eupcap/all.html



http://plants.usda.gov/java/profile?symbol=HELA2

Smooth sunflower (*Helianthus laevigatus*)

Federal Status:
State Status: Maryland-endangered

Description: The smooth sunflower is known to inhabit eastern coastal states from New York in the north to South Carolina in the south. It is a perennial herb/forb that inhabits sparse woodlands, shrublands, and open herbaceous rock outcrops occurring on ridge and valley shales and Blue Ridge metashales of the central Appalachian Mountains at elevations from 1000 to 2600 ft. Habitats generally occur on steep slopes with south to west aspects.

http://www.centerforplantconservation.org/ASP/CPC_ProfileImage.asp?FN=2205a

Schweinitz's sunflower (*Helianthus schweinitzii*)

Federal Status: Endangered
State Status: North Carolina-endangered

Description: Almost all of the extant populations of this native sunflower are on vulnerable sites. Protection from shade and competition from other vegetation have been identified as the most important habitat characteristics for Helianthus schweinitzii. Unfortunately, the habitat that meets these requirements has become increasingly rare. This species historically inhabited Piedmont prairies and glades, and open habitats that were maintained by natural fires and to some extent by grazing animals. Today, artificial disturbance provides the necessary open habitat—in places like roadsides and power line right-of-ways, sites that are extremely difficult to protect (USFWS 1991).

Sunny to semi-sunny clearings such as roadsides, power line clearings, old pastures, and woodland openings. Generally on poor clay or rocky soil. (USFWS 1991)
http://www.centerforplantconservation.org/ASP/CPC_ViewProfile.asp?CPCNum=2205

U.S. Fish & Wildlife Service

Dwarf-flowered Heartleaf in North Carolina

Dwarf-Flowered Heartleaf
Hexastylis naniflora

Status: Threatened

Family: Birthwort

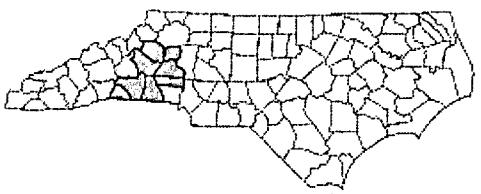
Flowering/Fruiting Dates: Mid-March to early June.

Habitat: Acidic sandy loam soils along bluffs and nearby slopes, hillsides and ravines, in boggy areas adjacent to creekheads and streams. Soil type is the most important habitat requirement (Pacolet, Madison, or Musella types). Needs sunlight in early spring for maximum flowering and seed production.

Distinguishing Characteristics: Smallest flowers of any North American Hexastylis; most are less that .4 inch long, with narrow sepal tubes (never more than .28 inch wide). The jug-shaped flowers range from beige to dark brown, sometimes greenish or purplish. Leathery evergreen leaves are dark green and heart-shaped.

Threats: Site conversion from woodlands to pasture, residential, industrial development, reservoir construction, herbicides.

Species Distribution from known occurrences. Species may occur in similar habitats in other counties. Green counties indicate observed within 20 years. Yellow counties indicate an obscure data reference to the species in the county. Red counties indicate observed more than 20 years ago.



Map Generated Oct. 22 2003

Detailed B/W Drawing Key to detail drawing

Species Location Map based on information provided by the North Carolina Natural Heritage Program. For additional information regarding this Web page, contact Allen Ratzlaff, in Asheville, NC, at allen_ratzlaff@mail.fws.gov

Visit the North Carolina ES Homepage
Visit the U.S. Fish and Wildlife Service Home Page

Keywords={same keywords listed above - used for search tools}

Canada moonseed (*Menispermum canadense*)

Federally Listed: NL
State Listed: SC

Description: *Menispermum canadense* (Canadian Moonseed, Common Moonseed, or Yellow Parilla) is a flowering plant in the family Menispermaceae, native to eastern North America, from southern Canada south to northern Florida, and from the Atlantic coast west to South Dakota and Texas. It occurs in thickets, moist woods, and the banks of streams. It is a woody climbing vine growing to 6 m tall. The leaves are usually palmately lobed, 5-20 cm diameter with 3-7 shallow lobes, but are occasionally rounded and unlobed. Canada moonseed fruit are produced in 6-10 cm diameter clusters of purple-black berries, each berry is 1-1.5 cm in diameter. The seed inside the berry resembles a crescent moon, and is responsible for the common name. The fruit is ripe between September and October, the same general time frame in which wild grapes are ripe.

Both the leaves and fruit resemble that of the fox grape (*Vitis labrusca*); confusion can be dangerous as Moonseed fruit is poisonous, unlike the edible fox grape fruit.

Southern adder's tongue fern (*Ophioglossum vugatum*)

Federal Status: NL
State Status: SC

Descripion: *Ophioglossum vulgatum*, commonly known as the southern adderstongue, is a species of the plant genus *Ophioglossum*. It is native to temperate regions of the northern hemisphere, with a scattered distribution in Europe, Asia, northwestern Africa, and eastern North America.

This plant grows from a rhizome base to 10-20 cm tall (rarely to 30 cm). It consists of a two-part frond, separated into a rounded diamond-shaped sheath and narrow spore-bearing spike. The spike has around 10-40 segments on each side. It reproduces by means of spores.

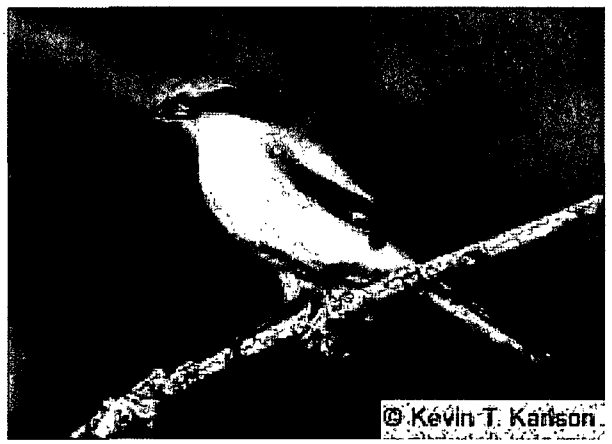
Traditional Europeans used leaves and rhizomes as a poultice for wounds. This folk remedy was sometimes called the "Green Oil of Charity". A tea made from the leaves was used as a traditional European folk remedy for internal bleeding and vomiting.

Southern adderstongue is small and hard-to-spot occuring singly in un-improved pastures, rock crevices and grassy path-sides but also in colonies of hundreds of plants in sand dune slacks

Southestern myotis bat (*Myotis austroiparius*)

Federal Status: FSC
State Status: SC

Description: *Myotis austroriparius* is a small insectivorous bat with short, thick, woolly fur, which is bi-colored, russet, dark gray, or black at the base, and whitish at the tips. This species molts in late summer, shedding a lighter, rusty coat to acquire one of dark gray. It has unusually long toe-hairs which extend past the ends of its claws. Its calcar is not keeled and its tragus is relatively short and blunt compared to other myotis. The southeastern myotis has a high domed skull with a sagittal crest (a bony ridge which runs along the top of the skull from front to back). Its forearm is 35-42 mm long, and it weighs 5-9 g.



Loggerhead shrike (*Lanius ludovicianus*)

Federal Status: FSC
State Status: SC

Description: Loggerhead shrikes are medium-sized passerine birds. As with many song birds, the Loggerhead Shrike has several different colors whose arrangement is considered important in attracting a mate (along with displayed hunting prowess). The shrike's greyish back and black wings are evident against its white breast. Most prominent; however, is the Loggerhead's black mask which extends around the eyes and down into the forehead. This shrike also has a slightly hooked beak, which is used for impaling prey. It is eight to ten inches long and has a wing span of approximately 12 inches, making it about the size of an average robin. The male and female of the species are similar in appearance.

American kestrel (*Falco sparverius*)

Federal Status: FSC
State Status: NL

Description: American Kestrels (*Falco sparverius*) are small falcons and is colloquially known in North America as the "Sparrow Hawk". This name is misleading because it implies a connection with the Eurasian Sparrowhawk *Accipiter nisus*, which is unrelated; the latter is an accipiter rather than a falcon. Though both are diurnal raptors, they are only distantly related.

American Kestrels are widely distributed across the Americas. Their breeding range extends from central and western Alaska across northern Canada to Nova Scotia, and south throughout North America, into central Mexico, Baja, the Caribbean, and South America.

Most of the birds breeding in Canada and the northern United States migrate south in the winter, although some males stay as year-round residents. American Kestrels are rare vagrants to western Europe.

Northern cricket frog (*Acris crepitans crepitans*)

Federal Status: NL
State Status: SC

Description: Northern Cricket Frogs are North America's smallest vertebrate, ranging from 0.75 to 1.5 inches (19–38 mm) in length. Their dorsal coloration varies widely, and includes greys, greens, browns, often in irregular blotching patterns. One NY biologist has identified 6 distinct color morphs and 4 pattern morphs, and several intrergrades between these (Westerveld,1977). Typically there is dark banding on the legs and a white bar from the eye to base of foreleg. The skin has a bumpy texture. It is very similar to the Southern Cricket Frog, *Acris gryllus*, found in the US Southeastern Coastal Plain, although some overlap along the fall line exists. Southern cricket frogs have longer legs, with less webbing on the hind feet, and a more pointed snout than that of northern cricket frogs. However, some NY biologists have observed Northern Cricket Frogs with snouts indistinguishable from those of the Southern species, and consider these to be two subspecies of one species (Westerveld, 1998). The line on the back thigh of the southern cricket frog is typically more sharply defined than that of the Northern Cricket Frog (Conant et al. 1998, Martof et al. 1980). NY biologists have recorded Northern Cricket Frogs with extremely sharp posterior leg stripes.

ADDENDA:

Report on Autumn Endangered Species Inventories:
Lee Rail Line,
Cherokee County, South Carolina

by L. L. Gaddy

Introduction

In September of 2008, it was agreed (between Duke Energy and the Nuclear Regulatory Commission) that additional autumn inventories would be carried out in the proposed Lee Rail Line study area for the possible presence of four rare plant species, all of which flower in the fall and occupy primarily non-forested habitats. The plants in question are: the federally listed ("endangered") smooth coneflower (*Echinacea laevigata*), the federally listed ("endangered") Schweinitz's sunflower (*Helianthus schweinitzii*), the federal "candidate" species Georgia aster (*Aster georgianus*), and the state-listed ("of state concern") smooth sunflower (*Helianthus laevigatus*).

All four of the above-listed plant species are known to occur in non-forested areas in the Piedmont of South Carolina. Smooth coneflower, known from Mecklenburg County, North Carolina (approximately 50 miles northwest of the Lee Nuclear Site), is found primarily on calcium- and magnesium-rich soils. Schweinitz's sunflower grows on Iredell and related soils in "Piedmont prairies," and is known to occur in eastern York County, about 40 miles east of the Lee Nuclear Site. Georgia aster is found on dry, calcareous and related piedmont soils, and is known from less than 10 miles north and east of the Lee site in Cherokee County. Finally, smooth sunflower, known primarily farther north to occur on shaly rocks and to the south on rocks of the Carolina slate belt, is reported from a dry Kings Mountain belt rocky site near Draytonville Mountain, less than 5 miles northwest of the Lee Nuclear Site.

Methodology

First, known sites for Georgia aster and smooth sunflower in Cherokee and York Counties near the Lee Nuclear Site were visited on October 10, 2008, to better understand the habitats for these species and establish a reliable search image. Fieldwork on the Lee Rail Line (see report text for a description of study area) was carried out in early October 2008. Because much of the rail line is inaccessible by vehicle, most of the study area was inventoried on foot.

Results/Discussion

None of the four plant species discussed below or habitat for these species was found in the Lee Rail Line study area. A species list of the plant species encountered in the non-forested and forest edge portions of the Lee Rail Line study area is included as Table 1. Each species involved in the search is discussed below:

Smooth Coneflower. Smooth coneflower, a federally listed ("endangered") plant, is known to occur in calcium- and magnesium-rich soils in the Piedmont of South Carolina. Such sites are usually easy to spot in the field due to indicator companion species such as rattlesnake master (*Eryngium yuccifolium*), feverweed (*Parthenium* sp.), and redbud (*Cercis canadensis*), which grow with the coneflower. None of these plants were observed on the Lee Rail Line during the October fieldwork. Furthermore, according to recent (2004) soil survey data from the area (www.websoilsurvey.nrcs.usda.gov), the only soils present on the site were Tatum soils, with Tatum very fine sandy loam the dominant soil type.

Schweinitz's Sunflower. Schweinitz's sunflower is a federally listed ("endangered") species known primarily to occur on Iredell soils in York County, South Carolina. No Iredell or related soils (Mecklenburg) or marginal habitat for this sunflower was found in the Lee Rail Line study area.

Georgia Aster. Georgia aster is listed as "of federal concern" by the U.S. Fish and Wildlife Service. It is historically known from east of the Lee Nuclear Site in York County. During my October fieldwork associated with this and the Lee Nuclear Site project, I found three new populations of Georgia aster in Cherokee County near the Lee Rail Line study area. All three populations were growing on roadsides or power line rights-of-way on exposed, dry, silty clay loam (probably Nason silty clay loam). One population of Georgia aster was found on a power line less than 500 feet from the Lee Rail Line. Special attention was therefore paid to areas where power lines cross the Lee Rail Line. No populations of Georgia aster, however, were found in the Lee Rail Line study area.

Smooth Sunflower. Smooth sunflower is a state-listed species "of concern" by South Carolina Department of Natural Resources. There was an historical population of the plant several miles northwest of the Lee Nuclear Site. On October 10, I visited the historical site and found that the plant was no longer there. However, I found a previously unknown population in dry, exposed soil about 0.5 miles east of the historic population. The soil type here appeared to be Nason silty clay loam. This population is about 0.5 mile west of the Lee Rail Line and is on a power line right of way that crosses the Lee Rail Line. I searched all areas of the line adjacent to where the smooth sunflower was found, but I found no plants of this species in the Lee Rail Line study area.

Table 1. Vascular Plants of Non-forested and Forest Edge Areas: Lee Rail Line—October 2008.

LEGEND

Exotic, introduced, or invasive species in italics.

Taxonomy based on: Radford, A. E., H. Ahles, and C. R. Bell. 1968. *Manual of the vascular flora of the Carolinas.* University of North Carolina Press: Chapel Hill, NC.

Dominant species in bold type.

Acer negundo (box elder)
Acer rubrum (red maple)
Albizzia julibrisin (mimosa)
Alnus serrulata (tag alder)
Ambrosia artemisiifolia (common ragweed)
Ambrosia triloba (giant ragweed)
Andropogon virginicus (broomsedge)
Apocynum cannabinum (dogbane)
Aralia spinosa (spikenard)
Ascelpias tuberosa (orange milkweed)
Asimina parviflora (dwarfed pawpaw)
Asplenium platyneuron (ebony spleenwort)
Aster patens (Piedmont aster)
Aster pilosus (frost aster)
Baccharis halimifolia (false willow)
Baptisia alba (false indigo)
Bidens bipinnafida (Spanish needles)
Bromus sp. (brome grass)
Brousonetia papyrifera (paper mulberry)
Cacalia atriplicifolia (Indian plantain)
Calycanthus floridus (sweetshrub)
Campsis radicans (trumpet creeper)
Carex scoparia (pointed broom sedge)
Carpinus carolininana (hop hornbeam)
Carya glabra (pignut hickory)
Ceanothus americanus (New Jersey tea)
Celtis laevigata (sugarberry)
Cercis candensis (redbud)
Chrysanthemum leucathemum (ox-eye daisy)
Chrysopsis graminifolia (grass-leaved goldenaster)
Chrysopsis mariana (Maryland goldenaster)
Conyza canadensis (horseweed)
Coreopis major (coreopsis)
Cornus florida (dogwood)
Dactylon sp. (orchard grass)
Danthonia sp. (oat grass)
Daucus carota (Queen Anne's lace)
Desmodium virginianum (Virginia beggar-ticks)
Dicanthelium sp. (unidentified panic grass)
Diodia virginiana (buttonweed)
Diospyros virginiana (persimmon)
Duchesnea indica (Indian strawberry)
Eleaegnus umbellata (silverberry)
Elymus sp. (wild rye grass)
Eragrostis spectabilis (purple love grass)
Eragrostis sp. (love grass)
Erectites hieracifolia (fireweed)
Erianthus contortus (Piedmont plumegrass)
Eupatorium album (white thoroughwort)
Eupatorium capillifolium (dog fennel)
Eupatorium purpureum (Joe pye weed)
Festuca sp. (fescue)
Fragaria virginiana (wild strawberry)
Gnaphalium sp. (rabbit tobacco)
Helenium amarum (bitterweed)
Helianthus atrorubens (red-leaved sunflower)
Helianthus divaricatus (spreading sunflower)
Helianthus microcephalus (small-headed sunflower)
Heterotheca subaxillaris (camphorweed)
Juglans nigra (black walnut)
Juncus sp. (rush)
Juncus tenuis (path rush)
Juniperus virginiana (eastern red cedar)
Kalmia latifolia (mountain laurel)
Leptoloma sp. (fall witch grass)
Lespedeza bicolor (bicolor lespedeza)
Lespedeza cuneata (sericea)
Ligustrum sinense (Chinese privet)
Liquidambar styraciflua (sweet gum)
Liriodendron tulipifera (tulip poplar)
Lonicera japonica (Japanese honeysuckle)
Lycopodium flabelliforme (running pine)
Microstegium vimineum (Vietnam grass)
Osmunda cinnamomea (cinnamon fern)
Osmunda regalis var. spectabilis (royal fern)
Oxalis dillenii (yellow wood sorrel)
Oxydendrum arboreum (sourwood)
Panicum dichotomum (fall panicum)
Panicum sp. 1(panic grass)
Paspalum sp.
Pinus taeda (loblolly)
Pinus virginiana (Virginia pine)
Plantago lanceolata (English plantain)
Plantago rugelii (round-leaved plantain)
Platanus occidentalis (sycamore)
Polygonum punctatum (spotted smartweed)

Populus deltoides (eastern cottonwood)
Prunus serotina (black cherry)
Quercus nigra (water oak)
Rhus copallina (winged sumac)
Rhus glabra (smooth sumac)
Rhus radicans (poison ivy)
Rosa multiflora (multiflora rose)
Rubus canadensis (Canada blackberry)
Rubus sp. (dewberry)
Rumex crispus (curly dock)
Salix nigra (black willow)
Sambucus canadensis (elderberry)
Sassafras albidum (sassafras)
Schizachyrium scoparium (little bluestem)
Senecio aureus (golden ragwort)
Setaria glauca (foxtail grass)
Shrankia microphylla (sensitive brier)
Solanum carolinense (Carolina nightshade)
Solidago arguta (early goldenrod)
Solidago canadensis (Canada goldenrod)
Solidago odora (fragrant goldenrod)
Sorghastrum halepense (Johnson grass)
Tridens flavus (purple top)
Trifolium pratense (red clover)
Ulmus alata (winged elm)
Ulmus americanus (American elm)
Vaccinium arboreum (sparkleberry)
Verbena brasiliensis (Brazilian verbena)
Verbesina occidentalis (chaffseed)
Vitis rotundifolia (muscadine)
Woodwardia areolata (netted chain fern)

ENDANGERED SPECIES INVENTORY OF PROPOSED DRIVE IN NEW ALIGNMENT AREA OF THE PROPOSED LEE RAIL LINE, CHEROKEE COUNTY, SOUTH CAROLINA

On September 23, 2008, biologist Chick Gaddy inventoried the study area for a proposed drive that will provide access into the Reddy Ice Plant. The drive will be adjacent to an existing road, which will be used as the right-of-way for the proposed Lee Rail Line. The right-of-way of the proposed drive will extend approximately 20 to 25 feet into a mixed hardwoods forest south of the existing road (see Exhibit A: Proposed Realignment).

The study area for the proposed drive includes two plant community types: disturbed roadside and mixed hardwood forest. These two types and their flora are discussed below.

The disturbed roadside is adjacent to the existing road and is dominated by native and exotic grasses such as sweet vernal grass (*Anthoxanthum odoratum*), fescue (*Festuca pratensis*), and dallis grass (*Paspalum* sp.), and herbaceous species such as Indian strawberry (*Duchesnea indica*), Carolina pony's-foot (*Dichondra* carolinensis), gall-of-the-earth (*Prenanthes trifoliata*), and bear's-paw (*Polymnia uvedalia*). Along the margin of the roadside, kudzu (*Pueraria montana*) is present and invading the adjacent mixed hardwood forest, and several scattered mimosa trees (*Albizia julibrissin*),an exotic species, are leaning over the roadside. The roadside is mowed regularly by the ice plant staff. No habitat for any of the species listed in Table 1 (attached) is found in the disturbed roadside community.

The mixed hardwood forest is on a north-facing slope just south of the disturbed roadside. It is a mature forest with red oak (*Quercus rubra*), white oak (*Quercus alba*), hickory (*Carya* sp.), tulip poplar (*Liriodendron tulipifera*), and sweet gum (*Liquidambar styraciflua*) in the canopy and basswood (*Tilia heterophylla*), dogwood (*Cornus florida*), and sourwood (*Oxydendrum arboreum*) in the understory. The shrub layer is dominated by a dense, low thicket of pawpaw (*Asimina triloba*) and hazelnut (*Corylus* sp.). In the herbaceous layer, Christmas fern (*Polystichum acrostichoides*) and Piedmont heartleaf (*Hexastylis minor*) are the most abundant species; others include Piedmont trillium (*Trillium catesbaei*), false Solomon's seal (*Smilacina racemosa*), Piedmont bedstraw (*Galium circaezans*), and pipsissewa (*Chimaphila maculata*). Canopy trees are over 75 feet tall and range from 10 inches to over 30 inches in diameter. Some of the red oaks are quite impressive. None of the plant species from Table 1 were seen in the mixed hardwood forest study area during the inventory. Habitat, however, exists in the mixed hardwoods forest for four of the plant species listed in Table 1: nodding onion (*Allium cernuum*), Canada moonseed (*Menispermum canadense*), southern adder's-tongue fern (*Ophioglossum vulgatum*), and American ginseng (*Panax quinquefolius*), all state-listed species. The latter three species are not present in the study area. Based on a September survey, however, it is impossible to determine if the nodding onion is found in the mixed hardwood forest.

Table 1: Threatened, Endangered, and Species of Concern Potentially Present in the Proposed Drive study area south of the proposed Lee Rail Line ROW in Cherokee County, South Carolina.*

Scientific Name	Common Name	Status**	Habitat at the Site?	Present on the site?	Effect Category for Proposed Drive Study Area
Allium cernuum	Nodding onion	SC	Yes, possible in mixed hardwoods	No	No Effect (NE)
Aster georgianus	Georgia aster	FC	No	No	NE
Carex scabrata	Rough sedge	SC	No	No	NE
Helianthus laevigatus	Smooth sunflower	SC	No	No	NE
Helianthus schweinitzii	Schweinitz's sunflower	FE	No	No	NE
Hexastylis naniflora	Dwarf-flowered heartleaf	FT, ST	No, preferred soil types not present	No	NE
Hydrangea cinerea	Ashy hydrangea	SC	No	No	NE
Lotus helleri	Prairie birdsfoot-trefoil	FSC	No	No	NE
Menispermum candense	Canada moonseed	SC	Yes, in mixed hardwoods	No	NE
Ophioglossum vulgatum	Southern adder's tongue fern	SC	Yes, in mixed hardwoods	No	NE
Panax quinquefolius	American ginseng	RC	Yes, in mixed hardwoods	No	NE
Thermopsis mollis	Soft-haired thermopsis	SC	No	No	NE
Xerophyllum asphodeloides	Turkey-beard	SC	No	No	NE
Myotis austroriparius	Southeastern myotis bat	SC	No, but nocturnal observations were not carried out	No	NLAA (Not like to adversely affect)
Lanius ludovicianus	Loggerhead shrike	SC	No	No	NE
Falco sparverius	American kestrel	FSC/NL	No	No	NE
Acris crepitans crepitans	Northern cricket frog	SC	No	No	NLAA

*Table derived from Table 2.4-5 in WLS COLA ER for Cherokee County. All federally listed, federal "of concern," and federal "candidate" species known from York and Cherokee Counties and all state-listed species known from Cherokee County are included above.

Federal Status: FT–federally listed as threatened; FC–federal candidate, not yet listed; FSC—federal species of concern. **State Status: ST–state listed as threatened; NC–state listed as of national concern; RC–state listed as of regional concern; SC–state listed as of state concern; NL–not listed.

Enclosure No. 1
Duke Letter Dated: May 12, 2009

Attachment 68-2

Letter from T. Bowling (Duke Energy) to L. Zimmerman (U.S. Fish and Wildlife Service), March 10, 2009

Duke Energy®

526 S. Church Street
Charlotte, NC 28202

Mailing Address:
EC09D / P.O. Box 1006
Charlotte, NC 28201-1006

704382-5917

March 10, 2009

Ms. Lora Zimmerman
U.S. Fish and Wildlife Service
176 Croghan Spur Road
Suite 200
Charleston, SC 29407

Subject: Duke Energy, W.S. Lee III Nuclear Station
Rare, Threatened, and Endangered Species Survey
FWS Log No. 2006-I-0530

Dear Ms. Zimmerman,

On April 3, 2006 I contacted your office to inform you of the proposed W.S. Lee III Nuclear Station (formerly termed the Cherokee Project) that Duke Energy plans to construct in Cherokee County, SC along the Broad River. At that time, Mr. Timothy Hall responded to my letter indicating several species listed as threatened or species of concern reported in Cherokee County.

On July 16, 2007 I provided results from our evaluation of rare, threatened and endangered species on the Lee Nuclear Site.

Duke Energy has recently re-acquired the right-of-way for the rail corridor that served the former Cherokee Project. In 2008 we conducted a survey to evaluate the presence of jurisdictional waters and rare, threatened and endangered species along the rail corridor. Enclosed is our evaluation of jurisdictional waters and rare, threatened and endangered species along the rail corridor.

The evaluation concluded that based on species lists and known occurrence databases of the United States Fish and Wildlife Service and South Carolina Department of Natural Resources for Cherokee and York counties, no endangered, threatened, or otherwise noteworthy plant or animal species is known to occur within the Lee Rail Line study area. Furthermore, a field inventory of the study area conducted in June, 2008, did not locate any federally or state-listed species.

I would appreciate you concurrence with our conclusion that there are no Federal rare, threatened or endangered species that would be impacted by the construction or operation of the W.S. Lee III Nuclear Station rail corridor.

Thank you very much for your support and assistance. Please call me if you have any questions.

Sincerely,

Theodore Bowling
Nuclear Plant Development
Environmental Report Project Manager

1. Enclosures: Biological Evaluation and Potential Jurisdictional Waterbody Identification and Delineation; Proposed Rail Line Construction Corridor Cherokee County, South Carolina

cc. File 4000.35-05

Enclosure No. 1
Duke Letter Dated: May 12, 2009

Attachment 68-3

Letter from T. Hall (U.S. Fish and Wildlife Service) to T. Bowling (Duke Energy), April 1, 2009

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

April 1, 2009

Mr. Theodore Bowling
Environmental Project Manager
Nuclear Plant Development
Duke Energy
EC09D/Post Office Box 1006
Charlotte, NC 28201-1006

Re: Endangered Species Review, W. S. Lee, III, Nuclear Station Rail Line, Cherokee County, SC, FWS Log No. 42410-2009-TA-0266

Dear Mr. Bowling:

The U.S. Fish and Wildlife Service (Service) has reviewed your survey results on potential impacts to threatened and endangered species (T&E) by the proposed rail line which will serve the W. S. Lee, III, Nuclear Station in Cherokee County, SC. The proposed rail line is located on an existing rail line corridor that was originally intended to serve the Cherokee Nuclear Station. The Cherokee Nuclear Station was never constructed and the rail line was abandoned. Duke Energy has re-acquired this rail line for use by the new proposed nuclear facility.

Duke Energy surveyed a 100 foot wide corridor centered along the abandoned rail line to characterize existing habitat as well as to search for Federal and state listed species. Approximately 1300 feet of the proposed rail line will be realigned to avoid an existing commercial facility; therefore, the new alignment was also surveyed. Only one T&E species, the dwarf flowered heartleaf, *Hexastylis naniflora*, is known to occur within Cherokee County. However, Duke Energy also surveyed for the Schweinitz's sunflower, *Helianthus schweinitzii*, as there is suitable habitat within the rail line corridor. The survey found no occurrence of the heartleaf or the sunflower within the 100 foot corridor. Based on these results, Duke Energy concludes that the proposed re-use of the abandoned rail line and construction of the new 1300 foot rail section would have no effect upon federally listed species.

Upon view of the information provided, the Service agrees that construction of the new rail line within the existing corridor, and the new alignment portion, will have no effect upon federally listed species. However, obligations under section 7 of the Endangered Species Act must be

considered if: (1) new information reveals impacts of this identified action that may affect any listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner which was not considered in this assessment, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

The Service appreciates the opportunity to provide you with this information regarding this project. If you have any questions regarding the Service's comments, please do not hesitate to contact Mark Caldwell at (843) 727-4707 ext. 215.

Sincerely,

Craig Aubrey

for Timothy N. Hall
Field Supervisor

TNH/MAC/km