DUKE ENERGY CAROLINAS, LLC

Charlotte, North Carolina

SITING AND ENVIRONMENTAL REPORT

FOR THE

WILLIAM STATES LEE III NUCLEAR STATION

230 kV and 525 kV FOLD-IN LINES

CHEROKEE AND UNION COUNTIES, SC

November 2007

Prepared for Duke Energy Carolinas, LLC by:

Facilities Planning & Siting, PLLC
421 Penman Street
Suite 100
Charlotte, NC 28203
(704) 926.3781

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EXECUTIVE SUMMARY

Introduction

Duke Energy Carolinas, LLC ("Duke Energy"), a subsidiary of Duke Energy Corporation, supplies electrical energy to more than 2 million customers in the piedmont and mountain regions of North and South Carolina. Extending north to the Virginia border and south to Georgia, the Duke Energy service territory covers 22,000-square miles in one of the fastest growing regions in the United States. To maintain an adequate supply of reliable electrical energy to serve the projected future demand in its service territory, Duke Energy is currently preparing a combined construction and operating license ("COL") application for a new nuclear station, which has been named the William States Lee III Nuclear Station ("Lee Nuclear Station" or "Plant"). It is currently projected that the Plant will generate 2,234 megawatts of electricity. Duke Energy anticipates that submitting the COL application to the Nuclear Regulatory Commission ("NRC") will occur in late 2007 or early 2008.

To add the electrical energy generated by the Lee Nuclear Station to the existing electrical transmission system for delivery to users throughout Duke Energy's service territory, the Plant's electrical switchyard must be connected to Duke Energy's existing 230 kV and 525 kV transmission line network. The connections will be accomplished by "folding in" the Pacolet Tie-Catawba 230 kV and Oconee-Newport 525 kV Lines, which run in east-to-west directions south of the Lee Nuclear Station site. A "fold-in" configuration requires two separate lines. The net effect will be to "break" the existing 230 kV and 525 kV lines, turn them at points on each side of the break, and run them to the Plant switchyard. The segments of the existing lines between their two respective turning points will be de-energized. Thus, the Lee Nuclear Station switchyard will be connected to Duke Energy's existing electrical transmission system by four new transmission lines: Two new double circuit 230 kV lines will connect the switchyard to separate points along the existing Pacolet Tie-Catawba 230 kV Line, and two new single circuit 525 kV lines will connect the switchyard to separate points along the existing Oconee-Newport 525 kV Line. The four lines will be placed in two separate rights-of-way, each containing one 230 kV line and one 525 kV line running parallel away from the switchyard until they reach the existing Pacolet Tie-Catawba 230 kV Line; the 525 kV lines in each corridor will continue running southward to the Oconee-Newport 525 kV Line.

Duke Energy conducted a comprehensive siting study to determine the two separate routes that will extend from the Lee Nuclear Station switchyard to the existing Pacolet Tie-Catawba 230

kV Line and Oconee-Newport 525 kV Line. Twenty-one alternate routes were developed, identified as alternate Routes A-U, and the combination of alternate Routes K and O were selected as the two preferred routes for the four future transmission lines.

The Proposed Action

Duke Energy proposes to fold-in the existing Pacolet Tie-Catawba 230 kV and Oconee-Newport 525 kV Lines to the future Lee Nuclear Station switchyard. The planning parameters setout the following requirements for the 2-230 kV and 2-525 kV lines that will comprise the fold-in connections, which are referred to as the "Lee Nuclear Station 230 kV and 525 kV Fold-In Lines", "Lee Nuclear Station Fold-In Lines", or "Fold-In Lines" throughout this report:

- The two 525 kV lines extending from the existing Oconee-Newport Line to the switchyard must be separated by a minimum of one mile for the maximum line length distance practical to reduce the possibility that a single unanticipated event (lightning, tornado, plane crash, sabotage, etc.) could interrupt serviceability of both lines.
- The two 230 kV lines running into the switchyard from the existing Pacolet Tie-Catawba 230 kV Line must be separated by a minimum of one mile for the maximum distance practical.
- One 230 kV line and one 525 kV line can run together in the same corridor.

Pursuant to the planning parameters, Duke Energy proposes to build four new transmission lines in two separate corridors. In each corridor, a new 230 kV line will extend from the existing Pacolet Tie-Catawba 230 kV Line to the switchyard, and a new 525 kV line will extend from the existing Oconee-Newport 525 kV Line to the switchyard. The existing 230 kV and 525 kV lines run generally in east-west directions south of the site selected for the Lee Nuclear Station. The Pacolet Tie-Catawba 230 kV is approximately 7-miles south of the site; the Oconee-Newport 525 kV Line is approximately 15-miles from the site (*Figure 1*).

Transmission Line Route Selection

Duke Energy conducted a comprehensive siting study to determine the routes for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines. This was accomplished by executing the three-phase transmission line siting process that was first developed by Duke Energy in 1990 (*Appendix A*). The goal of the siting study was to select two separate routes for the Fold-In Lines that would minimize affects to land use, environmental resources, cultural resources, and aesthetic quality.

The first step in the siting study was the delineation of a ***siting study area*** through which any feasible transmission line corridors, or routes, might be developed. Duke Energy defined a 283.47-square mile geographic area for analysis by considering topography, the Broad River Corridor, land use and development patterns, transportation corridors, and the locations of (1) a linear segment of the Oconee-Newport 525 kV Line; (2) a linear segment of the Pacolet Tie-Catawba 230 kV Line; and, (3) the selected site for the Lee Nuclear Station 525/230 kV switchyard (*Figure 2*). After reviewing these factors and conducting field reconnaissance throughout a broad area between the switchyard site and the existing 230 kV and 525 kV lines to be folded into the switchyard, it was judged that any routes or combination of routes connecting the existing 230 kV and 525 kV lines to the switchyard that extended beyond the boundaries of the siting study area would be inferior to routes running within it because of the increased environmental and land-use impacts associated with excessive line length.

Duke Energy used aerial photographs, topographic maps, and extensive field investigations to gather data about land use, aesthetic resources, cultural resources, natural resources, development patterns, and infrastructure in the 283.47-square mile siting study area. Federal, state, and local agencies were contacted to obtain land use, cultural resource, natural resource, and environmental information and records. Additionally, public comments and information were received through a series of initial community workshops held on April 2 and 5, 2007, where each property owner of record in the siting study area was invited via direct mail to complete and return a "community questionnaire" and attend the workshops.

All of the data locations and attributes received from agencies, developed during field investigations, and received from the public were grouped into the following twelve (12) data layers in a Geographic Information System ("GIS") (*Figures 3 through 13*):

1. Cultural Resources;
2. Rare, Threatened and Endangered angered Species;
3. Land Cover;
4. Prime Farmland Soils and Soils of Statewide Importance;
5. Land Use;
6. Future Land Use;
7. Zoning;
8. Occupied Buildings;
9. Public Visibility;
10. FEMA Flood Zones;
11. Hydrography; and,
12. Wetlands.

Each individual data factor within the 12 groups was weighted in the GIS to account for its sensitivity to transmission line routing (*Table 1)*. The weighted data was then combined in the GIS

to develop a single map, called a *suitability composite,* which displays cumulative effect of the combined, overlapping constraint data. The suitability composite displays the areas of least constraint to routing, the areas with highest constraint, and the full range of conditions between those extremes. Using the suitability composite, twenty-one (21) alternate routes were development through areas of relatively low constraint (*Figure 14; Figures 15 and 15A*). Following the inspection and verification of each alternate route in the field, they were presented to the public at a second series of community workshops on June 18 and 19, 2007.

Using information gathered during the siting study, at the community workshops, and from the community questionnaires, Duke conducted a quantitative and qualitative evaluation of the 21 alternate routes based on the calculated effects each would have on multiple factors within the following eight (8) evaluation categories:

1. Cultural and Natural Resource Factors
2. Land Cover Factors
3. Property Ownership Factors
4. Land Use Factors
5. Occupied Buildings Factors
6. Visibility Factors (Public)
7. Visibility Factors (Residential)
8. Water Quality Factors

The alternate route evaluation phase in the siting process led to the ranking of the alternate routes (*Tables 2 and 3*) as summarized in Chart ES-1 (routes with lower rank scores are ones that will minimize adverse effects over the broadest range of factors within the 8 evaluation categories):

Chart ES-1: Alternate Route Siting Study Rank

Route	Siting Study Rank	Route	Siting Study Rank	Route	Siting Study Rank
A	20	**H**	12	**O**	1
B	17	**I**	7	**P**	3
C	14	**J**	13	**Q**	4
D	18	**K**	6	**R**	8
E	15	**L**	2	**S**	11
F	5	**M**	10	**T**	19
G	16	**N**	9	**U**	21

After the alternate routes were ranked in the siting study, they were paired to form the two corridors required to fold in the Pacolet Tie-Catawba 230 kV and Oconee-Newport 525 kV Lines to the Plant's switchyard. Routes that shared common links or did not meet the planning parameter

of being separated by one-mile for the maximum possible distance were mutually exclusive. For example, the alternate routes that scored best and second best in the siting study, Routes O and L, respectively, were mutually exclusive because they shared a common link. The pairing of eligible alternate routes produced 115 combination route possibilities, and the combination of alternate Route K and alternate Route O ("Routes K-O") ranked as the superior pair (*Figure 14A*).

Duke Energy completed a comprehensive cost analysis of the 115 route pair combinations and concluded that the estimated cost of alternate Routes K-O, although not the lowest cost pair, is justifiable on the basis of minimizing effects to environmental resources, cultural resources, land use, and aesthetic quality in the area; therefore, alternate Routes K-O was selected as the two routes for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines (*Table 4*).

The Affected Environment

South Carolina covers more than 30,000 square miles and is divided into three physiographic provinces. A small area along the northwestern boundary of the State lies in the Blue Ridge physiographic province. The Piedmont physiographic province occupies the area between the Blue Ridge province and the Fall Line, and the area between the Fall Line and the Atlantic Ocean constitutes the Coastal Plain physiographic province. The Blue Ridge and Piedmont provinces are composed of igneous and metamorphic rocks, mostly gneiss, schist, phyllite, and slate. Elevations are as high as 650 ft. above mean sea level ("msl") at the Fall Line and over 3,500 ft. msl in the Blue Ridge province. The Coastal Plain province consists of variations of sand, clay, and limestone that overlie the Piedmont rocks. Elevations range from mean sea level (msl) at the coast to as much as 650 ft. msl at the Fall Line. The siting study area for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines includes portions of Cherokee, York, and Union Counties, all of which are located in the Piedmont physiographic province.

The Broad River, Pacolet River, Abingdon Creek, Gilkey Creek, Thickety Creek and Bullock Creek are the primary waterways in the siting study area (*Figure 3)*. The average annual rainfall for the area is approximately 45 inches. Winters are typically moderate, damp, and cool while the summers tend to be warm with extended periods of 85 – 95 degree (Farenheight) weather.

The siting study area is characterized by gently sloping to steep hills that are dissected by many branching drainage ways. The mean elevation of the siting study area is 563' above mean sea level. The standard deviation to the mean elevation is 74'; thus, topographic elevations in the siting study area generally range from 489' to 637', with occasional exceptions below and above

the general range. The high points in the siting study area are McKowns Mountain, elevation 820 ft. msl, and Worth Mountain, which has a high point at elevation 703 ft. msl (*Figure 6).*

Although generally rural, the siting study area includes the Towns of Hickory Grove, Sharon, and the southern fringe of Smyrna, all of which are in the York County portion (*Figure 1*). Except for commercial and moderate-high density residential development in the Towns of Hickory Grove and Sharon, the entire 283.47-square mile siting study area is generally characterized by sparse residential development along public roads, large tracts of forested land (primarily oak-hickory association), pine plantations, pasture land, fallow land, and a minor amount of agricultural production land. Chart ES-2 shows the numbers of various types of buildings in the siting study area, which is an indicator of existing development type (*Figure 7*).

Chart ES-2: Building Types in the Siting Study Area

Building Type	Quantity
Fire Department / EMS Building	9
Residence - Multi-Family	2
Residence - Single Family	4,116
Church Building	69
Commercial Building	96
Community Building	5
Day Care Facility	1
Government Building	9
School	2

Cultural Resources

Brockington and Associates, Inc. ("Brockington") conducted background research on Duke Energy's behalf to determine previously recorded architectural and archaeological resources in the 283.47-square mile siting study area. Records were reviewed at the South Carolina Department of Archives and History ("SCDAH"), including the SCDAH Finding Aid, to determine recorded architectural resources in the siting study area. Brockington also searched the records of the South Carolina Institute of Anthropology and Archaeology ("SCIAA") to determine the locations of recorded archaeological sites in the siting study area. Each recorded architectural and archaeological site was added to the siting database (Cultural Resource layer in the Geographic Information System) and applied in the siting study. Chart ES-3 displays the cultural resource data that was included in the siting study database as a result of the records search at the SCDAH and SCIAA:

Chart ES-3: Previously Recorded Cultural Resources

Archaeological Resources	
Listed on the National Register of Historic Places ("NRHP")	1
Eligible for the NRHP	1
Potentially eligible for the NRHP	9
Not eligible for the NRHP	13
Eligibility for the NRHP undetermined	33
Total Recorded Archaeological Sites	**57**
Historic (Architectural) Resources	
Listed on the NRHP	1
Eligible for the NRHP	31
Potentially eligible for the NRHP	96
Not eligible for the NRHP	65
Total Recorded Historic Resources	**193**
Historic Cemeteries	
Eligible for the NRHP	2
Potentially eligible for the NRHP	2
Not eligible for the NRHP	4
Total Recorded Historic Cemeteries	**8**
Historic Districts	
Listed on the NRHP	2
Total Recorded Historic Districts	**2**

In addition to the records search, Brockington, on Duke Energy's behalf, conducted a "windshield reconnaissance" level survey of the 283.47-square mile siting study area. The purpose of the windshield reconnaissance level survey was to accomplish the following:

1. Confirm the continued existence of all previously recorded architectural resources;
2. Locate architectural resources not previously recorded, which appear to meet the minimum fifty year age requirement for the National Register of Historic Places ("NRHP"); and,
3. Identify potential NRHP eligible properties.

Chart ES-4 displays the resources that were identified during the windshield reconnaissance level survey, which were not previously recorded by the SCDAH or SCIAA:

Chart ES-4: Windshield Reconnaissance Level Survey Results

Historic sites potentially eligible for the NRHP	22
Historic cemeteries potentially eligible for the NRHP	1
Historic districts potentially eligible for the NRHP	2

Each cultural resource identified during the windshield reconnaissance survey was added to the siting database (Cultural Resource layer in the Geographic Information System) and applied in the siting study.

Protected Species

Duke Energy imported the S.C. Heritage Trust Program electronic database for listed species locations and overlaid it onto the 283.47-square mile siting study area. The Heritage Trust Program lists for Cherokee, York, and Union Counties were compared with the U.S. Fish and Wildlife Service ("USFWS") databases for the counties, and it was confirmed that protected species listed in the USFWS data were accounted for in the Heritage Trust data. Using the electronic Heritage Trust database, a Geographic Information System "data layer" was developed that includes the locations of all documented occurrences of protected species in the siting study area. There are six (6) recorded occurrences of species of "state concern" in the siting study area and no recorded occurrences of protected species that are included on the USFWS lists for Cherokee, York, or Union Counties. The recorded occurrences are shown in Chart ES-5:

Chart ES-5: Species of State Concern in the Siting Study Area

Number of Occurrences	Scientific Name	Common Name	County	USGS 7.5 Minute Quadrangle Map	Legal Status (State)
4	MINUARTIA UNIFLORA	ONE-FLOWER STITCHWORT	UNION	KELTON	SC
1	RHODODENDRON EASTMANII	MAY WHITE	YORK	SHARON	SC
1	MENISPERMUM CANADENSE	CANADA MOONSEED	CHEROKEE	KINGS CREEK	SC

Legal Status Legend
SC-Of Concern, State

Consequences of the Proposed Action

Affects to Environmental Resources:

The Lee Nuclear Station 230 kV and 525 kV Fold-In Lines will have minimal long-term effects on the environment of the siting study area. The greatest effect to environmental resources will be the conversion of 690.2 acres of forested land to cleared right-of-way. No protected species will be affected; wetlands requiring clearing in the right-of-way totals 2.6-acres, but none will be converted to upland; only 16.47% of the 986.78 acres in the selected route's right-of-way have soils that are classified by the National Resource Conservation Service as "Prime Farmland", or "Farmland of Statewide Importance", and their use for agricultural purposes will not be significantly affected; and Duke Energy will take appropriate measures to prevent any sedimentation of streams during right-of-way preparation and line construction.

The Lee Nuclear Station Fold-In Lines cross the Pacolet River, Abingdon Creek, Gilkey Creek, Thickety Creek, and 36 other streams that are tributaries to these primary drainages (*Figure 3*). Duke Energy will comply with the S.C. Stormwater Management and Sediment Reduction Act related to water quality protection and will comply with the recommendations of the agencies. The erosion-control measures and Best Management Practices employed will be sufficient to prevent any sediment movement beyond construction limits during a 10-year storm event. Measures will also be taken to prevent sediment, trash, debris, and other man-made pollutants from entering sensitive areas.

Affects to Cultural Resources:

The future Lee Nuclear Station Fold-In Lines constructed over selected Routes K-O will affect one (1) archaeological site that is listed in the records of the South Carolina Institute of Anthropology and Archaeology ("SCIAA"), three (3) historic sites that are recorded in the records of the South Carolina Department of Archives and History ("SCDAH"), and three (3) sites that are not recorded but appear to be candidate historic sites that may be eligible for the National Register of Historic Places ("NRHP"). The three unrecorded sites were identified as potentially eligible by Brockington and Associates, cultural resources consultants, when conducting a "windshield" survey on Duke Energy's behalf throughout the 283.47-square mile siting study area.

The archaeological site, which is listed as "eligibility undetermined", will be protected during construction; affects to the three historic sites that are recorded on state records will be very low to none; and affects to the three unrecorded historic sites that were identified during the windshield survey will be very low.

Prior to construction of the Lee Nuclear Station Fold-In 230 kV and 525 kV Lines, following the centerline survey, Duke Energy will conduct an intensive cultural resource investigation throughout the actual rights-of-way of selected Routes K-O. If previously undocumented cultural resources are discovered, Duke Energy will consult with agencies, as appropriate, and plan measures to protect the resources.

Affects to Land Use:

The most significant effect the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines will have on land use in the region will be the permanent restriction on structure erection and timber production in the right-of-way. Permitted uses in the right-of-way will include pastures, crop production, road construction, parking lots, and other uses that will not interfere with the safe, reliable operation of the future lines.

Zoning data for the siting study area was obtained from various sources, and 97.16% of the land in the selected routes' right-of-way has no designated land use; the vast majority of which is forest land. Chart ES-6 lists the acreages of land uses within the right-of-way of Routes K-O, which are the selected routes for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines.

Chart ES-6: Affected Land Use

Land Designation	Acres in the R/W	Percentage of Total R/W Acreage
No Designated Land Use	958.78	97.16%
Power Generation (Duke Energy)	13.08	1.33%
Residential (Rural, Single Unit)	1.46	0.15%
Secondary Road	9.16	0.92%
Upland Rights-of-Way	3.24	0.33%
Water	1.05	0.11%

Duke Energy conducted extensive field studies, augmented with aerial photography, to locate each occupied building in the siting study area (see Chart ES-2). Chart ES-7 displays the quantity of all occupied buildings that will be within 1,000' of the future Lee Nuclear Station 230 kV and 525 kV Fold-In Lines constructed along selected Routes K-O:

Chart ES-7: Proximity of Residences

Factor	Alternate Route K	Alternate Route O
Number of single-family residences within the proposed line's R/W	0	0
Number of single-family residences outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	0	0
Number of single-family residences between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	7	1
Number of single-family residences between 500' and 1000' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	20	10

Affects to the Scenic Quality of the Area:

The area through which the future Lee Nuclear Station 230 kV and 525 kV Fold-In Lines will run is characterized by rolling hills and large forest tracts interspersed with grass/pasture land, fallow land, and occasional agricultural production fields. Man-made modifications to the natural landscape are generally limited to sparse residential development along the public roads and associated farm buildings. The scenic quality of the area, therefore, is high and representative of natural piedmont landscape character. Two of the most significant scenic features in the siting study area are Worth Mountain, near the intersection of S.C. Highways 105 and 211, and the Broad River Corridor, which runs north-south through the approximate center of the siting study area. A 15.3-mile section of the Broad River is designated as a State Scenic River, all of which is within the study area. The designation extends from Duke Energy's Ninety-Nine Islands Dam southward to the Broad River's confluence with the Pacolet River.

Views of the future lines will modify the scenic quality of the area where they will be visible at close distances within the context of the natural landscape. Because of the naturally rolling topography and abundance of existing forests throughout the area surrounding the selected routes for the Lee Nuclear Station Fold-In Lines, views of the future Fold-In Lines from locations within close proximity to them will be significantly limited.

Duke Energy conducted a comprehensive visual analysis to determine the extent to which the future Fold-In Lines will be visible from residences, public roads, and the Broad River. The analysis included evaluating the potential view conditions from the Broad River by developing predictive, computer-generated "seen area" models and by carefully inspecting the segment between Ninety-Nine Islands Dam and S.C. Highway 211 from a canoe. Charts ES-8, ES-9, and ES-10 indicate the length of the line built over alternate Routes K-O that will be visible from residences, public roads, and the scenic segment of the Broad River.

Chart ES-8: Residential Visibility

View Condition	Route K	Route O	Total
Number of residences which may have **very high** visibility of the proposed line	2	0	2
Number of residences which may have **high** visibility of the proposed line	4	1	5
Number of residences which may have **moderate to high** visibility of the proposed line	1	0	1
Number of residences which may have **moderate** visibility of the proposed line	2	1	3
Number of residences which may have **low to moderate** visibility of the proposed line	20	1	21
Number of residences which may have **low** visibility of the proposed line	28	5	33
Number of residences which may have **very low** visibility of the proposed line	20	12	32

Chart ES-9: Visibility From Public Roads

View Condition	Route K	Route O	Total Length of Fold-In Line Visible From Public Roads
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 mile of a public viewing area (public road)	2.09	2.38	4.47
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a public viewing area (public road)	1.74	1.42	3.16
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a public viewing area (public road)	1.27	0.40	1.67

Chart ES-10: Visibility From the Broad River

View Condition	Route K	Route O	Total Length of Fold-In Line Visible From the Broad River Corridor
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 mile of a state recorded scenic waterway	0	0	0
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a state recorded scenic waterway	0	0	0
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a state recorded scenic waterway	0	0	0
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/2 to 1.0 mile of a state recorded scenic waterway	0	0	0

1.0 INTRODUCTION

Duke Energy Carolinas, LLC ("Duke Energy"), a subsidiary of Duke Energy Corporation, supplies electrical energy to more than 2 million customers in the piedmont and mountain regions of North and South Carolina. Stretching north to the Virginia border and south to Georgia, the Duke Energy service territory covers 22,000 square miles in one of the fastest growing regions in the United States. To maintain an adequate supply of reliable electrical energy to serve the projected future demand in its service territory, Duke Energy is currently preparing a combined construction and operating license ("COL") application for a new nuclear station, which has been named the William States Lee III Nuclear Station ("Lee Nuclear Station" or "Plant"). It is currently projected that the Plant will generate 2,234 megawatts of electricity. Duke Energy currently plans to submit the COL application to the Nuclear Regulatory Commission ("NRC") in late 2007 or early 2008.

Duke Energy completed a comprehensive siting study to identify possible locations across its Carolinas service area for use as a future nuclear generating site. This siting study used a detailed, consistent set of criteria to analyze sites, considering a wide variety of business, technical, environmental, regulatory and cost factors.

The study identified multiple potential sites in the Carolinas suitable for a new nuclear station. Based on a detailed review of the results of the siting study, Duke Energy selected a site in Cherokee County, S.C. Duke Energy determined that the Cherokee site is best suited for the future Lee Nuclear Station based on existing site infrastructure, previous site characterization work, water supply, and proximity to its 230 kV and 525 kV network that must be connected to the Plant's electrical switchyard.

To add the electrical energy generated by the Lee Nuclear Station to the existing electrical transmission system for delivery to users throughout Duke Energy's service territory, the Plant's electrical switchyard must be connected to Duke Energy's existing 230 kV and 525 kV transmission line network. Duke Energy electric system planners have determined that "folding-in" the existing Pacolet Tie-Catawba 230 kV and Oconee-Newport 525 kV Lines to the Plant's switchyard will provide the optimum electrical connections. A "fold-in" configuration requires two separate lines. The net effect will be to "break" the existing 230 kV and 525 kV lines, turn them at points on each side of the break, and run them to the switchyard. The segments of the existing lines between their two respective turning points will be de-energized. Thus, the Lee Nuclear Station switchyard will be connected to Duke Energy's existing electrical transmission system by

four new transmission lines: Two new double circuit 230 kV lines will connect the switchyard to separate points along the existing Pacolet Tie-Catawba 230 kV Line, and two new single circuit 525 kV lines will connect the switchyard to separate points along the existing Oconee-Newport 525 kV Line. The four lines will be placed in two separate rights-of-way, each containing one 230 kV line and one 525 kV line running parallel away from the switchyard until they reach the existing Pacolet Tie-Catawba 230 kV Line; the 525 kV lines in each corridor will continue running southward to the Oconee-Newport 525 kV Line.

2.0 PROJECT DESCRIPTION

2.1 Transmission Line Description

Duke Energy proposes to fold-in the existing Pacolet Tie-Catawba 230 kV and Oconee-Newport 525 kV Lines to the future Lee Nuclear Station switchyard (*Figure 1*). The planning parameters setout the following requirements for the 2-230 kV and 2-525 kV lines that will comprise the fold-in connections:

- The two 525 kV lines extending from the existing Oconee-Newport Line to the switchyard must be separated by a minimum of one mile for the maximum line length distance practical to reduce the possibility that a single unanticipated event (lightning, tornado, plane crash, sabotage, etc.) could interrupt serviceability of both lines.
- The two 230 kV lines running into the switchyard from the existing Pacolet Tie-Catawba 230 kV Line must be separated by a minimum of one mile for the maximum distance practical.
- One 230 kV line and one 525 kV line can run together in the same corridor.

Pursuant to the planning parameters, a comprehensive transmission line siting study was conducted, and two corridors, alternate Routes K-O (*Figure 14A*), were selected for the Lee Nuclear Station Fold-In Line routes. In each corridor, a new 230 kV line will extend from the existing Pacolet Tie-Catawba 230 kV Line to the switchyard, and a new 525 kV line will extend from the existing Oconee-Newport 525 kV Line to the switchyard. The existing 230 kV and 525 kV lines run generally in east-west directions south of the site selected for the Lee Nuclear Station. The Pacolet Tie-Catawba 230 kV Line is approximately 7-miles south of the site; the Oconee-Newport 525 kV Line is approximately 15-miles south of the site.

The proposed 525 kV transmission line in the western-most corridor, alternate Route K, will be 17.42-miles long; the 230 kV line will be 7.95-miles long. In the eastern-most corridor, alternate Route O, the proposed 525 kV transmission line will be 13.87-miles long, and the proposed 230 kV line will be 7.09-miles long. The width of the rights-of-way between the existing Pacolet Tie-Catawba 230 kV Line and the existing Oconee-Newport 525 kV Line, where the new 525 kV lines will run alone, will be 200 ft. The width of the rights-of-way from the existing Pacolet Tie-Catawba 230 kV Line to the Lee Nuclear Station switchyard, where new 230 kV and 525 kV lines will run parallel in each corridor, will be 325 ft.

The new 525 kV lines will utilize single-circuit, lattice framework, steel structures consisting of direct-embedded foundations (*Figure 16*). Steel "grillage" plates will be attached to the bottom of each of the four (4) structure legs at a depth of approximately 12 ft. below the ground surface. The structures will support six 2,515 KCM 76/19 ACSR (aluminum core, steel reinforced) conductors (three phases with two conductors per phase) and two 1/2 inch high strength steel overhead ground wires. Suspension insulator strings will be used to support each conductor and the ground wires will be directly attached to the structure framework. The minimum structure height will be 92 ft.; the maximum height will be 197 ft.; and the anticipated typical structure height will be 140 ft. The typical structure spacing (ruling span) will be 1,000 ft. Minimum conductor clearance over open ground will be 45 ft.

The new 230 kV lines will utilize double-circuit, lattice framework, steel structures consisting of direct-embedded foundations (*Figure 17*). Steel "grillage" plates will be attached to the bottom of each of the four (4) structure legs at a depth of approximately 12 ft. below the ground surface. The structures will support twelve 1272 ACSR conductors (six phases with two conductors per phase) and two 1/2 inch high strength steel overhead ground wires. Suspension insulator strings will be used to support each conductor and the ground wires will be directly attached to the structure framework. The minimum structure height will be 107 ft.; the maximum height will be 172 ft.; and the anticipated typical structure height will be 140 ft. The typical structure spacing (ruling span) will be 1,000 ft. Minimum conductor clearance over open ground will be 35 ft.

The design of the Lee Nuclear Station Fold-In Lines will meet or exceed all requirements of the National Electrical Safety Code in effect at the time of construction.

3.0 PURPOSE AND NEED FOR THE PROJECT

To add the electrical energy generated by the Lee Nuclear Station to Duke Energy's existing electrical transmission system for delivery to users throughout Duke Energy's service territory, the Plant's electrical switchyard must be connected to Duke Energy's existing 230 kV and 525 kV transmission line network. Duke Energy electric system planners have determined that "folding-in" the existing Pacolet Tie-Catawba 230 kV and Oconee-Newport 525 kV Lines to the Plant's switchyard will provide the optimum electrical connections. A "fold-in" configuration requires two separate lines. The net effect will be to "break" the existing 230 kV and 525 kV lines, turn them at points on each side of the break, and run them to the switchyard. The segment of the existing lines between their two turning points will be de-energized. Thus, the Lee Nuclear Station switchyard will be connected to Duke Energy's existing electrical transmission system by four new transmission lines: Two new double circuit 230 kV lines will connect the switchyard to separate points along the existing Pacolet Tie-Catawba 230 kV Line, and two new single circuit 525 kV Lines will connect the switchyard to separate points along the existing Oconee-Newport 525 kV Line.

4.0 ALTERNATIVES

Construction of the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines is necessary to distribute the electrical energy generated by the proposed Lee Nuclear Station to Duke Energy's customers in North and South Carolina. Therefore, given the assumption that the Lee Nuclear Station will be built, there are no alternatives to the proposed action. This section describes the development and consideration of alternative routes that were considered for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines.

4.1 Transmission Line Route Selection

Duke Energy conducted a comprehensive siting study to determine the routes for the 230 kV and 525 kV lines that will connect the Lee Nuclear Station to the existing electrical transmission grid. This was accomplished by executing the three-phase transmission line siting process that was first developed by Duke Energy in 1990 (*Appendix A*). The goal of the siting study was to select routes for required transmission connections that would minimize affects to land use, environmental resources, cultural resources, and aesthetic quality.

Duke Energy's transmission system planners determined that the Lee Nuclear Station should be connected to the existing Duke Energy 230 kV and 525 kV transmission system. These connections will be accomplished by folding in the Pacolet Tie-Catawba 230 kV and Oconee-Newport 525 kV Lines, which run in east-to-west directions south of the Lee Nuclear Station site. The "fold-in" configuration will require two 230 kV lines and two 525 kV lines, which must run in two separate corridors (one 230 kV line and one 525 kV line in each corridor) that are separated by a minimum distance of 1-mile for the maximum practical distance (Chapter 2). The primary objective line siting effort, therefore, was to conduct a comprehensive siting study that would lead to the selection of two transmission line corridors. Within each corridor, a single-circuit 525 kV line and double-circuit 230 kV line will run in a southerly direction from the Lee Nuclear Station switchyard. The 230 kV lines will extend in each corridor to the intersection with the existing Pacolet Tie-Catawba 230 kV Line, and each 525 kV Line will continue southward to the intersection with the existing Oconee-Newport 525 kV Line (*Figure 1*).

The first step in the siting study was the delineation of a ***siting study area*** through which any practicable transmission line corridors, or routes, might be developed. Duke Energy defined a 283.47-square mile geographic area for analysis by considering topography, the Broad River Corridor, land use and development patterns, transportation corridors, and the locations of (1) a

linear segment of the Oconee-Newport 525 kV Line; (2) a linear segment of the Pacolet Tie-Catawba 230 kV Line; and, (3) proposed site for the Lee Nuclear Station 525/230 kV switchyard (*Figure 2*). After reviewing these factors and conducting field reconnaissance throughout a broad area between the switchyard site and the 230 kV and 525 kV lines to be folded into the switchyard, it was judged that any routes or combination of routes connecting the existing 230 kV and 525 kV lines to the switchyard that extended beyond the boundaries of the siting study area would be inferior to routes running within it because of the increased environmental and land-use impacts associated with excessive line length.

Duke Energy used aerial photographs, topographic maps, and extensive field investigations to gather data about land use, aesthetic resources, cultural resources, natural resources, development patterns, and infrastructure in the 283.47-square mile siting study area. Federal, state, and local agencies were contacted to obtain land-use, cultural resource, natural resource, and environmental information and records.

All of the data locations and attributes were grouped into the following twelve (12) data layers in a Geographic Information System (GIS):

1. Cultural Resources;
2. Rare, Threatened and Endangered Species ("RTE");
3. Land Cover;
4. Soils (Prime Farmland Soils and Soils of Statewide Importance);
5. Land Use;
6. Future Land Use;
7. Zoning;
8. Occupied Buildings;
9. Public Visibility;
10. FEMA Flood Zones;
11. Hydrography; and,
12. Wetlands.

These twelve (12) data layers were mapped and, except for the data layers displaying cultural resources and the locations of rare, threatened, and endangered species, included in this report (*Figures 3* through *13*). The cultural resources and rare, threatened, and endangered species data layers cannot be publicly displayed pursuant to agreements with S.C. agencies. Once these data were mapped, Duke Energy held community workshops in the siting study area

designed to inform the public about the project, explain the siting process, and to solicit information from the public that might influence the development of alternate routes and their final evaluation. All of the data layers, except Cultural Resources and RTE Species, were displayed at the workshop. Through an agreement with South Carolina agencies, these two maps cannot be displayed publicly in a workshop venue.

Three weeks before the workshops, Duke Energy mailed invitations to 4,182 property owners of record in the siting study area along with Community Questionnaires designed to solicit substantive information about the siting study area that should be considered in the siting process. The Community Questionnaires were also available at the workshop. For public convenience, the community workshop was held at two locations — one in the western part of the siting study area (Bethlehem United Methodist Church, Union, S.C., on April 3, 2007) and one in the eastern part (Hillcrest Baptist Church, York, S.C., on April 5, 2007).

Attendees were invited to visit workstations staffed by project team members who, in one-on-one conversations, were able to address specific public concerns and solicit information from attendees that might affect routing. The workstations included the following:

- Registration and Questionnaire Information;
- Transmission System Planning;
- Transmission Line Route Siting Study and Route Selection;
- Aesthetic Considerations;
- Health and Safety (Primarily Electric and Magnetic Fields);
- Route Surveying and Right-of-Way Acquisition; and,
- Information about the Lee Nuclear Station.

One hundred-sixteen (116) people attended the first series of workshops, and 348 Community Questionnaires were completed and returned. The information provided by the public on completed Questionnaires was carefully analyzed and documented. Duke Energy compiled and verified information provided by workshop attendees and included on returned Questionnaires regarding land use and environmental concerns that might affect alternate route development and siting decisions. The data was entered into the GIS database.

In addition to the landowners that were invited to the community workshops, Duke Energy invited sixty-seven public officials (local elected officials, community leaders, State Agency personnel, etc.), and a number of them attended.

Results of the analysis of information provided on Community Questionnaires are included in *Appendix C*. The predominant concerns of residents and landowners were protection of water resources, the location of above-ground historic resources in relation to the future lines, the potential affects to residential property, and the future lines' visibility from residences. Also, a wildlife management area that encompasses a geographic feature known as Worth Mountain was identified by numerous questionnaire respondents as an area of special concern to local residents and landowners. Protection of streams was the major environmental concern, especially the Broad River, which is a designated South Carolina Scenic River from the Ninety-Nine Islands Dam to the confluence with the Pacolet River (15.3-miles in length).

Numeric weights were assigned to each of the individual data factors included on each of the twelve (12) data layers to represent each factor's relative influence on and sensitivity to transmission line routing. The weighted data (*Table 1*) were combined in the GIS, and a single map was developed that represented the cumulative effect of all weighted data to line routing. The map is called a *Suitability Composite* (*Figure 14*), and it displayed the combined, cumulative effects of the weighted data. The suitability composite displayed the areas of highest constraint to line routing, the areas of lowest constraint, and the full range of conditions between the highest and lowest within the 283.47-square-mile siting study area. Duke Energy used the Suitability Composite map to develop 21 alternative routes through low constraint areas to the extent practical for further analysis and evaluation (*Figure 14; Figures 15 and 15A*).

In June 2007, the alternate routes were presented to the public at a second series of community workshops, which was again held at locations within the siting study area. The number of landowners in the siting study area invited to the second series of workshops totaled 4,306. One workshop was held on June 18, 2007 at Rehoboth Baptist Church, and the second one was held at the Hillcrest Baptist Church on June 19, 2007. The second workshop series was attended by 183 people.

The purpose of the second workshop series was to provide complete information about the project, the transmission line siting process, and to provide the public an opportunity to inspect the alternate routes and provide information directly to Duke Energy's siting team that could have affected the evaluation of any alternate route. The 21 alternate routes were identified as Routes A through Route U. Attendees were encouraged to carefully examine the locations of the alternate routes that were displayed on an array of mapping, visit "workstations" where complete information was available regarding all aspects of the project, and to offer any information that may have influenced the evaluation of any of the alternate routes. The workstations included the following:

- Registration and Questionnaire Information;
- Transmission System Planning;
- Transmission Line Route Siting Study and Route Selection;
- Aesthetic Considerations;
- Health and Safety (Primarily Electric and Magnetic Fields);
- Route Surveying and Right-of-Way Acquisition; and,
- Information About the William States Lee III Nuclear Station.

Present at each workstation were Duke Energy project team members who were actively engaged in project planning, engineering, and siting. The statistical analysis results of the completed community questionnaires that had been completed in conjunction with first workshop series were also displayed at the June 18 and 19, 2007 workshops (*Appendix C*).

Using information gathered during the siting study, on the completed community questionnaires, and at four community workshops, Duke Energy identified nine route evaluation categories that were used to quantitatively and qualitatively compare the 21 alternate routes. These evaluation categories include the following:

1. Cultural and Natural Resource Factors
2. Land Cover Factors
3. Soil Factors
4. Property Ownership Factors
5. Land Use Factors
6. Occupied Building Factors
7. Public Visibility Factors
8. Residential Visibility Factors
9. Water Quality Factors

Within each category, criteria were developed that allowed a quantitatively and qualitatively evaluation and comparison of the 21 alternate routes based on the sensitivity of each data factor to transmission line construction and long-term operation. A weight ranging between 1 and 10 was assigned to each data factor according to its sensitivity to the proposed transmission lines. The most sensitive data factors within each evaluation category received a weight of 10, and less sensitive data factors received lower weights. For example, homes within 200' of an alternate line route where a future line would not be parallel and adjacent to a similar, existing line were given the highest weight of 10. Homes between 200' and 500' were given weights of 9, and homes from 500-1000' away from a line on an alternate route where it would not be parallel and adjacent to a similar, existing line were given weights of 7. In this example, the reduction in sensitivity correlates to increased distance from the future line and the presence or absence of landscape modifications

resulting from existing lines. The factor weights were then multiplied by each factor quantity (units, miles, acres, etc.) in each evaluation category for each alternate route to calculate individual factor scores. Individual factor scores for each alternate route were then added to arrive at a total evaluation category score for each alternate route in each evaluation category (*Tables 2 and 3*).

The total evaluation category scores were normalized on a one to ten scale in each evaluation category to prevent any single evaluation category from unjustifiably influencing the overall score for any of the alternate routes (the total of all evaluation category scores for each alternate route). For example, the unit of measure in the Occupied Buildings Factors category is units (i.e., the number of buildings), and miles is the unit of measure in the Public Visibility Factors category. The total evaluation score in the Occupied Buildings Factors category is often in the 1,000's compared to 10's in the Public Visibility Factors category. Without score normalization, the magnitude of the score in the Occupied Buildings Factors category would render the Public Visibility Factors category, and all other evaluation categories, meaningless.

Score normalization was accomplished by dividing the score of the route with the *highest total evaluation category score* into the total score for each alternate route and multiplying the dividend by ten. For example, assuming the total evaluation category scores for 3 alternate routes are **369**, **327**, and **141**, normalization on a 1 to 10 scale would be calculated as follows:

369/369=1.0(10)=**10** **327**/369=.886(10)=**8.86** **141**/369=.382(10)=**3.82**

The normalized evaluation category scores for the nine evaluation categories were added to determine a *total route evaluation score* for each alternate route. Alternate routes with the lowest total evaluation scores are ones that minimize impacts over the broadest array of environmental, land use, cultural resource, and aesthetic factors that were used to evaluate them.

The comprehensive evaluation determined that Alternate Route O is superior to the remaining 20 alternate routes that were evaluated (*Tables 2 and 3*). Chart 4.1-1 summarizes the rank order of the 21 alternate routes.

Chart 4.1-1: Alternate Route Siting Study Rank

Route	Siting Study Rank	Route	Siting Study Rank	Route	Siting Study Rank
A	20	**H**	12	**O**	1
B	17	**I**	7	**P**	3
C	14	**J**	13	**Q**	4
D	18	**K**	6	**R**	8
E	15	**L**	2	**S**	11
F	5	**M**	10	**T**	19
G	16	**N**	9	**U**	21

Following the ranking of the alternate routes in the siting study, alternate routes were paired to form the two corridors required to fold in the Pacolet Tie-Catawba 230 kV and Oconee-Newport 525 kV Lines to the Plant's switchyard. Routes that shared common links or did not meet the planning parameter of being separated by one-mile for the maximum possible distance were mutually exclusive. For example, the alternate routes that scored best and second best in the siting study, Routes O and L, respectively, were mutually exclusive because they shared a common segment. The pairing of eligible alternate routes yielded 115 combination route possibilities, and the combination of alternate Route O and alternate Route K ("Routes K-O") ranked as the superior pair (*Table 4*).

Duke Energy transmission line engineers and real estate professionals then completed an all inclusive cost estimate for the 115 pairs of alternate route combinations. Chart 4.1-2 displays the 15 route combinations that ranked best and the estimated cost for each:

Chart 4.1-2: Route Pair Siting Study Rank and Estimated Cost

Alternate Route Pair	Siting Study Rank	Estimated Cost (Millions)
K-O	1	$115.61
I-O	2	$117.06
O-S	3	$112.30
H-O	4	$116.80
J-O	5	$115.36
C-O	6	$119.31
E-O	7	$117.87
G-O	8	$116.25
B-O	9	$119.07
D-O	10	$117.63
L-P	11	$107.69
L-Q	12	$109.97
O-T	13	$112.88
L-R	14	$107.98
A-O	15	$118.96

Alternate Routes K-O were selected as the route combination for the two corridors required by the future Lee Nuclear Station 230 kV and 525 kV Fold-In Lines (Figure 14A). Compared to all other possible alternate route combinations, alternate Routes K-O are superior with regard to minimizing effects over the broadest range of environmental resource, cultural resource, land use, and scenic quality factors.

5.0 THE AFFECTED ENVIRONMENT

Duke Energy compiled information on the affected environment by reviewing the published literature, interpreting aerial photography, acquiring and reviewing agency information, and performing field investigations. A Geographic Information System (GIS) was used to analyze, model, and manage the data. This process allowed a quantitatively and qualitatively analysis of the siting study area and facilitated a comparison of the environmental consequences that are specifically associated with each alternate route associated with the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines, including selected Routes K-O.

5.1 Land Use

The siting study area includes 283.47-square miles (181,419.7-acres) in portions of southeast Cherokee, western York, and northeastern Union Counties, S.C. Existing land use in the study area was mapped through a review of aerial photography, zoning maps obtained from the counties and municipalities, and through field studies. The vast majority of land, 190.58-square miles, is currently covered by forest. The siting study area includes the Towns of Hickory Grove, Sharon, and a portion of Smyrna, all of which are in the York County portion (*Figure 1*). Except for commercial and moderate-high density residential development in the Towns of Hickory Grove and Sharon, the entire siting study area is generally characterized by sparse residential development along public roads, large tracts of forested land, pine plantations, pasture land, fallow land, and a minor amount of agricultural production land.

The major recreation amenities in the siting study are the Broad River and the Worth Mountain Park. A 15.3-mile stretch of the Broad River from the Ninety-Nine Islands Dam to the confluence with the Pacolet River was designated as a Type II State Scenic River by the South Carolina General Assembly in 1991. Since that time, an advisory council composed of river-bordering landowners, other local citizens, and a representative of the S.C. Department of Natural Resources has worked to preserve the river. The first major task of the advisory council was the creation of a management plan, which was completed in 1993. The priority of the advisory council is to educate, protect, conserve, and be an advocate for the well being of the river through open communication with interested partners. The advisory council works to develop responsible, limited and managed access to the river resource and to maintain open lines of communications with interested groups.

The Worth Mountain Park is a 1,647-acre recreation area in western York County. It is owned by York County and managed by the South Carolina Department of Natural Resources for recreation uses including hunting, hiking, biking, fishing, and other passive outdoor recreational activities. The Scenic Broad River is accessible from the Worth Mountain Park.

Figures 7, 8, 9, 10 and 11 display occupied buildings, land use, future land use, zoning, and land cover in the siting study area.

5.2 Topography

The 283.7-square mile siting study area is situated in the Piedmont Plateau of South Carolina. Geologically, this area is a dissected peneplain (i.e., an area reduced by erosion) containing a few remnants of an ancient mountain range. Similar to other areas in upstate South Carolina, the region is characterized by gently sloping to steep hills that are dissected by numerous branching drainage ways. The mean elevation of the siting study area is 563 ft. above mean sea level (msl). The standard deviation to the mean elevation is 74 ft.; thus, topographic elevations in the siting study area generally range from 489 ft. to 637 ft. msl, with occasional exceptions below and above the general range. The high points in the siting study area are McKowns Mountain, elevation 820 ft. msl, and Worth Mountain, which has a high point at elevation 703 ft. msl. (*Figure 6).*

5.3 Physiography

South Carolina covers more than 30,000 square miles and is divided into three physiographic provinces. A small area along the northwestern boundary of the State lies in the Blue Ridge physiographic province. The Piedmont physiographic province occupies the area between the Blue Ridge province and the Fall Line, and the area between the Fall Line and the Atlantic Ocean comprises the Coastal Plain physiographic province. The Blue Ridge and Piedmont provinces are composed of igneous and metamorphic rocks, mostly gneiss, schist, phyllite, and slate. Elevations are as high as 650 ft. msl at the Fall Line and over 3,500 ft. msl in the Blue Ridge province. The Coastal Plain province consists of variations of sand, clay, and limestone that overlie the Piedmont rocks. Elevations range from mean sea level at the coast to as much as 650 ft. msl at the Fall Line. The siting study area for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines includes portions of Cherokee, York, and Union Counties, all of which are located in the Piedmont physiographic province.

5.4 Prime Farmlands and Farmlands of State-Wide Importance

According to the National Resource Conservation Service ("NCRS"), Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The land could be cropland, pastureland, rangeland, forestland, or other land, but not urban built-up land or water. Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to modern farming methods. Farmlands of Statewide Importance are soils that are, in addition to prime farmland, important for the production of food, feed, fiber, forage, and oil seed crops. Generally, farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Prime Farmland and Farmland of Statewide Importance comprise 45,753.4-acres in the siting study area, according to the NRCS classification database. Additionally, there are 4,918-acres in the siting study area that are designated by the NRCS as Prime Farmland if drained and protected from flooding (*Figure 12)*.

5.5 Surface Water Hydrology

The basic source of water resources in the siting study area is precipitation, which averages approximately 45 inches annually. About 21 percent of the annual rainfall occurs during July and August through showers and thunderstorms (USDA 1975), and, on average, 38 percent occurs from January through April.

The siting study area is located in the Broad River drainage, which flows north to south through the approximate center of the study area. In addition to the Broad River, major drainages in the siting study area include the Pacolet River, Abingdon Creek, Gilkey Creek, Thickety Creek and Bullock Creek (*Figure 3*).

The South Carolina Department of Health and Environmental Control ("SCDHEC") has classified all waters in the siting study area as "freshwaters", which are defined as suitable for primary and secondary contact recreation and as a source for drinking water after conventional treatment, in accordance with the requirements of SCDHEC. Stream water quality throughout the siting study area is generally good, and small farm ponds are distributed throughout the study area.

National Wetland Inventory maps indicate that wetlands are distributed throughout the siting study area, with the most significant concentration of large, jurisdictional wetlands along Bullock

Creek, Thickety Creek, Abingdon Creek, Gilkey Creek, and the Pacolet River. There are few wetlands along the entire length of the Broad River within the siting study area. Forested wetlands are the predominant wetland type found, although there are some scrub/shrub wetlands (*Figure 4*).

The Federal Emergency Management Agency National Flood Insurance Program maps for Cherokee, York, and Union Counties, S.C. record 100-year floodplains on the Broad River, Pacolet River, Abingdon Creek, Gilkey Creek, Thickety Creek, Bullock Creek, and several minor tributaries that flow into these primary drainages (*Figure 5*).

5.6 Land Cover

An inventory of land cover in the siting study area was made through analysis and classification of aerial photography, satellite imagery, and field investigations (*Figure 11*). Most of the siting study area is rural, consisting of active pasture, hardwood forests, and pine forests. Chart 5.6-1 lists the quantity and types of land cover within the 283.7-square mile siting study area:

Chart 5.6-1: Land Cover Classifications and Quantities

Land Cover Classification	Total Acres	Percentage of Siting Study Area Acreage
Bottomland / Floodplain Forest	10,628.8	5.86
Closed Canopy Evergreen Forest / Woodland	14,355.2	7.91
Cultivated Land	97.2	0.05
Dry Deciduous Forest / Woodland	706.7	0.39
Dry Scrub / Shrub Thicket	10,198.0	5.62
Fresh Water	3,403.9	1.88
Grassland / Pasture	48,574.9	26.77
Marsh / Emergent Wetland	19.7	0.01
Mesic Deciduous Forest / Woodland	35,827.4	19.75
Mesic Mixed Forest / Woodland	48,595.1	26.79
Needle-Leaved Evergreen Mixed Forest / Woodland	1,662.6	0.92
Open Canopy / Recently Cleared Forest	132.4	0.07
Urban Development	4,959.0	2.73
Urban Residential	1,101.7	0.61
Wet Scrub / Shrub Thicket	1,157.1	0.64
Grand Total	**181,419.7**	**100.0**

The most common natural community found in the siting study area is the Oak-Hickory Forest, which is normally found along ridges and slopes. The representative Oak-Hickory community consists of closed-canopy woodland characterized by white oak (*Quercus alba*), northern red oak (*Q. rubra*), southern red oak (*Q. falcata*), post oak (*Q. stellata*), pignut hickory

(*Carya glabra*), mockernut hickory (*C. tomentosa*), tulip poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), and shortleaf pine (*P. echinata*). Sourwood (*Oxydendrum arboreum*), red maple, flowering dogwood (*Cornus florida*), and black gum (*Nyssa sylvatica*) are components of the sub-canopy. Red cedar (*Juniperus virginiana*) is also an associate in several areas, especially where the soils are less acidic or circumneutral. Much of the original Oak-Hickory Forests of the area have been removed due to agricultural uses, including pasture land and timber production.

Virginia pine (*P. virginiana*), loblolly pine (*Pinus taeda*), shortleaf pine, water oak (*Quercus nigra*), red cedar, black cherry (*Prunus serotina*), and sweet gum (*Liquidambar styraciflua*) are now growing on abandoned farmland, especially land farmed for several decades. Many of these stands are now making the transition to mixed pine and hardwood successional communities that over time, if left undisturbed, will revert to the Oak-Hickory Forest.

Another natural community within the siting study area is the Chestnut Oak Forest. The Chestnut Oak Forest is relatively common in the siting study area along ridges and south-facing slopes. In this community, chestnut oak (*Q. prinus*) is the dominant canopy tree with white oak, post oak, southern red oak, scarlet oak (*Q. coccinea*), sourwood, and mockernut hickory occurring at a lesser extent. Mountain laurel (*Kalmia latifolia*) and blueberry species are the typical shrubs. The herb layer is generally sparse due to the relatively dry conditions.

An additional significant natural community in the siting study is the Bottomland Forest. The canopy of this community is dominated by tulip poplar, sweetgum (*Liquidambar styraciflua*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), loblolly pine (*Pinus taeda*), and shagbark hickory (*Carya ovata*). The understory typically consists of ironwood (*Carpinus caroliniana*), red maple, flowering dogwood, and American holly (*Ilex opaca*). Chinese privet (*Ligustrum sinense*) and Japanese honeysuckle (*Lonicera japonica*) can form dense monotypic thickets in some of the areas. Cane (*Arundinaria gigantea*) may also form dense thickets. Herbs can include clearweed (*Boehmeria cylindrica*), spotted jewelweed (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*), various sedge species (*Carex* spp.), and primrose-leaf violet (*Viola primulifolia*).

In addition to the natural plant communities found in the siting study area, other communities commonly found in the siting study area include monotypic pine stands (e.g., shortleaf and loblolly pine), grazed pastureland, and fallow fields. The majority of pastureland and fallow field areas are represented by grasses and herbs such as broom sedge (*Andropogon virginicus*), red fescue (*Festuca rubra*), tall fescue (*Festuca arundinacea*), dog fennel (*Eupatorium*

capillifolium), horse nettle (*Solanum carolinense*), ragweed (*Ambrosia artemisiifolia*), daisy fleabane (*Erigeron annuus*), yarrow (*Achillea millefolium*), and pokeweed (*Phytolacca americana*). Early successional shrubs and small trees in these areas include blackberry (*Rubus argutus*), Japanese honeysuckle, Chinese privet, sweet gum, and loblolly pine.

Forested wetlands are present along several of the area's major drainages. They are typically colonized by privet (*Ligustrum sinense*), which became established following previous logging or clearing operations. American elderberry (*Sambucus canadensis*), American holly (*Ilex opaca*), and possum haw (*Viburnum nudum*) are the common sub-canopy species. Common vines are greenbriar (*Smilax laurifolia*), climbing hydrangea (*Decumaria barbara*), Japanese honeysuckle (*Lonicera japonica*), and cross vine (*Bignonia capreolata*). Herbaceous species include arrow arum (*Peltandra virginica*), primrose-leaf violet (*Viola primulifolia*), and sedges (*Carex* spp.).

5.7 Wildlife

Land use and the type of cover strongly influence the wildlife of the area. Hardwood and mixed hardwood-pine forests, interspersed by pasture and fallow fields, provide suitable habitat for quite a number of wildlife species (Duke Power Company 1976). The paucity of food and cover makes grazed land less suitable for wildlife, but the red fox (*Vulpes vulpes*), killdeer (*Charadrius* vociferus), and eastern garter snake (*Thamnophis sirtalis*) are common representatives. The open areas and early successional areas (i.e., hayfields, fallow fields, clear cuts, and existing rights-of-way) provide feeding areas for birds such as the eastern meadowlark (*Sturnella magna*), field sparrow (*Spizella pusilla*), barn swallow (*Hirundo rustica*), and eastern bluebird (*Sialia sialis*); small game such as cottontail rabbit (*Sylvilagus floridanus*), bobwhite quail (*Colinus virginianius*), and mourning dove (*Zenaida macroura*); and reptiles such as the black racer (*Coluber constrictor*), rough green snake (*Opheodrys aestivus*), and the broadhead skink (*Eumeces laticeps*). Other species in these habitats include the golden mouse (Ochrotomys nuttali) and the red-tailed hawk (*Buteo jamaicensis*). These areas provide food (seeds, insects, and small prey) as well as essential cover. The field borders offer nesting habitat and escape cover for birds such as the Carolina wren (*Thryothorus ludovicianus*), cardinal (*Cardinalis cardinalis*), eastern towhee (*Pipilo erythrophthalmus*), song sparrow (Melospiza melodia), and mockingbird (*Mimus polyglottos*).

The hardwood and mixed pine-hardwood forests of the area offer habitat for gray squirrels (*Sciurus carolinensis*), white-tailed deer (*Odecoilius virginianus*), and wild turkey (*Meleagris gallopavo*). Other representative species found in the forested areas include the southern flying

squirrel (*Glaucomys volans*), white-footed mouse (*Peromyscus leucopus*), opossum (*Didelphis virginiana*), common flicker (*Colaptes auratus*), red-eyed vireo (*Vireo olivaceus*), Carolina wren (*Thryothorus ludovicianus*), great-crested flycatcher (*Myiarchus crinitus*), eastern wood pewee (*Contopus virens*), black and white warbler (*Mniotilta varia*), indigo bunting (*Passerina cyanea*), eastern box turtle (*Terrapene carolina*), American toad (*Bufo americanus*), and black rat snake (*Elaphe obsoleta obsoleta*). The bottomlands adjacent to the major tributaries provide habitat for the beaver (*Castor canadensis*), raccoon (*Procyon lotor*), mallard (*Anas platyrhynchos*), wood ducks (*Aix sponsa*), Carolina chickadee (*Poecile carolinensis*), northern parula warbler (*Parula americana*), northern water snake (*Natrix sipedon sipedon*), gray treefrog (*Hyla versicolor*), northern chorus frog (*Acris crepitans*), and green frog (*Rana clamitans melanota*).

5.8 Fisheries

The Broad and Pacolet Rivers and Bullock Creek harbor game fish such as largemouth bass (*Micropterus salmoides*) and several sunfish species (*Lepomis* spp.). Other waters in the siting study area are represented by non-game species such as the rosyside dace (*Clinostomus funduloides*), yellowfin shiner (*Notropis lutipinnis*), and the creek chub (*Semotilus atromaculatus*).

Small farm ponds scattered throughout the siting study area offer opportunities to fish for largemouth bass (*Micropterus salmoides*), sunfish (*Lepomis* spp.), and catfish (*Ictalurus* spp.).

5.9 Rare, Threatened, or Endangered Resources

Records of the United States Fish and Wildlife Service ("USFWS") and South Carolina Heritage Trust Program were reviewed for data on rare, threatened, and endangered species ("RTE"). Charts 5.9-1 and 5.9-2 show the RTE species by county that are documented in federal records (USFWS list) for Cherokee and York Counties, S.C. (there are no federally protected species documented in Union County). Charts 5.9-3, 5.9-4, and 5.9-5 list the species by county that are documented by the S.C. Heritage Trust Program:

Chart 5.9-1: Cherokee County – U.S. Fish and Wildlife Service List

Species	Federal Status	State Status	Habitat	Threats
Plants				
Dwarf-flowered heartleaf *Hexastylis naniflora*	T	T	Acidic sandy loam soils along bluffs and nearby slopes, hillsides and ravines, in boggy areas adjacent to creekheads and streams	Site conversion from woodlands to pasture; residential/ industrial development; reservoir construction; herbicides

Chart 5.9-2: York County – U.S. Fish and Wildlife Service List

Species	Federal Status	State Status	Habitat	Threats
Birds				
Little amphianthus *Amphianthus pusillus*	T	T	Vernal pools on large isolated granite domes or gently rolling granite outcrops in the Piedmont physiographic region	Quarrying; off-road vehicle use and other vandalism associated with recreational use of granite outcrops
Schweinitz's sunflower *Helianthus schweinitzii*	E	E	Prairie and glade remnants, clearings and edges of upland woods on clayey soils with a high gravel content	Highway and utility line right-of-way maintenance and expansion; residential and commercial development; exotic weeds
Dwarf-flowered heartleaf *Hexastylis naniflora*	T	T	Acidic sandy loam soils along bluffs and nearby slopes, hillsides and ravines, in boggy areas adjacent to creekheads and streams	Site conversion from woodlands to pasture; residential/ industrial development; reservoir construction; herbicides

USFWS Status Legend
T = Threatened
E = Endangered

Note: There are no USFWS recorded occurrences in Union County.

Chart 5.9-3: Cherokee County – S.C. Heritage Trust Program List

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	LEGAL STATUS
ALLIUM CERNUUM	NODDING ONION	G5	S?	SC
ASTER GEORGIANUS	GEORGIA ASTER	G2G3	S?	SC
CAREX SCABRATA	ROUGH SEDGE	G5	S?	SC
HELIANTHUS LAEVIGATUS	SMOOTH SUNFLOWER	G4	S?	SC
HEXASTYLIS NANIFLORA	DWARF-FLOWERED HEARTLEAF	G2	S2	FT/ST
HYDRANGEA CINEREA	ASHY-HYDRANGEA	G4	S?	SC
MENISPERMUM CANADENSE	CANADA MOONSEED	G5	S?	SC
MONADNOCK		G?	S?	SC
MYOTIS AUSTRORIPARIUS	SOUTHEASTERN MYOTIS	G3G4	S1	SC
XEROPHYLLUM ASPHODELOIDES	EASTERN TURKEYBEARD	G4	S1	SC

Chart 5.9-4: York County – S.C. Heritage Trust Program List

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	LEGAL STATUS
ACRIS CREPITANS CREPITANS	NORTHERN CRICKET FROG	G5T5	S5	SC
AGALINIS AURICULATA	EARLEAF FOXGLOVE	G3	S1	SC
AGRIMONIA PUBESCENS	SOFT GROOVEBUR	G5	S1	SC
AMPHIANTHUS PUSILLUS	POOL SPRITE	G2	S1	FT/ST
ASTER GEORGIANUS	GEORGIA ASTER	G2G3	S?	SC
ASTER LAEVIS	SMOOTH BLUE ASTER	G5	S?	SC
CAMASSIA SCILLOIDES	WILD HYACINTH	G4G5	S2	RC
COLONIAL WATERBIRD		G?	S?	SC
CYPERUS GRANITOPHILUS	GRANITE-LOVING FLATSEDGE	G3Q	S?	SC
DASISTOMA MACROPHYLLA	MULLEIN FOXGLOVE	G4	S?	SC
ELEOCHARIS PALUSTRIS	SPIKE-RUSH	G5	S?	SC
ELIMIA CATENARIA	GRAVEL ELIMIA	G4	S?	SC
ELYMUS RIPARIUS	WILD-RYE	G5	S?	SC
ETHEOSTOMA COLLIS	CAROLINA DARTER	G3	S?	SC
EUPATORIUM SESSILIFOLIUM VAR VASEYI	THOROUGHWORT	G5T?	S?	SC
HELIANTHUS LAEVIGATUS	SMOOTH SUNFLOWER	G4	S?	SC
HELIANTHUS SCHWEINITZII	SCHWEINITZ'S SUNFLOWER	G2	S1	FE/SE
HYMENOCALLIS CORONARIA	SHOALS SPIDER-LILY	G2Q	S2	NC
ISOETES PIEDMONTANA	PIEDMONT QUILLWORT	G3	S2	SC
JUGLANS CINEREA	BUTTERNUT	G3G4	S?	SC
JUNCUS GEORGIANUS	GEORGIA RUSH	G4	S?	SC
LILIUM CANADENSE	CANADA LILY	G5	S1?	SC
LIPOCARPHA MICRANTHA	DWARF BULRUSH	G4	S2	SC
MELANTHIUM VIRGINICUM	VIRGINIA BUNCHFLOWER	G5	S?	SC
MENISPERMUM CANADENSE	CANADA MOONSEED	G5	S?	SC
MINUARTIA UNIFLORA	ONE-FLOWER STITCHWORT	G4	S?	SC
MONADNOCK		G?	S?	SC
NAJAS FLEXILIS	SLENDER NAIAD	G5	S?	SC

Chart 5.9-4 (continued)				
SCIENTIFIC NAME	**COMMON NAME**	**GLOBAL RANK**	**STATE RANK**	**LEGAL STATUS**
OUTCROP		G?	S?	SC
PANAX QUINQUEFOLIUS	AMERICAN GINSENG	G3G4	S2S3	RC
POA ALSODES	BLUE-GRASS	G4G5	S?	SC
QUERCUS BICOLOR	SWAMP WHITE OAK	G5	S1	SC
QUERCUS OGLETHORPENSIS	OGLETHORPE'S OAK	G3	S3	SC
RANA PALUSTRIS	PICKEREL FROG	G5	S?	SC
RANUNCULUS FASCICULARIS	EARLY BUTTERCUP	G5	S?	SC
RATIBIDA PINNATA	GRAY-HEAD PRAIRIE CONEFLOWER	G5	S?	SC
RHODODENDRON EASTMANII	MAY WHITE	G2	S2	SC
RUDBECKIA HELIOPSIDIS	SUN-FACING CONEFLOWER	G2	S1	NC
SCUTELLARIA PARVULA	SMALL SKULLCAP	G4	S?	SC
SILPHIUM TEREBINTHINACEUM	PRAIRIE ROSINWEED	G4G5	S1	SC
SOLIDAGO PTARMICOIDES	PRAIRIE GOLDENROD	G5	S?	SC
SOLIDAGO RIGIDA	PRAIRIE GOLDENROD	G5	S1	SC
THERMOPSIS MOLLIS	SOFT-HAIRED THERMOPSIS	G4?	S?	SC
TIARELLA CORDIFOLIA VAR CORDIFOLIA	HEART-LEAVED FOAM FLOWER	G5T5	S?	SC
TORREYOCHLOA PALLIDA	PALE MANNA GRASS	G5?	S?	SC
TRILLIUM RUGELII	SOUTHERN NODDING TRILLIUM	G3	S?	SC
VERBENA SIMPLEX	NARROW-LEAVED VERVAIN	G5	S?	SC
VERONICASTRUM VIRGINICUM	CULVER'S-ROOT	G4	S?	SC

Chart 5.9-5: Union County – S.C. Heritage Trust Program List

SCIENTIFIC NAME	**COMMON NAME**	**GLOBAL RANK**	**STATE RANK**	**LEGAL STATUS**
AMORPHA SCHWERINII	SCHWERIN INDIGOBUSH	G3	S1	SC
ASTER GEORGIANUS	GEORGIA ASTER	G2G3	S?	SC
CAREX GRACILLIMA	GRACEFUL SEDGE	G5	S?	SC
CAREX PRASINA	DROOPING SEDGE	G4	S?	SC
HACKELIA VIRGINIANA	VIRGINIA STICKSEED	G5	S?	SC
HELIANTHUS LAEVIGATUS	SMOOTH SUNFLOWER	G4	S?	SC
HYMENOCALLIS CORONARIA	SHOALS SPIDER-LILY	G2Q	S2	NC
MINUARTIA UNIFLORA	ONE-FLOWER STITCHWORT	G4	S?	SC
MONOTROPSIS ODORATA	SWEET PINESAP	G3	S1	RC
OPHIOGLOSSUM VULGATUM	ADDER'S-TONGUE	G5	S?	SC
OUTCROP		G?	S?	SC
RHODODENDRON EASTMANII	MAY WHITE	G2	S2	SC
SEDUM PUSILLUM	GRANITE ROCK STONECROP	G3	S2	NC
SILPHIUM TEREBINTHINACEUM	PRAIRIE ROSINWEED	G4G5	S1	SC
SOLIDAGO RIGIDA	PRAIRIE GOLDENROD	G5	S1	SC
VERBENA SIMPLEX	NARROW-LEAVED VERVAIN	G5	S?	SC

S.C. Heritage Trust Program Legal Status Legend:

FE = Federal endangered
FT = Federal threatened
NC = Of concern, national (unofficial-plants only)
RC = Of concern, regional (unofficial-plants only)
SE = State endangered (official state list-animals only)
ST = State threatened (official state list-animals only)
SC = Of concern, state

Duke Energy electronically imported the S.C. Heritage Trust Program digital database for listed species locations and overlaid it onto the 283.47-square mile siting study area. The Heritage Trust Program lists for Cherokee, York, and Union Counties were compared with the USFWS databases for the counties, and it was confirmed that protected species listed in the USFWS data were listed in the Heritage Trust data. Using the electronic Heritage Trust database, a Geographic Information System "data layer" was developed that includes the locations of all documented occurrences of protected species in the siting study area. There are six (6) recorded occurrences of species of "state concern" in the siting study area and no recorded occurrences of protected species that are included on the USFWS lists for Cherokee, York, or Union Counties. The recorded occurrences are shown in Chart 5.9-6:

Chart 5.9-6: Species of State Concern in the Siting Study Area

Number of Occurrences	Scientific Name	Common Name	County	USGS 7.5 Minute Quadrangle Map	Legal Status (State)
4	MINUARTIA UNIFLORA	ONE-FLOWER STITCHWORT	UNION	KELTON	SC
1	RHODODENDRON EASTMANII	MAY WHITE	YORK	SHARON	SC
1	MENISPERMUM CANADENSE	CANADA MOONSEED	CHEROKEE	KINGS CREEK	SC

5.10 Cultural Resources

In September 2006, Brockington and Associates, Inc. ("Brockington") conducted background research on Duke Energy's behalf to determine previously recorded architectural and archaeological resources in the 283.47-square mile siting study area. Records were reviewed at the South Carolina Department of Archives and History ("SCDAH"), including the SCDAH Finding Aid, to determine recorded architectural resources in the siting study area. The Finding Aid is a printed document that lists all cultural resources projects that have occurred in a given county. Brockington also searched the records of the South Carolina Institute of Anthropology and Archaeology ("SCIAA") to determine the locations of recorded archaeological sites in the siting study area. Each recorded architectural and archaeological site was added to the siting database (Cultural Resource layer in the Geographic Information System) and applied in the siting study. Chart 5.10-1 displays the cultural resource data that was included in the siting study database (recorded resources) as a result of the records search at the SCDAH and SCIAA:

Chart 5.10-1: Previously Recorded Cultural Resources

Archaeological Resources	
Listed on the National Register of Historic Places ("NRHP")	1
Eligible for the NRHP	1
Potentially eligible for the NRHP	9
Not eligible for the NRHP	13
Eligibility for the NRHP undetermined	33
Total Recorded Archaeological Sites	**57**
Historic (architectural) Resources	
Listed on the NRHP	1
Eligible for the NRHP	31
Potentially eligible for the NRHP	96
Not eligible for the NRHP	65
Total Recorded Historic Resources	**193**
Historic Cemeteries	
Eligible for the NRHP	2
Potentially eligible for the NRHP	2
Not eligible for the NRHP	4
Total Recorded Historic Cemeteries	**8**
Historic Districts	
Listed on the NRHP	2
Total Recorded Historic Districts	**2**

In addition to the records search, Brockington, on Duke Energy's behalf, conducted a "windshield reconnaissance" level survey of the 283.47-square mile siting study area. As outlined in National Register Bulletin #24, a windshield reconnaissance level survey is useful in ascertaining "a general picture of the distribution of different types and styles [of architectural resources], and of the character of different neighborhoods" (Parker 1985:35-36). Windshield surveys are also useful for making *preliminary* determinations of eligibility to the NRHP based on the architectural integrity of properties, but not in ascertaining the historical associations a property might possess.

The windshield reconnaissance consisted of a vehicular inspection of architectural resources visible from all publicly accessible roads within the siting study area in Cherokee, Union, and York Counties, S.C. It is important to note that in addition to structures located in view of public roads, the topographic and aerial maps indicated structures located along private roads as well as abandoned and existing field roads. If a previously recorded resource was found to be inaccessible, Brockington referenced current aerials to determine whether a building still exists.

The purpose of the windshield reconnaissance level survey for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines siting study was to accomplish the following:

1. Confirm the continued existence of all previously recorded architectural resources;
2. Locate architectural resources not previously recorded, which appear to meet the minimum fifty year age requirement for the National Register of Historic Places ("NRHP"); and,
3. Identify potential NRHP eligible properties.

Chart 5.10-2 displays the resources that were identified during the windshield reconnaissance level survey that were not previously recorded by the SCDAH or SCIAA:

Chart 5.10-2: Windshield Reconnaissance Level Survey Results

Historic sites potentially eligible for the NRHP	22
Historic cemeteries potentially eligible for the NRHP	1
Historic districts potentially eligible for the NRHP	2

5.11 Visual Resources

Much of the siting study area is covered by large forested tracts that are interspersed with large expanses of grassland and fallow lands, which create a very natural and pleasing scenic condition. Residential development, except for the area in and around the Towns of Sharon, Hickory Grove and Smyrna, is very low density, rural residential, and generally limited to the rural road corridors. Numerous churches and cemeteries are interspersed throughout the study area along the public roads, and they contribute to the visual quality of the region as do widely spread farm houses with granaries, barns, sheds and other out-buildings. Other man-made modifications to the natural landscape are extremely limited within the siting study area.

The topography in the siting study area transitions from broad, level flood plain/bottomland to lightly to moderately sloping hillsides that ascend to broad, rounded ridges. Occasionally, slopes near drainages are moderate to steep. A pleasant blend of hardwood forests and rolling grassland provides an occasional vista, but opportunities for long-distance vistas are significantly limited by the rolling topography, lack of high elevation points, and wooded tracts. One topographic feature in the siting study area, Worth Mountain, ascends to an elevation of 703 ft. msl, which is approximately 100 ft. higher than the general elevation of the immediately surrounding area. This elevated topographic feature provides the opportunity for panoramic vistas of the surrounding countryside, although the opportunities are limited by the forested conditions. Also, views of Worth Mountain are pleasing when viewed from S.C. Highway 211 east of the Broad River Bridge.

The Broad River, from Ninety-Nine-Islands Dam to its confluence with the Pacolet River, has been designated as a State Scenic River. This 15.3-mile segment of the Broad River is unique due to its natural condition. Virtually no development occurs in close proximity to the river corridor; few roads are near the river; and only one road crosses the river, S.C. Highway 211, in the 15.3-mile designated Scenic River segment. Much of the area immediately adjacent to the river along its length in the siting study area is forested, and where pasture land and fields are present near the river, wide riparian buffers have largely been left intact. The river corridor runs north to south through the approximate center of the siting study area. It constitutes a significant natural area that is represented by mature Bottomland Forest associations in the riparian zones on each side of the river that extends, generally, throughout the associated floodplain zone. The areas of mature forests contribute to the unique and scenic qualities of the Scenic Broad River.

The scenic quality throughout most of the siting study area is high and representative of natural piedmont landscape character.

6.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes short- and long-term affects to environmental resources, land use, cultural resources, and scenic resources that will result from the construction and operation of the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines along selected Routes K-O.

6.1 Soils

The potential for soil erosion exists where it will be necessary to expose mineral soils during grading associated with access road construction. Prudent construction and erosion-control measures will be used to avoid potential minor, short-term impacts and disturbed soils will be stabilized by seeding disturbed areas within 30-days of the completion of grading activities as construction progresses over the length of the rights-of-way. Grading and earthwork activities will comply with the S.C. Stormwater Management and Sediment Reduction Act. Duke Energy will use clearing, seeding, and erosion-control procedures that meet or exceed the standards set forth in local, state, and federal requirements and will comply with agency recommendations regarding prevention of soil erosion and elimination of sediment movement. All construction practices will comply with Duke Energy's *Best Management Practices for Transmission Line Construction.*

6.2 Water Resources

Each of the two alternate routes that comprise the selected route for the Lee Nuclear Station Fold-In 230 kV and 525 kV Lines, alternate Routes K and O, will cross the Pacolet River, Abingdon Creek, Gilkey Creek, and Thickety Creek, which, together with the Broad River and Bullock Creek, are the major drainages in the siting study area (*Figure 3).* The selected Routes K-O do not cross the Broad River or Bullock Creek. In addition to the major drainages crossed, Route K crosses 22 tributaries to the major drainages, and Route O crosses 14. At stream crossing points, 50'-buffers on each side will be hand cut, removing only those trees that will interfere with the reliable, safe operation of the Fold-In Lines. To the maximum practical extent, low growing will be left intact, and root mats in the buffer zones will not be disturbed. The Fold-In Lines will not parallel streams in a manner that will not allow a 50-foot buffer (minimum) between streams and the cleared right-of-way.

Construction of the lines will present the potential for erosion and runoff contributions to nearby streams and wetlands; however, Duke Energy will carefully design measures and plan work to prevent any sediment-laden runoff beyond designed erosion-control devices (sediment basins, sediment traps, silt fences, etc.). Duke Energy will comply with the S.C. Stormwater Management

and Sediment Reduction Act related to water quality protection and will comply with the recommendations of the agencies. All activities will be conducted in a manner that will not jeopardize the State water quality standards and existing water uses. The erosion-control measures and Best Management Practices employed will be sufficient to prevent any sediment movement beyond construction limits during a 10-year storm event. Measures will also be taken to prevent sediment, trash, debris, and other man-made pollutants from entering sensitive areas.

Affects to wetlands will be minor (*Figure 4)*. No access roads will be built in wetlands; no wetland contours will be changed; and no wetlands will be converted to uplands. Based on an analysis of the wetlands included in the National Wetlands Inventory and preliminary engineering parameters for line design, it will not be necessary to place any line structures in wetland areas. Duke Energy will use selective clearing measures in the forested wetlands, leaving the root zone and as much low growing vegetation as possible in the wetlands and associated wetland buffers to prevent erosion. Only those trees that pose a current or potential safety problem (i.e., trees that would interfere with the reliable, safe operation of the line) will be removed. All clearing in forested wetlands will be done by hand-clearing methods, and no mechanized equipment be allowed in wetlands. Before any clearing and access road construction begins, project supervisors will be given plan-and-profile drawings for the project to provide them with locations of the structures and specific locations and requirements of any sensitive areas, including stream buffers and wetlands. All state and federal permits related to wetlands and water quality protection will be obtained before construction begins. Chart 6.2-1 lists all right-of-way preparation activities that could potentially affect sensitive resources associated with the protection of water quality.

Chart 6.2-1: Affected Wetlands and Stream Buffers

Construction Activity	**Route K**	**Route O**	**Total**
Acres of right-of-way requiring hand clearing within 100' of any water feature (stream, river, lake, or pond)	40.9	27.4	68.3
Acres of wetland--type PSS, Palustrine Scrub/Scrub--impacted by clearing within the wetland	0.1	0.0	0.1
Acres of wetland--type PFO, Palustrine Forested--impacted by clearing within the wetland	1.9	0.7	2.6
Grand Total	**42.9**	**28.1**	**71.0**

6.3 Flood-Prone Areas

Duke Energy obtained the Federal Emergency Management Agency National Flood Insurance Program maps for Cherokee, York and Union Counties to determine the extent of flood-prone areas in the siting study area (*Figure 5*). The data was added to the siting data base and is summarized for selected Routes K-O in Chart 6.3-1.

Chart 6.3-1: Affects to FEMA Flood Zones

Condition	Route K	Route O	Total
Acres of right-of-way within the 100-Year Floodplain (No Base Flood Elevation Determined)	41.6	24.2	65.8
Acres of right-of-way outside the 100-Year Floodplain	501.4	419.6	921.0
Grand Total	**543.0**	**443.8**	**986.8**

Duke Energy will avoid locating the 230 kV and 525 kV transmission line structures in flood zones wherever possible, but the limited mass of the lattice steel structures at the ground line will not pose a significant obstacle to floodwater and floating debris if placing a structure or structures in the 100-year floodplain proves unavoidable.

6.4 Land Use

The most significant effect the Lee Nuclear Station 230 kV and 525 kV Lines will have on land use in the region will be the permanent restriction on structure erection and timber production in the right-of-way. Permitted uses in the right-of-way will include pastures, crop production, road construction, parking lots, and other uses that will not interfere with the safe, reliable operation of the future lines.

Zoning data for the siting study area was obtained from various sources, and 97.16% of the land in the selected routes' right-of-way has no designated land use; the vast majority of which is forest land (*Figure 10)*. Chart 6.4-1 lists the acreages of land uses within the proposed right-of-way for the future for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines (Routes K-O):

Chart 6.4-1: Affected Land Use

Land Designation	Acres in the R/W	Percentage of Total R/W Acreage
No Designated Land Use	958.78	97.16%
Power Generation (Duke Energy)	13.08	1.33%
Residential (Rural, Single Unit)	1.46	0.15%
Secondary Road	9.16	0.92%
Upland Rights-of-Way	3.24	0.33%
Water	1.05	0.11%

Extensive field studies, augmented by aerial photography and helicopter reconnaissance, were conducted to determine the locations of all occupied buildings in the siting study area (*Figure 7)*. Each building in the siting study area was added to the geographic information system data base for the project and applied to the development and evaluation of the alternate routes in terms of proximity to them. Chart 6.4-2 displays the quantity of all occupied buildings that will be within 1,000 ft. of the future Lee Nuclear Station 230 kV and 525 kV Fold-In Lines along alternate Routes K-O:

Chart 6.4-2: Proximity of Residences

Factor	Route K	Route O
Number of single-family residences within the proposed line's R/W	0	0
Number of single-family residences outside of the R/W and within 200' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	0	0
Number of single-family residences between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	7	1
Number of single-family residences between 500' and 1000' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	20	10

6.5 Land Cover

An inventory of land cover in the siting study area was made through analysis and classification of aerial photography, satellite imagery, and field investigations (*Figure 11*). Most of the siting study area is rural, consisting of active pasture, hardwood forests, and pine forests. Chart 6.5-1 lists the quantity and types of land cover that will be affected by development of the selected Routes K-O.

Chart 6.5-1: Affects to Land Cover

Land Cover Classification	Route K (Acres)	Route O (Acres)	Total Acres	Percentage of Classification in Siting Study Area to be Affected
Bottomland / Floodplain Forest	21.2	6.7	27.9	0.26
Closed Canopy Evergreen Forest / Woodland	128.9	50.7	179.6	1.25
Cultivated Land	0.0	0.0	0.0	0.0
Dry Deciduous Forest / Woodland	0.4	1.5	1.9	0.27
Dry Scrub / Shrub Thicket	48.2	38.8	87.0	12.31
Fresh Water	10.0	5.2	15.2	0.0
Grassland / Pasture	90.4	86.3	176.7	<1*
Marsh / Emergent Wetland	0.0	0.0	0.0	0.0
Mesic Deciduous Forest / Woodland	60.9	90.0	150.9	0.42
Mesic Mixed Forest / Woodland	159.7	154.9	314.6	0.65
Needle-Leaved Evergreen Mixed Forest / Woodland	10.7	4.6	15.3	0.92
Open Canopy / Recently Cleared Forest	0.0	0.0	0.0	0.0
Urban Development	12.2	5.0	17.2	<1*
Urban Residential	0.0	0.0	0.0	0.0
Wet Scrub / Shrub Thicket	0.3	0.1	0.4	0.03
Grand Total	543.0	443.8	986.8	

* Classification will not be affected by clearing impacts. Affects will be limited to the actual footprint area of structures, which are estimated to be less than 1-acre within the area of the land cover classification.

The most significant impact to land cover that will result from construction of the Lee Nuclear Station 230 kV and 525 kV Lines will be the clearing of approximately 690.2 acres of forests and the resulting affects to wildlife habitat (Section 6.6).

6.6 Wildlife

Studies conducted by Duke Energy (Duke Power Company et al, 1976) and those of other investigators (Michael et al., 1976; Shreiber et al., 1976; Cavanagh et al., 1976) show that the clearing of a corridor through a woodland will have an effect on the fauna of the immediate area. In the Duke study, which was conducted in the Piedmont section of South Carolina, it was found

that herbaceous and brushy plant communities that become established in Piedmont transmission line corridors provide a habitat that:

1) Preclude use of the area by some of the pre-existing species, such as some woodland birds and small mammals;
2) Enhance aspects of the area for some of the pre-existing species, providing them with certain beneficial factors; and,
3) Encourage invasion by species previously absent in the area.

Species discouraged from inhabiting cleared areas of the corridor are those restricted to woodland habitats. Of the birds of the Piedmont, such species would include many warblers, woodpeckers, Carolina chickadee, tufted titmouse, yellow-billed cuckoo, crested flycatcher, brown-headed nuthatch, wood thrush, red-eyed vireo, and rose-breasted grosbeak, among others. Examples of mammals that would be discouraged from the area would be the white-footed mouse and golden mouse.

Species that would benefit from the new habitat provided by cleared areas include vultures, hawks, foxes, and possibly other predators. These species, though generally associated with other habitats, seem to concentrate portions of their activities in cleared corridors. Vultures and hawks (especially the red-tailed hawk) are commonly seen perched on transmission line towers or soaring over the corridors. Possibly these perches, in conjunctions with the dense rodent populations of the corridors, provide better hunting areas. The fact that small mammal populations are denser in corridors than in woodlands may account for the use of corridors by foxes. Studies have shown that foxes commonly feed on the cotton rat and meadow vole in transmission line corridors. Thus, a typical woodland animal, such as the gray fox, may commonly venture into corridor habitats because of the accessible food supply.

Species previously absent or uncommon that invade an area following the establishment of a transmission line corridor are those typically associated with open spaces or with herbaceous or brushy habitats. In the Piedmont, such species of birds would include various sparrows, meadowlark, red-winged blackbird, blue grosbeak, prairie warbles, yellow-throat, yellow-breasted chat, and indigo bunting, among others. Invading mammals include the rice rat, cotton rat, meadow vole, and harvest mouse. Certain amphibians (upland chorus frog, southern leopard frog) that prefer to breed in open grassy areas also benefit from transmission line corridors.

Among the birds that inhabit transmission line corridors, some actually live in the herbaceous vegetation of the corridor, while other inhabit areas along streams passing through the

corridor or trees adjacent to the corridor. Examples of the former include the field sparrow, song sparrow, meadowlark, red-wing, and yellow-throat, among others. Species inhabiting trees on the immediate edge of a corridor or trees along a stream crossing are sometimes called "edge species". These species, which include in part the indigo bunting, yellow-breasted chat, prairie warbler, and towhee, prefer to inhabit woodlands adjacent to open spaces. Thus, while they inhabit trees, their presence is due to the open nature of the corridor.

Also, high voltage transmission line corridors, as managed by Duke Energy, support an assemblage of non-game species. The planted and invading native vegetation, in conjunction with the small trees left in selected locations, create a habitat filled by species preferring open herbaceous habitats and edge habitats. These anticipated and predicted corridor clearing effects will occur over approximately 70% of the Lee Nuclear Station 230 kV and 525 kV Line (alternate Routes K-O). The areas that will be traversed contain large tracts of woodlands. In these expansive forests, the corridor will represent openings that are in early stages of succession. The creation of such openings in heavily timbered areas is a standard wildlife management technique to increase the carrying capacity for woodland game. Thus, the open corridor segments with invading herbaceous species should be advantageous to the larger game animals in the area (deer and wild turkey), as well as certain non-game species.

6.7 Prime Farmlands and Farmlands of State-Wide Importance

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The land could be cropland, pastureland, rangeland, forestland, or other land, but not urban built-up land or water. Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to modern farming methods. In general, prime farmlands have an adequate and dependable moisture supply, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time. Typically they do not flood during the growing season or they are protected from flooding.

Farmlands of Statewide Importance are soils that are, in addition to prime farmland, important for the production of food, feed, fiber, forage, and oil seed crops. Generally, farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some

may produce as high a yield as prime farmlands if conditions are favorable. Chart 6.7-1 lists the acreage of prime farmland and farmland of statewide importance that will be in the right-of-way selected routes, Routes K-O, of the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines (*Figure 12)*.

Chart 6.7-1: Affected Prime Farmland and Farmland of Statewide Importance

Class	Route K (Acres)	Route O (Acres)
Farmland of Statewide Importance	59.6	32.5
Prime Farmland	19.0	22.7
Prime Farmland if Drained and Protected From Flooding or Not Frequently Flooded	11.6	17.1
Grand Total	90.2	72.3

Although the rights-of-way for the Lee Nuclear Station Fold-In Lines will encompass prime farmland and farmland of statewide importance, agricultural uses will only be affected where tower structures are located. Farming, including crop production, is a permitted use on Duke Energy transmission line rights-of-way throughout its system.

6.8 Rare, Threatened, or Endangered Resources

Duke Energy imported the S.C. Heritage Trust Program digital database for protected species, including the locations of documented occurrences, and overlaid it onto the 283.47-square mile siting study area. The Heritage Trust Program lists for Cherokee, York, and Union Counties were compared with the U.S. Fish and Wildlife Service ("USFWS") databases for the counties, and it was confirmed that protected species listed in the USFWS data were accounted for in the Heritage Trust data. Using the electronic Heritage Trust database, a Geographic Information System "data layer" was developed that includes the locations of all documented occurrences of protected species in the siting study area. There are six (6) recorded occurrences of species of "state concern" in the siting study area and no recorded occurrences of protected species that are included on the USFWS lists for Cherokee, York, or Union Counties. None of the six occurrences of species of state concern are in or near the right-of-way of Routes K-O, the selected routes for the Lee Nuclear Station 230 kV and 525 kV Lines. Following the centerline survey of Routes K-O and before beginning of right-of-way preparation, Duke Energy will conduct a comprehensive biological survey along the entire length of the selected routes. If any undocumented species listed on the S.C. Heritage Trust or USFWS lists are discovered, Duke Energy will take appropriate action, which may include notifying appropriate the agencies, marking the species in the field for protection during construction and operation of the lines, relocating the plants, or other mitigation

as may be warranted.

An issue associated with large raptors is their vulnerability to power line electrocution. Their large size, wingspan, and perching make them susceptible to electrocution on certain transmission line designs. Transmission line structures with inadequate spacing between phases (i.e., less than 60 inches of separation between conductors and/or grounded hardware) can cause raptor electrocutions. With this in mind, the USFWS has recommended, under authority of the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act, that all new transmission structures be equipped with design features that prevent these electrocutions. Such features typically include designs that (1) make the distance between phase conductors greater than the wingspread of the bird that is landing, perching, or taking off; and (2) increase the distance between grounded hardware (e.g., ground-wires) and an energized conductor to more than the largest bird's wingspread or the distance from the tip of the bill to the tip of the tail. The 230 kV and 525 kV structures that will be used on the Lee Nuclear Station 230 kV and 525 kV Lines will be "raptor safe" and meet the guidelines recommended in Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996 (Avian Power line Interaction Committee 1996); therefore, raptor electrocutions are not anticipated on this project.

6.9 Cultural Resources

The future Lee Nuclear Station Fold-In Lines constructed over selected Routes K-O will affect one (1) archaeological site that is listed in the records of the South Carolina Institute of Anthropology and Archaeology ("SCIAA"), three (3) historic sites that are recorded in the records of the South Carolina Department of Archives and History ("SCDAH") , and three (3) sites that are not recorded, but appear to be candidate historic sites that may be eligible for the National Register of Historic Places ("NRHP"). The three unrecorded sites were identified as potentially eligible by Brockington and Associates, cultural resources consultants, when conducting a "windshield" survey on Duke Energy's behalf throughout the 283.47-square mile siting study area. Chart 6.9-1 lists cultural resource factors that were included in the evaluation of the 21 alternate routes and shows the resources affected by Routes K-O.

Chart 6.9-1: Affected Cultural Resources

Cultural and Natural Resource Factors	Route K	Route O
Number of Recorded Archaeological Sites in the R/W that may be disturbed by line construction (Listed on the NRHP, Eligible for NRHP, Potentially Eligible, Eligibility Undetermined)	1	0
Number of Recorded Archaeological Sites in the R/W that may be disturbed by line construction (Not Eligible for NRHP)	0	0
Number of Recorded Archaeological Sites within 100' of the R/W where low potential for disturbance exists (Listed on the NRHP, Eligible for NRHP, Potentially Eligible, Eligibility Undetermined)	0	0
Number of Recorded Archaeological Sites within 100' of the R/W where low potential for disturbance exists (Not Eligible for NRHP)	0	0
Number of Historic Sites in the R/W (Listed on the NRHP, Eligible for NRHP, Potentially Eligible)	0	0
Number of Historic Sites within 1/4 mile of the Line that have a view of the line (Listed on the NRHP, Eligible for NRHP, Potentially Eligible)	0	0
Number of Historic Sites between 1/4 - 1/2 mile of the line that will have a view of the line (Listed on the NRHP, Eligible for NRHP, Potentially Eligible)	0	6
Number of Historic Sites between 1/2 - 1 1/4 mile of the line that will have a view of the line (Listed on the NRHP, Eligible for NRHP, Potentially Eligible)	0	0

The following is a description of the one archaeological site and six historic sites that will be affected by Lee Nuclear Station Fold-In Lines if built over selected Routes K-O. The description includes site identifier, the site's NRHP eligibility status, the distance the resource would be from the nearest point along the Fold-In Line, a discussion describing the resource, and the likely affect that would result from construction of the Fold-In Line along the selected route.

Archeological Site (1)

Site Number: 38CK52

Status: Eligibility undetermined.

Distance from selected Routes K-O: The site is located within the future Fold-In Line right-of-way (Route K just south of McKowns Mountain Road).

Discussion: Site 38CK52 is an aboriginal lithic scatter that was severely eroded at the time of recordation on July 25, 1979 by J.L. Tippett. There were no eligibility or management recommendations made at the time of recording and in the opinion of Brockington, it is likely not eligible for the National Register of Historic Places. Prior to line construction, Brockington

recommends a Phase I survey to make a definitive determination of eligibility, and Duke Energy is committed to doing so. It will be marked in the field and protected during line construction.

Historic Sites (6)

Site: Ninety-Nine Islands Dam

Status: Eligible for the National Register of Historic Places

Distance from selected Routes K-O: 1,900 ft.

Discussion: The Ninety-Nine Islands Plant was the third hydroelectric facility constructed by the Southern Power Company, and was their first project hydro-electric project on the Broad River. The Company contracted with W.B. Wilson of Rock Hill, South Carolina in early 1906 to acquire land and riparian rights, and by 1907, a railroad track, offices, warehouses and quarters for the crews had been built nearby. Due to a financial panic beginning in late 1907, construction on the plant was delayed until 1909. In late 1908, B.H. Hardaway of Columbus, Georgia was selected to construct the facility, which was completed and placed in operation in June, 1910, with a nominal capacity of 18,000 kw. Southern Power Company sold the Ninety-Nine Islands Plant to the Great Falls Power Company upon completion in 1910. In 1927, Great Falls Power Company merged with Duke Power.

The Ninety-Nine Islands Dam received a determination of NRHP eligibility ("DOE") under Criterion A and Criterion C by the South Carolina Department of Archives and History in 2001.

From nearest point on the dam, it is likely that two or three towers on the Fold-In Line will be visible along Route O. The view would be looking up an existing 44 kV transmission corridor that crosses the river almost along the face of the dam. Multiple 44 kV line structures would be in the foreground of the view of the Fold-In structures, which would be on high ground about 100 ft. higher than the dam itself. Due to the view, which is significantly modified by existing electrical transmission structures associated with an operating hydro electric facility, the visual effect of the Lee Nuclear Station Fold-In Line built along the selected route will be very low.

Site: Ninety-Nine Islands Powerhouse
Status: Eligible for the National Register of Historic Places
Distance from selected Routes K-O: 2,400 ft.
Discussion: (See Ninety-Nine Islands Dam, above). The Ninety-Nine Islands Powerhouse received a determination of NRHP eligibility ("DOE") under Criterion A and Criterion C by the South Carolina Department of Archives and History in 2001.

The Ninety-Nine Islands powerhouse is on the opposite side of the river from Route O and would, therefore, have an open view across the river of two or three Fold-In structures on Route O. Due to the view conditions from powerhouse, which are significantly modified by existing transmission line structures, the visual affect of the Lee Nuclear Station 230 kV and 525 kV Lines will likely be very low.

Site: Smith's Ford Farm
Status: Eligible for the National Register of Historic Places
Distance from selected Routes K-O: 2,300 ft. from Route O
Discussion: Smith's Ford Farm is a circa 1750 farmhouse, and was recommended NRHP eligible under Criterion C for architecture. It appears to be one of the oldest buildings in York County. There was a post office located at Smith's Ford ca. 1826. The records do not include any information on outbuildings nor was information provided for a potential historic boundary. The Smith Ford Farm farmhouse was recorded in the 1992 York County Historical and Architectural Inventory.

The Smith's Ford Farm farmhouse is on the opposite side of the Broad River from Route O. Trees on the property between the house and river are random; selective clearing appears to have taken place to allow views of the river. During the visual analysis that was conducted during a canoe trip on a segment of the scenic designated stretch of the Broad River, it was determined that scattered trees in the yard area of the farmhouse, trees on each side of the river near the farmhouse and yard area, and wooded area in the floodplain zone and beyond on the west side of the river will likely provide total screening of the Fold-In Lines if built on Route O (no portion of Route K will be visible). In the unlikely event that the top portion of any Fold-In Line structures will be visible from the farmhouse and yard area, they will not likely be recognizable to casual viewers because the silhouette of such structures would be significantly diffused by the tracery of tree branches.

Site: "Walker Farm" (name is not official)

Note: "Walker Farm" constitutes three of the six historic sites due to the three buildings that were observed during the windshield survey.

Status: Potentially Eligible for the National Register of Historic Places (determined during windshield survey)

Distance from selected Routes K-O: Ranges from 1,900 ft. to 2,400 ft.

Discussion: There is no documented information on "Walker Farm" at the county or state level. Cherokee County has not conducted a comprehensive survey, and it is not listed in the records of the SCDAH. During the windshield survey conducted by Brockington for Duke Energy, three houses were noted along with several associated outbuildings. Brockington drove into the property as far as possible without trespassing, noted the type and location of visible buildings, and determined from the very limited information that they appear to be potentially eligible for the NRHP. Brockington also noted a sign with the name Walker Farm on it; hence, the name used to refer to this site. Brockington researched historic maps and other historic documents regarding Cherokee County and did not find any information regarding the Walker Farm site. Brockington reports that the Pleasant Grove Cemetery is located near the concentration of buildings and surmises that there may be some connection or association.

Due to foreground and mid-ground screening, the visual effect of the Fold-In Line built over alternate Route O will be "very low", which means it will not likely be recognizable to the casual viewer from the Walker Farm buildings.

Prior to construction of the Lee Nuclear Station Fold-In 230 kV and 525 kV Lines, following the centerline survey, Duke Energy will conduct an intensive cultural resource investigation throughout the actual rights-of-way of selected Routes K-O. If any previously undocumented cultural resources are discovered, Duke Energy will consult with the appropriate agencies and plan measures to protect the resources.

6.10 Visual Resources

Visual considerations are significant factors when siting new transmission lines. Visibility from public roads, visibility from the Broad River, and visibility from residences were significant factors that were carefully considered and accounted for when developing alternate routes for the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines and evaluating them.

The visual implications transmission lines are influenced by several factors. These include the distance from the viewer, the number and type of structures viewed, whether visible structures

are seen against backdrops (vegetation, terrain, man-made elements) or silhouetted against the skyline, the degree of foreground elements that will offer screening, the amount of vegetative modification which contrasts with surrounding landscapes, and the overall scenic condition (landscape content or context) of the area in which the facility is seen.

Duke Energy conducted extensive field investigations augmented by computer-generated models that accounts for topography, tree height of vegetative screening, height of transmission line structures, and preliminary structure locations to predict the degree to which the Lee Fold-In Line, if built on any of the 21 alternate routes, would be visible from public roads (*Figure 13*). Chart 6.10-1 lists the amount of the Lee Nuclear Station Fold-In Lines, in miles, that will be visible from public roads if built over selected Routes K-O.

Chart 6.10-1: Visibility From Public Roads

View Condition	Route K	Route O	Total Length of Fold-In Line Visible From Public Roads
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 mile of a public viewing area (public road)	2.09	2.38	4.47
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a public viewing area (public road)	1.74	1.42	3.16
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a public viewing area (public road)	1.27	0.40	1.67

A 15.3 mile segment of the Broad River that runs through the center of the siting study area is a designated State Scenic River. The scenic designation extends from the Ninety-Nine-Islands Dam to the river's confluence with the Pacolet River. Duke Energy conducted an extensive analysis to determine the probable visibility of the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines from the scenic designated segment of the Broad River. The analysis considered all alternate routes that would possibly be visible from the Scenic Broad River Corridor. The methodology included computer modeling to predict areas along the river that would likely have some degree of view of the future lines. Additionally, the view conditions from the river were carefully analyzed in the field by inspection from the river during a canoe excursion from the

Ninety-Nine Islands Dam to the Highway 211 bridge. It was determined that no portions of the Lee Nuclear Station Fold-In 230 kV and 525 kV Lines will be visible from the scenic segment of the river due to the following primary factors:

1. Distance from the river to the future lines. The minimum distance from the river to any point along selected Routes K-O is approximately 1,500';
2. The river is deeply incised with bank heights generally ranging from 10 ft. to 25 ft.;
3. Wide expanses of existing woodlands exist between and selected Routes K-O and the River; and,
4. When viewing toward the selected routes from the river, the riparian tree zone on and near the river bank forms a substantial visual buffer.

The absence of any views from the river is confirmed by the computer analysis. From the floodplain areas adjacent to the river, it may be possible to see the very top portions of a limited number of structures, depending on precise structure placement; however, such views are not anticipated but if they occur, the visual recognition of the tops of the structures will be low due to distance and foreground/mid-ground vegetative screening that will diffuse the view.

Chart 6.10-2 lists the evaluation factors that were applied to alternate routes regarding visibility of the future Lee Nuclear Station Fold-In Lines from the Scenic segment of the Broad River. It confirms that no views are anticipated of the Fold-In Lines built along the selected routes (Routes K-O).

Chart 6.10-2: Visibility From the Broad River

View Condition	Route K	Route O	Total Length of Fold-In Line Visible From the Broad River Corridor
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 mile of a state recorded scenic waterway	0	0	0
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a state recorded scenic waterway	0	0	0
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a state recorded scenic waterway	0	0	0
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/2 to 1.0 mile of a state recorded scenic waterway	0	0	0

Duke Energy conducted an extensive investigation to quantify and compare the visual effects to residences that would be posed by each of the 21 alternate routes. Computer models were developed to predict the existing residences that would likely have views of the Lee Nuclear Station 230 kV and 525 kV Lines if built along any of the 21 alternate routes. Field studies were then completed that included visits to each of the residence location identified as having a likely view. Conditions at the view point (residence location) were recorded (the level of vegetative screening in the foreground, mid-ground, etc.). The field-gathered data were combined with other data (distance to the visible portion of the future line, number of structures likely to be viewed, etc.) and the view condition of each residence likely to have a view of the Fold-In Lines over the alternate routes was rated on a scale that ranged from "Very Low" to "Very High". Chart 6.10-3 lists the numbers of residences likely to have a view of the Fold-In Lines when built over selected Routes K-O.

Chart 6.10-3: Residential Visibility

View Condition	Route K	Route O	Total
Number of residences which may have **very high** visibility of the proposed line	2	0	2
Number of residences which may have **high** visibility of the proposed line	4	1	5
Number of residences which may have **moderate to high** visibility of the proposed line	1	0	1
Number of residences which may have **moderate** visibility of the proposed line	2	1	3
Number of residences which may have **low to moderate** visibility of the proposed line	20	1	21
Number of residences which may have **low** visibility of the proposed line	28	5	33
Number of residences which may have **very low** visibility of the proposed line	20	12	32

The visual probability conditions are defined as follows:

Very High: Project element(s) will dominate the view because of proximity to the view point and/or the number of elements viewed; because their setting in the landscape commands strong visual attention; or a combination of these factors.

High: Project element(s) will dominate the view because of their perceived size from the view point and/or the number of elements viewed; because their setting in the landscape commands strong visual attention; or a combination of these factors. The elements of the existing landscape context will continue to be a strong influence in the view shed.

Moderate-High: Project element(s) and the surrounding landscape character will command approximately equal visual attention in the view.

Moderate: Project element(s) will be slightly subordinate to existing elements of the landscape and will not significantly alter the existing landscape character.

Low-Moderate: Project element(s) will be easily recognized in the landscape but will command very little attention in the view.

Low: Project element(s) will be visible but will be completely subordinate to the broader context of the landscape.

Very Low: Project element(s) will not be visually evident to casual viewers.

6.11 Aviation

Federal Aviation Administration ("FAA") Regulations, Part 77, establishes standards for determining obstructions in navigable airspace and sets forth requirements for FAA notification of proposed construction. These regulations require FAA notification for any construction over 200 feet in height above ground level. Also, notification is required if the obstruction is more than specified heights and falls within any restricted airspace in the approach to airports. For airports with runways longer than 3,200 feet, the restricted space extends 20,000 feet (3.3 nautical miles) from the runway. For airports with runways 3,200 feet or less, the restricted space extends 10,000 feet (1.7 nautical miles). For heliports, the restricted space extends 5,000 feet (0.8 nautical miles). No airports or airstrips are within 3.3 nautical miles of the project and no structures will exceed 200' in height. No 230 kV or 525 kV structures along the Lee Nuclear Station Fold-In Lines will exceed 200 feet in height; no airports are located within 3.3 nautical miles of selected Routes K-O, and no heliports are located within 0.8 nautical miles; therefore, the Lee Nuclear Station Fold-In Lines will not affect aviation.

6.12 Noise, Radio, and Television Interference

When a substation or transmission line is in operation, an electric field is generated in the air surrounding the current-carrying conductors. This electric field allows corona to occur, and this corona can create an audible noise. Corona is the partial electrical breakdown of the insulating properties of the air in the vicinity of the conductors of a transmission line. When the intensity of the electric field at the conductor surface exceeds the breakdown strength of the surrounding air, a corona discharge occurs at the conductor surface. Energy and heat are dissipated in very small volumes near the surface of the conductors. Part of this energy is in the form of small local pressure changes that result in audible noise (10 dB or less).

Corona-generated audible noise can be characterized as a hissing, cracking sound which, under certain conditions, is accompanied by a 120-hertz (Hz) hum. Corona-generated audible noise is of concern primarily for electrical lines and equipment that are operated at 230 kV and higher during inclement weather conditions. The conductors of high voltage transmission lines are designed to be corona-free under ideal conditions. However, slight variations and irregularities in the conductor surface cause distorted electric fields near the conductor surface, and the occurrence of corona. The most common source of distorted electric fields at the conductor surface is water droplets on, or dripping from, the conductors. Therefore, audible noise from high-voltage transmission lines is generally associated with, and enhanced by, wet weather (i.e., wet conductor) phenomenon, which can occur during periods of rain, fog, snow or icing. These conditions are

expected to occur infrequently and will usually be limited to a "hissing" sound that will be 35 dB or less, which is comparable to the sound of a typical residential refrigerator. During fair weather, insects and other contaminants on the conductor can also serve as sources of corona.

Corona on transmission line conductors can also generate electromagnetic interference for radio and television receivers. Corona generated interference is localized and not very noticeable outside the transmission line right of way.

Another type of radio and television interference, known as gap-type noise, is caused by an oxidized film at the point of contact between two metallic electric hardware pieces. The film acts as an insulator between the surfaces and small electric sparks, which produce noise and interference. Gap type interference normally causes radio or television interference within a mile or less of the source. When such an interference condition occurs, corrective actions can be taken to eliminate the source.

Duke Energy's construction and maintenance practices will ensure proper connections of current carrying equipment throughout the operational life of the Lee Nuclear Station 230 kV and 525 kV Fold-In Lines; therefore, no adverse audible noise or radio and television interference effects are expected to be associated with their operation.

6.13 Safety

To provide for public safety and protection, Duke Energy will design and construct the Fold-In Lines in a manner that will comply with, or exceed, the latest standards of the National Electrical Safety Code in effect at the time of construction. Duke Energy commits to continue their long-standing tradition of operating and maintaining their facilities in a manner that will ensure public safety over the life of these facilities.

6.14 Electric and Magnetic Fields

Electric and magnetic fields ("EMF") exist anywhere there is electricity, whether that electricity is being produced, distributed, or consumed. Thus EMF is created by power lines, residential wiring, appliances, and even by the earth itself. Since the early 1970's, hundreds of studies have debated the possible health effects of EMF. In 1996, the National Academy of Sciences ("NAS"), National Research Council, completed its review of the literature on the possible health risks of residential exposure to power-frequency electric and magnetic fields. In 1999, the National Institute of Environmental Health Sciences ("NIEHS") completed a comprehensive

program of research and analysis to clarify the potential health risks from exposure to extremely low frequency electric and magnetic fields.

The NAS report stated, "Based on a comprehensive evaluation of published studies relating to the effects of power frequency electric and magnetic fields on cells, tissues, and organisms (including humans), the conclusion of the committee is that the current body of evidence does not show that exposure to these fields presents a human-health hazard." The NAS went on to say, "No conclusive and consistent evidence shows that exposures to residential electric and magnetic fields produce cancer, adverse neurobehavioral effects, or reproductive and developmental effects."

NIEHS concluded that the evidence for a risk of cancer and other human disease from the electric and magnetic fields around power lines is "weak." They stated that "the results of the EMF-RAPID program do not support the contention that the use of electricity poses a major unrecognized public-health danger." NIEHS Director Kenneth Olden, Ph.D., said, "The lack of consistent, positive findings in animal or mechanistic studies weakens the belief that this association is actually due to EMF, but it cannot completely discount the epidemiological findings. For that reason, and because virtually everyone in the United States is routinely exposed to EMF, efforts to encourage reductions in exposure should continue."

EMF levels drop sharply with increased distance from a power source. Duke Energy has reviewed magnetic field strength readings, which are reported in units known as milliGauss (mG), that has been conducted along existing 230 and 525 kV lines on its system using a device called a Gauss Meter. The results are consistent: Directly under the lines, the readings typically range from 15 to 25 mG along 230 and 525 kV lines. Generally, the normal background magnetic field strength levels away from electrical devices are 0.6-1.5 mG. In homes, typical daily magnetic field strength levels around common electrical devices and appliances are higher. The following are typical magnetic field strength ranges for certain equipment:

Computers --- 2-20 mG
Electric stoves --- 2-30 mG
Hair dryers --- 10-70 mG
Electric Blanket --- 5-30 mG
Electric can openers --- 800-1,100 mG

In almost all cases where magnetic field strength readings have been conducted along existing lines similar to the proposed Lee Nuclear Station 230 and 525 kV Fold-In Lines, the magnetic field strength level at the edge of the right-of-way is in the 3-7 mG range.

6.15 Ozone

High-voltage transmission facilities may, under some conditions, produce small amounts of ozone as a consequence of corona discharge. This discharge is caused by abrasions on conductors or foreign-particle contamination of the insulators or hardware. Duke Energy takes care to eliminate or minimize corona discharge from random arcing through careful design of the connections, fittings, hardware, and insulation.

Organizations such as the Illinois Institute of Technology have conducted extensive field tests under various weather conditions to detect ozone around high-voltage substations and 765 kV lines. These tests showed no significant adverse effects on plants, animals, or humans from levels of ozone that may be produced in operating transmission facilities at voltages up to 765 kV.

The Lee Nuclear Station 230 kV and 525 kV Fold-In Lines should not produce any detectable amount of ozone under any operating condition, and thus will pose no threat to environmental quality.

TABLES

Criteria Weights
Duke Energy
William S. Lee III Nuclear Station
230 kV and 525 kV Fold-In Lines

	SENSITIVITY TO TRANSMISSION LINE CONSTRUCTION				
	HIGH	MODERATE / HIGH	MODERATE	MODERATE / LOW	LOW
CULTURAL RESOURCES					
Archaeological Site - Eligible for the NR*					
Archaeological Site - Eligible for the NR - 50' Buffer					
Archaeological Site - Ineligible for the NR					
Archaeological Site - Ineligible for the NR - 50' Buffer					
Archaeological Site - Listed on the NR					
Archaeological Site - Listed on the NR - 50' Buffer					
Archaeological Site - NR Eligibility Undetermined					
Archaeological Site - NR Eligibility Undetermined - 50' Buffer					
Archaeological Site - Potentially Eligible for the NR					
Archaeological Site - Potentially Eligible for the NR - 50' Buffer					
Historic Cemetery - Eligible for the NR					
Historic Cemetery - Eligible for the NR - 50' buffer					
Historic Cemetery - Ineligible for the NR					
Historic Cemetery - Ineligible for the NR - 50' buffer					
Historic Cemetery - Not Recorded, Potentially Eligible for the NR					
Historic Cemetery - Not Recorded, Potentially Eligible for the NR - 50' buffer					
Historic Cemetery - Potentially Eligible for the NR					
Historic Cemetery - Potentially Eligible for the NR - 50' buffer					
Historic District - Listed on the NR					
Historic District - Listed on the NR - 500' Buffer					
Historic District - Listed on the NR - 1000' Buffer					
Historic District - Not Recorded, Potentially Eligible for the NR					
Historic District - Not Recorded, Potentially Eligible for the NR - 500' Buffer					
Historic District - Not Recorded, Potentially Eligible for the NR - 1000' Buffer					
Historic Site - Eligible for the NR					
Historic Site - Eligible for the NR - 100' Buffer					
Historic Site - Eligible for the NR - 500' Buffer					
Historic Site - Eligible for the NR - 1000' Buffer					
Historic Site - Ineligible for the NR					
Historic Site - Ineligible for the NR - 100' Buffer					
Historic Site - Ineligible for the NR - 500' Buffer					
Historic Site - Ineligible for the NR - 1000' Buffer					
Historic Site - Listed on the NR					
Historic Site - Listed on the NR - 100' Buffer					
Historic Site - Listed on the NR - 500' Buffer					
Historic Site - Listed on the NR - 1000' Buffer					
Historic Site - Not Recorded - Potentially Eligible for the NR					
Historic Site - Not Recorded - Potentially Eligible for the NR - 100' Buffer					
Historic Site - Not Recorded - Potentially Eligible for the NR - 500' Buffer					
Historic Site - Not Recorded - Potentially Eligible for the NR - 1000' Buffer					
Historic Site - Potentially Eligible for the NR					
Historic Site - Potentially Eligible for the NR - 100' Buffer					
Historic Site - Potentially Eligible for the NR - 500' Buffer					
Historic Site - Potentially Eligible for the NR - 1000' Buffer					
No Recorded Cultural Resource Site					

*National Register of Historic Places

PUBLIC VISIBILITY					
Visible (0 - 1/8 Mile of a Public Road or Navigable Water)					
Visible (0 - 1/8 Mile of a Scenic Waterway)					
Visible (1/8 - 1/4 Mile of a Public Road or Navigable Water)					
Visible (1/8 - 1/4 Mile of a Scenic Waterway)					
Visible (1/4 - 1/2 Mile of a Public Road or Navigable Water)					
Visible (1/4 - 1/2 Mile of a Scenic Waterway)					
Visible (1/2- 3/4 Mile of a Public Road or Navigable Water)					
Visible (1/2 - 3/4 Mile of a Scenic Waterway)					
Visible (3/4 - 1 Mile of a Public Road or Navigable Water)					
Visible (1 - 1 1/4 Mile of a Public Road or Navigable Water)					
Not Visible from a Public Road, Navigable Water or Scenic Waterway					
NATURAL RESOURCES					
Canada Moonseed					
Canada Moonseed 50' Buffer					
May White					
May White 50' Buffer					
One-Flower Stitchwort					
One-Flower Stitchwort 50' Buffer					
No Recorded Natural Resource Sites					

Criteria Weights
Duke Energy
William S. Lee III Nuclear Station
230 kV and 525 kV Fold-In Lines

	SENSITIVITY TO TRANSMISSION LINE CONSTRUCTION				
	HIGH	MODERATE / HIGH	MODERATE	MODERATE / LOW	LOW
HYDROGRAPHY					
Stream					
Lake / Pond					
50' Buffer					
100' Buffer					
Upland					
WETLANDS					
Lacustrine Unconsolidated Bottom					
Lacustrine Unconsolidated Shore					
Palustrine Emergent					
Palustrine Forested					
Palustrine Scrub / Shrub					
Palustrine Unconsolidated Bottom					
Palustrine Unconsolidated Shore					
Riverine Streambed					
Riverine Unconsolidated Bottom					
Riverine Unconsolidated Shore					
Unclassified Lake / Pond					
50' Buffer					
100' Buffer					
Upland					
ZONING					
York County - Agricultural Conservation District					
York County - Agricultural Conservation-I District					
York County - Business Development-I District					
York County - Business Development-III District					
York County - Industrial Development District					
York County - Planned Development District					
York County - Residential Conservation-II District					
York County - Rural Development District					
York County - Rural Development-I District					
Road Rights-of-Way					
Not Zoned					
EXISTING LAND USE					
Agricultural Land					
Airport Facilities (Ultra-Light)					
Cattle and Swine Feedlots					
Cemetery					
Commercial					
Communication Tower					
Conservation Land					
Educational Institution					
Government Center					
Horse Farm					
Light Industrial					
Marina and Boat Launch					
Other Institutional					
Other Transportation, Communication, and Utility					
Picnic and Camping Park					
Places of Worship					
Poultry Farm					
Power Facility (Broad River)					
Power Facility (Duke Energy)					
Power Facility (New Horizon)					
Power Generation (Duke Energy)					
Recreational Land					
Recycling Center					
Residential (Rural, Single Unit)					
Residential (Single Unit, Low Density)					
Residential (Single Unit, Medium Density)					
Secondary Road					
Single Unit Residential Under Construction					
Solid Waste Disposal Area					
Tree Farm					
Upland Rights-of-Way					
Water					
Water Tower					
No Designated Land Use					

Criteria Weights
Duke Energy
William S. Lee III Nuclear Station
230 kV and 525 kV Fold-In Lines

	SENSITIVITY TO TRANSMISSION LINE CONSTRUCTION				
	HIGH	MODERATE / HIGH	MODERATE	MODERATE / LOW	LOW
FUTURE LAND USE					
Cherokee County - Agriculture					
Cherokee County - Commercial					
Cherokee County - Low Density Residential					
York County - Agriculture Conservation					
York County - Greenway					
York County - Industrial					
York County - Public Open Space					
York County - Rural Residential					
No Designated Future Land Use					
FEMA FLOOD ZONES					
Areas of 100-Year Flooding (No Base Flood Elevation Determined)					
Outside Areas of 100-Year Flooding					
OCCUPIED BUILDINGS					
Church Building (Footprint)					
Church Building (100' Buffer)					
Church Building (500' Buffer)					
Commercial Building (Footprint)					
Commercial Building (100' Buffer)					
Commercial Building (200' Buffer)					
Community (Footprint)					
Community (100' Buffer)					
Community (500' Buffer)					
Day Care (Footprint)					
Day Care (200' Buffer)					
Day Care (500' Buffer)					
Fire / EMS Building (50' Buffer)					
Fire / EMS Building (100' Buffer)					
Fire / EMS Building (200' Buffer)					
Government Building (Footprint)					
Government Building (75' Buffer)					
Government Building (500' Buffer)					
Multi-Family Residence (30' Buffer)					
Multi-Family Residence (75' Buffer)					
Multi-Family Residence (500' Buffer)					
Possible Single-Family Residence (30' Buffer)					
Possible Single-Family Residence (75' Buffer)					
Possible Single-Family Residence (500' Buffer)					
School (Footprint)					
School Amenities (Parking Lots, Athletic Fields, etc.)					
School - Including Amenities (500' Buffer)					
School - Including Amenities (1000' Buffer)					
Single-Family Residence (30' Buffer)					
Single-Family Residence (75' Buffer)					
Single-Family Residence (500' Buffer)					
No Occupied Buildings					
LAND COVER					
Fresh Water					
Marsh / Emergent Wetland					
Bottomland / Floodplain Forest					
Dry Deciduous Forest / Woodland					
Mesic Deciduous Forest / Woodland					
Mesic Mixed Forest / Woodland					
Closed Canopy Evergreen Forest / Woodland					
Needle-Leaved Evergreen Mixed Forest / Woodland					
Dry Scrub / Shrub Thicket					
Wet Scrub / Shrub Thicket					
Open Canopy / Recently Cleared Forest					
Cultivated Land					
Grassland / Pasture					
Urban Development					
Urban Residential					
SOILS					
Farmland Of Statewide Importance					
Prime Farmland					
Prime Farmland If Drained And Protected From Flooding Or Not Frequently Flooded					
Not Prime Or Important Farmland					

Transmission Line Siting
Criteria Constraint Weighting Definitions

Sensitivity to Transmission Line Construction

HIGH

These areas (1) contain resources or land uses protected by legislation or administrative policy, (2) contain sensitive resources that would be significantly affected by the addition of a transmission line, or (3) present a severe physical constraint to transmission line construction and operation. Because it would be extremely difficult to locate a transmission line in these areas, they are often avoided when developing alternate transmission line routes.

MODERATE-HIGH

These areas typically contain natural resources with moderate-high sensitivity to transmission line construction or existing land uses that are significantly sensitive to transmission line construction due to the land use type, historic importance, density, etc. Moderate-high constraint areas may also contain physical characteristics that would make transmission line construction and/or operation through them extremely difficult.

MODERATE

These are areas with natural resources or existing land uses that are moderately sensitive to transmission line construction. Moderate constraint areas may contain some physical constraint to transmission line construction but none that cannot be mitigated through routine construction practices.

MODERATE-LOW

These areas contain natural resources and existing land uses that have minor sensitivity to transmission line construction. Physical constraint to transmission line construction in low-moderate constraint areas is usually very minor.

LOW

These areas do not contain natural resources or existing land uses that are sensitive to transmission line construction, nor do they contain physical constraints that pose measurable challenges to transmission line construction. Low constraint areas often include existing utility rights-of-way.

Duke Energy
William S. Lee III Nuclear Station
Siting Study Route Evaluation Score Sheet

		ROUTE A		ROUTE B		ROUTE C		ROUTE D		ROUTE E		ROUTE F		ROUTE G		ROUTE H		ROUTE I		ROUTE J		ROUTE K		ROUTE L	
	Weight	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score
Cultural and Natural Resource Factors	1																								
Number of Recorded Archaeological Sites in the R/W that may be disturbed by line construction (NRHP, Eligible for NRHP, Potentially Eligible, Eligibility Undetermined)	10	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	10.0	1	10.0	1	10.0	1	10.0	1	10.0	1	10.0
Number of Recorded Archaeological Sites in the R/W that may be disturbed by line construction (Not Eligible for NRHP)	4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Number of Recorded Archaeological Sites within 100' of the R/W where low potential for disturbance exists (NRHP, Eligible for NRHP, Potentially Eligible, Eligibility Undetermined)	3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Number of Recorded Archaeological Sites within 100' of the R/W where low potential for disturbance exists (Not Eligible for NRHP)	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Number of recorded Heritage Trust sites in the R/W	8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Number of recorded Heritage Trust site buffers in the R/W (Buffers are sized according to species)	5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Number of Historic Sites in the R/W (NRHP, Eligible for NRHP, Potentially Eligible)	10	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Number of Historic Sites within 1/4 mile of the Line that have a view of the line (NRHP, Eligible for NRHP, Potentially Eligible)	10	2	20.0	1	10.0	1	10.0	0	0.0	0	0.0	0	0.0	2	20.0	1	10.0	1	10.0	0	0.0	0	0.0	0	0.0
Number of Recorded Historic Sites between 1/4 - 1/2 mile of the line that will have a view of the line (NRHP, Eligible for NRHP, Potentially Eligible)	8	1	8.0	0	0.0	0	0.0	0	0.0	0	0.0	1	8.0	1	8.0	0	0.0	0	0.0	0	0.0	0	0.0	1	8.0
Number of Historic Sites between 1/2 - 1 1/4 mile of the line that will have a view of the line (NRHP, Eligible for NRHP, Potentially Eligible)	4	2	8.0	2	8.0	2	8.0	2	8.0	2	8.0	3	12.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	4.0
Total Weighted Score			**36.0**		**18.0**		**18.0**		**8.0**		**8.0**		**20.0**		**38.0**		**20.0**		**20.0**		**10.0**		**10.0**		**22.0**
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10			**2.90**		**1.45**		**1.45**		**0.65**		**0.65**		**1.61**		**3.06**		**1.61**		**1.61**		**0.81**		**0.81**		**1.77**
Land Cover Factors	1																								
Acres of mesic deciduous forest/woodland to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	10	95.2	952.0	90.5	905.0	95.2	952.0	75.7	757.0	80.4	804.0	86.4	864.0	75.8	758.0	71.0	710.0	75.8	758.0	56.2	562.0	60.9	609.0	67.0	670.0
Acres of mesic deciduous forest/woodland to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of hardwood forest (dry deciduous forest/woodland) to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	10	0.6	6.0	0.7	7.0	0.6	6.0	0.6	6.0	0.5	5.0	1.0	10.0	0.5	5.0	0.6	6.0	0.5	5.0	0.5	5.0	0.4	4.0	0.9	9.0
Acres of hardwood forest (dry deciduous forest/woodland) to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of mesic mixed forest/woodland to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	8	178.7	1429.6	167.6	1340.8	181.8	1454.4	144.2	1153.6	158.4	1267.2	169.9	1359.2	180.1	1440.8	168.9	1351.2	183.1	1464.8	145.5	1164.0	159.7	1277.6	171.2	1369.6
Acres of mesic mixed forest/woodland to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of open canopy/recently cleared forest in R/W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of closed canopy evergreen forest/woodland to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	8	80.7	645.6	67.4	539.2	75.9	607.2	123.0	984.0	131.5	1052.0	151.8	1214.4	78.1	624.8	64.8	518.4	73.3	586.4	120.4	963.2	128.9	1031.2	149.2	1193.6
Acres of closed canopy evergreen forest/woodland to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of grassland / pasture in R/W	3	130.3	390.9	162.3	486.9	133.4	400.2	122.2	366.6	93.4	280.2	71.2	213.6	127.3	381.9	159.3	477.9	130.5	391.5	119.3	357.9	90.4	271.2	68.2	204.6
Acres of marsh / emergent wetland in R/W	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of fresh water in R/W	8	11.2	89.6	10.9	87.2	10.9	87.2	9.9	79.2	9.9	79.2	9.6	76.8	11.2	89.6	10.9	87.2	10.9	87.2	10.0	80.0	10.0	80.0	9.6	76.8
Acres of dry shrub/scrub thicket in R/W	2	43.5	87.0	60.8	121.6	65.4	130.8	37.8	75.6	42.5	85.0	17.0	34.0	49.2	98.4	66.5	133.0	71.2	142.4	43.6	87.2	48.2	96.4	22.8	45.6
Acres of wet shrub/scrub thicket in R/W	2	1.2	2.4	1.5	3.0	0.4	0.8	1.7	3.4	0.5	1.0	0.5	1.0	0.9	1.8	1.2	2.4	0.1	0.2	1.4	2.8	0.3	0.6	0.2	0.4
Acres of bottomland/floodplain forest in R/W not parallel and adjacent to an existing occupied corridor (e.g., utility or road right of way)	10	43.7	437.0	20.9	209.0	22.1	221.0	22.0	220.0	23.2	232.0	16.6	166.0	41.8	418.0	19.0	190.0	20.1	201.0	20.1	201.0	21.2	212.0	14.7	147.0
Acres of bottomland/floodplain forest in R/W parallel and adjacent to an existing occupied corridor (e.g., utility or road right of way)	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of urban development in R/W	5	17.4	87.0	23.1	115.5	22.2	111.0	12.2	61.0	11.3	56.5	4.5	22.5	18.3	91.5	24.1	120.5	23.1	115.5	13.1	65.5	12.2	61.0	5.4	27.0
Acres of urban residential landcover in R/W	10	1.1	11.0	1.3	13.0	0.8	8.0	0.5	5.0	0.0	0.0	0.6	6.0	1.1	11.0	1.3	13.0	0.8	8.0	0.5	5.0	0.0	0.0	0.6	6.0
Acres of needle-leaved evergreen mixed forest/woodland to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	10	3.7	37.0	4.8	48.0	9.5	95.0	4.0	40.0	8.6	86.0	5.6	56.0	5.8	58.0	6.9	69.0	11.5	115.0	6.1	61.0	10.7	107.0	7.7	77.0
Acres of needle-leaved evergreen mixed forest/woodland to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Weighted Score			**4175.1**		**3876.2**		**4073.6**		**3751.4**		**3948.1**		**4023.5**		**3978.8**		**3678.6**		**3875.0**		**3554.6**		**3750.0**		**3826.6**
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10			**10.00**		**9.28**		**9.76**		**8.99**		**9.46**		**9.64**		**9.53**		**8.81**		**9.28**		**8.51**		**8.98**		**9.17**

Table 2
Sheet 1 of 12

Duke Energy
William S. Lee III Nuclear Station
Siting Study Route Evaluation Score Sheet

			ROUTE M			ROUTE N			ROUTE O			ROUTE P			ROUTE Q			ROUTE R			ROUTE S			ROUTE T			ROUTE U	
	Weight	Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score	
Cultural and Natural Resource Factors	1																											
Number of Recorded Archaeological Sites in the R/W that may be disturbed by line construction (NRHP, Eligible for NRHP, Potentially Eligible, Eligibility Undetermined)	10	1	10.0		1	10.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		1	10.0		1	10.0	
Number of Recorded Archaeological Sites in the R/W that may be disturbed by line construction (Not Eligible for NRHP)	4	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
Number of Recorded Archaeological Sites within 100' of the R/W where low potential for disturbance exists (NRHP, Eligible for NRHP, Potentially Eligible, Eligibility Undetermined)	3	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
Number of Recorded Archaeological Sites within 100' of the R/W where low potential for disturbance exists (Not Eligible for NRHP)	0.5	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
Number of recorded Heritage Trust sites in the R/W	8	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
Number of recorded Heritage Trust site buffers in the R/W (Buffers are sized according to species)	5	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
Number of Historic Sites in the R/W (NRHP, Eligible for NRHP, Potentially Eligible)	10	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
Number of Historic Sites within 1/4 mile of the Line that have a view of the line (NRHP, Eligible for NRHP, Potentially Eligible)	10	2	20.0		2	20.0		0	0.0		7	70.0		7	70.0		7	70.0		0	0.0		2	20.0		3	30.0	
Number of Recorded Historic Sites between 1/4 - 1/2 mile of the line that will have a view of the line (NRHP, Eligible for NRHP, Potentially Eligible)	8	1	8.0		3	24.0		6	48.0		2	16.0		2	16.0		2	16.0		2	16.0		3	24.0		5	40.0	
Number of Historic Sites between 1/2 - 1 1/4 mile of the line that will have a view of the line (NRHP, Eligible for NRHP, Potentially Eligible)	4	0	0.0		1	4.0		0	0.0		0	0.0		0	0.0		2	8.0		7	28.0		16	64.0		11	44.0	
Total Weighted Score			38.0			58.0			48.0			86.0			86.0			94.0			44.0			118.0			124.0	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				3.06			4.68			3.87			6.94			6.94			7.58			3.55			9.52			10.00
Land Cover Factors	1																											
Acres of mesic deciduous forest/woodland to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	10	81.4	814.0		92.3	923.0		90.0	900.0		89.8	898.0		80.6	806.0		81.0	810.0		78.2	782.0		94.8	948.0		131.4	1314.0	
Acres of mesic deciduous forest/woodland to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of hardwood forest (dry deciduous forest/woodland) to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	10	0.5	5.0		1.4	14.0		1.5	15.0		1.1	11.0		1.2	12.0		1.6	16.0		0.1	1.0		0.1	1.0		2.7	27.0	
Acres of hardwood forest (dry deciduous forest/woodland) to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of mesic mixed forest/woodland to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	8	144.2	1153.6		162.6	1300.8		154.9	1239.2		94.5	756.0		109.1	872.8		132.3	1058.4		161.9	1295.2		205.0	1640.0		158.0	1264.0	
Acres of mesic mixed forest/woodland to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	4	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of open canopy/recently cleared forest in R/W	3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		4.3	12.9		0.0	0.0		0.0	0.0	
Acres of closed canopy evergreen forest/woodland to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	8	49.9	399.2		34.0	272.0		50.7	405.6		41.6	332.8		47.1	376.8		44.8	358.4		65.8	526.4		75.8	606.4		85.1	680.8	
Acres of closed canopy evergreen forest/woodland to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	4	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of grassland / pasture in R/W	3	76.2	228.6		78.2	234.6		86.3	258.9		138.1	414.3		154.3	462.9		110.3	330.9		143.2	429.6		100.8	302.4		100.1	300.3	
Acres of marsh / emergent wetland in R/W	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		1.2	9.6	
Acres of fresh water in R/W	8	1.2	9.6		1.2	9.6		5.2	41.6		6.8	54.4		6.8	54.4		4.5	36.0		15.4	123.2		12.9	103.2		12.8	102.4	
Acres of dry shrub/scrub thicket in R/W	2	45.4	90.8		48.3	96.6		38.8	77.6		19.8	39.6		24.4	48.8		15.1	30.2		32.8	65.6		33.7	67.4		32.0	64.0	
Acres of wet shrub/scrub thicket in R/W	2	0.8	1.6		0.8	1.6		0.1	0.2		1.5	3.0		2.8	5.6		1.1	2.2		0.4	0.8		2.7	5.4		5.1	10.2	
Acres of bottomland/floodplain forest in R/W not parallel and adjacent to an existing occupied corridor (e.g., utility or road right of way)	10	37.9	379.0		35.2	352.0		6.7	67.0		25.0	250.0		23.1	231.0		33.2	332.0		36.9	369.0		25.0	250.0		23.0	230.0	
Acres of bottomland/floodplain forest in R/W parallel and adjacent to an existing occupied corridor (e.g., utility or road right of way)	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of urban development in R/W	5	1.5	7.5		0.5	2.5		5.0	25.0		2.4	12.0		1.1	5.5		0.2	1.0		9.3	46.5		5.2	26.0		4.7	23.5	
Acres of urban residential landcover in R/W	10	0.2	2.0		0.2	2.0		0.0	0.0		1.5	15.0		1.9	19.0		1.3	13.0		0.9	9.0		0.0	0.0		0.5	5.0	
Acres of needle-leaved evergreen mixed forest/woodland to be cleared for R/W not parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	10	5.2	52.0		5.2	52.0		4.6	46.0		1.5	15.0		1.0	10.0		0.4	4.0		0.4	4.0		0.6	6.0		1.2	12.0	
Acres of needle-leaved evergreen mixed forest/woodland to be cleared for R/W parallel and adjacent to an existing cleared corridor (e.g., utility or road right of way)	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Weighted Score			3142.9			3260.7			3076.1			2801.1			2904.8			2992.1			3665.2			3955.8			4042.8	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				7.53			7.81			7.37			6.71			6.96			7.17			8.78			9.47			9.68

Duke Energy
William S. Lee III Nuclear Station
Siting Study Route Evaluation Score Sheet

			ROUTE A			ROUTE B			ROUTE C			ROUTE D			ROUTE E			ROUTE F			ROUTE G			ROUTE H			ROUTE I			ROUTE J			ROUTE K			ROUTE L	
	Weight	Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score	
Property Ownership Factors	1																																					
Acres of R/W **not** parallel and adjacent to existing utility R/W to be acquired from private ownership	10	295.4	2954.0		289.0	2890.0		269.9	2699.0		229.9	2299.0		210.7	2107.0		129.4	1294.0		239.6	2396.0		233.1	2331.0		214.0	2140.0		174.0	1740.0		154.9	1549.0		73.6	736.0	
Acres of R/W parallel and adjacent to existing utility R/W to be acquired from private ownership	6	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility R/W to be acquired from corporate ownership	8	307.4	2459.2		317.9	2543.2		343.6	2748.8		319.0	2552.0		344.6	2756.8		400.9	3207.2		344.7	2757.6		355.3	2842.4		381.0	3048.0		356.4	2851.2		382.0	3056.0		438.3	3506.4	
Acres of R/W parallel and adjacent to existing utility R/W to be acquired from corporate ownership	4	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility R/W to be acquired from public ownership	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W to be acquired from public ownership	6	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Weighted Score			5413.2			5433.2			5447.8			4851.0			4863.8			4501.2			5153.6			5173.4			5188.0			4591.2			4605.0			4242.4	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				9.94			9.97			10.00			8.90			8.93			8.26			9.46			9.50			9.52			8.43			8.45			7.79
Land Use Factors	1																																					
Acres of R/W not parallel and adjacent to existing utility or road R/W across lands used for agricultural production	7	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands used for agricultural production	4	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility R/W across lands either being used for, or dedicated for, the burial of human remains (cemetery).	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands either being used for, or dedicated for, the burial of human remains (cemetery).	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility R/W across lands that are 1) in recorded residential subdivisions (developed or undeveloped); 2) across lands where existing residential development occurs on land parcels that have been subdivided and sized for obvious residential uses (typically lots that are one acre or less in area); or, 3) across lands that are currently portions of existing residential yard areas.	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		1.5	15.0		1.5	15.0		1.5	15.0		1.5	15.0		1.5	15.0		1.5	15.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands that are 1) in recorded residential subdivisions (developed or undeveloped); 2) across lands where existing residential development occurs on land parcels that have been subdivided and sized for obvious residential uses (typically lots that are one acre or less in area); or, 3) across lands that are currently portions of existing residential yard areas.	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility R/W across lands that are in proposed residential subdivisions (parcels rezoned for residential subdivisions or preliminary subdivision plans filed but not approved)	3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands that are in proposed residential subdivisions (parcels rezoned for residential subdivisions or preliminary subdivision plans filed but not approved)	1	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility or road R/W across lands used for public recreation (e.g., parks, ball field, etc.) purposes	9	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands used for public recreation (e.g., parks, ball field, etc.) purposes	6	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility R/W across lands used for church purposes	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands used for church purposes	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility or road R/W across lands dedicated for long-term preservation (coastal marshland, dedicated buffers, etc)	9	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands dedicated for long-term preservation (coastal marshland, dedicated buffers, etc)	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility R/W across lands dedicated to long-term research and educational purposes	9	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands dedicated to long-term research and educational purposes	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility or road R/W across lands used for school/daycare purposes	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands used for school/daycare purposes	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W **not** parallel and adjacent to existing utility or road R/W across lands used for institutional purposes (hospital, nursing home, etc)	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands used for institutional purposes (hospital, nursing home, etc)	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres within 200' of a potential structure location in navigable waters where there is not an existing obstruction (bridge support, transmission structure, etc) in close proximity (200')	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres within 200' of a potential structure location in navigable waters where there is an existing obstruction (bridge support, transmission structure, etc) in close proximity (200')	7	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Weighted Score			0.0			0.0			0.0			0.0			0.0			0.0			15.0			15.0			15.0			15.0			15.0			15.0	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				0.00			0.00			0.00			0.00			0.00			0.00			0.61			0.61			0.61			0.61			0.61			0.61

Duke Energy
William S. Lee III Nuclear Station
Siting Study Route Evaluation Score Sheet

		ROUTE M			ROUTE N			ROUTE O			ROUTE P			ROUTE Q			ROUTE R			ROUTE S			ROUTE T			ROUTE U	
	Weight	Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score	
Property Ownership Factors	1																										
Acres of R/W not parallel and adjacent to existing utility R/W to be acquired from private ownership	10	157.2	1572.0		234.2	2342.0		252.7	2527.0		227.1	2271.0		325.0	3250.0		320.3	3203.0		359.4	3594.0		363.8	3638.0		322.6	3226.0	
Acres of R/W parallel and adjacent to existing utility R/W to be acquired from private ownership	6	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility R/W to be acquired from corporate ownership	8	281.0	2248.0		219.5	1756.0		186.6	1492.8		187.9	1503.2		119.7	957.6		97.0	776.0		177.3	1418.4		178.4	1427.2		220.5	1764.0	
Acres of R/W parallel and adjacent to existing utility R/W to be acquired from corporate ownership	4	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility R/W to be acquired from public ownership	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W to be acquired from public ownership	6	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Weighted Score			3820.0			4098.0			4019.8			3774.2			4207.6			3978.0			5012.4			5065.2			4990.0	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				7.01			7.52			7.38			6.93			7.72			7.30			9.20			9.30			9.16
Land Use Factors	1																										
Acres of R/W not parallel and adjacent to existing utility or road R/W across lands used for agricultural production	7	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands used for agricultural production	4	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility R/W across lands either being used for, or dedicated for, the burial of human remains (cemetery).	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands either being used for, or dedicated for, the burial of human remains (cemetery).	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility R/W across lands that are 1) in recorded residential subdivisions (developed or undeveloped); 2) across lands where existing residential development occurs on land parcels that have been subdivided and sized for obvious residential uses (typically lots that are one acre or less in area); or, 3) across lands that are currently portions of existing residential yard areas.	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands that are 1) in recorded residential subdivisions (developed or undeveloped); 2) across lands where existing residential development occurs on land parcels that have been subdivided and sized for obvious residential uses (typically lots that are one acre or less in area); or, 3) across lands that are currently portions of existing residential yard areas.	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility R/W across lands that are in proposed residential subdivisions (parcels rezoned for residential subdivisions or preliminary subdivision plans filed but not approved)	3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands that are in proposed residential subdivisions (parcels rezoned for residential subdivisions or preliminary subdivision plans filed but not approved)	1	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility or road R/W across lands used for public recreation (e.g., parks, ball field, etc.) purposes	9	27.2	244.8		27.2	244.8		0.0	0.0		4.3	38.7		4.3	38.7		4.3	38.7		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands used for public recreation (e.g., parks, ball field, etc.) purposes	6	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility R/W across lands used for church purposes	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands used for church purposes	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility or road R/W across lands dedicated for long-term preservation (coastal marshland, dedicated buffers, etc)	9	0.0	0.0		0.0	0.0		0.0	0.0		4.3	38.7		4.3	38.7		4.3	38.7		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands dedicated for long-term preservation (coastal marshland, dedicated buffers, etc)	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility R/W across lands dedicated to long-term research and educational purposes	9	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility R/W across lands dedicated to long-term research and educational purposes	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility or road R/W across lands used for school/daycare purposes	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands used for school/daycare purposes	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W not parallel and adjacent to existing utility or road R/W across lands used for institutional purposes (hospital, nursing home, etc)	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres of R/W parallel and adjacent to existing utility or road R/W across lands used for institutional purposes (hospital, nursing home, etc)	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres within 200' of a potential structure location in navigable waters where there is not an existing obstruction (bridge support, transmission structure, etc) in close proximity (200')	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Acres within 200' of a potential structure location in navigable waters where there is an existing obstruction (bridge support, transmission structure, etc) in close proximity (200')	7	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Weighted Score			244.8			244.8			0.0			77.4			77.4			77.4			0.0			0.0			0.0	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				10.00			10.00			0.00			3.16			3.16			3.16			0.00			0.00			0.00

Table 2
Sheet 4 of 12

Duke Energy
William S. Lee III Nuclear Station
Siting Study Route Evaluation Score Sheet

		ROUTE A		ROUTE B		ROUTE C		ROUTE D		ROUTE E		ROUTE F		ROUTE G		ROUTE H		ROUTE I		ROUTE J		ROUTE K		ROUTE L	
	Weight	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score
Occupied Buildings Factors	1																								
Number of single-family residences within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of single-family residences outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of single-family residences outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of single-family residences between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	7	56	9	72	7	56	9	72	7	56	8	64	7	56	9	72	7	56	9	72	7	56	8	64
Number of single-family residences between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of single-family residences between 500' and 1000' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	4	32	128	30	120	26	104	32	128	28	112	27	108	24	96	22	88	18	72	24	96	20	80	19	76
Number of single-family residences between 500' and 1000' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings outside of the R/W and within 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings outside of the R/W and within 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings between 500' and 1000' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings between 500' and 1000' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		ROUTE M		ROUTE N		ROUTE O		ROUTE P		ROUTE Q		ROUTE R		ROUTE S		ROUTE T		ROUTE U	
	Weight	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score
Occupied Buildings Factors	1																		
Number of single-family residences within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of single-family residences outside of the R/W and within 200' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	1	10	0	0	0	0	0	0	0	0	0	0
Number of single-family residences outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of single-family residences between 200' and 500' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	8	2	16	0	0	1	8	0	0	0	0	3	24	2	16	2	16	3	24
Number of single-family residences between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of single-family residences between 500' and 1000' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	4	22	88	13	52	10	40	13	52	13	52	21	84	22	88	32	128	33	132
Number of single-family residences between 500' and 1000' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of community buildings between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings outside of the R/W and within 500' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings outside of the R/W and within 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings between 500' and 1000' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of school / daycare buildings between 500' and 1000' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		ROUTE A		ROUTE B		ROUTE C		ROUTE D		ROUTE E		ROUTE F		ROUTE G		ROUTE H		ROUTE I		ROUTE J		ROUTE K		ROUTE L	
	Weight	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score
Occupied Buildings Factors (Continued)																									
Number of multi-family residences within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of multi-family residences outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of multi-family residences outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of multi-family residences between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of multi-family residences between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of commercial/industrial buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of commercial/industrial buildings outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of commercial/industrial buildings outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of commercial/industrial buildings between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of commercial/industrial buildings between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Weighted Score			184		192		160		200		168		172		152		160		128		168		136		140
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10			9.20		9.60		8.00		10.00		8.40		8.60		7.60		8.00		6.40		8.40		6.80		7.00

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		ROUTE M		ROUTE N		ROUTE O		ROUTE P		ROUTE Q		ROUTE R		ROUTE S		ROUTE T		ROUTE U	
	Weight	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score
Occupied Buildings Factors (Continued)																			
Number of multi-family residences within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of multi-family residences outside of the R/W and within 200' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of multi-family residences outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of multi-family residences between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of multi-family residences between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings between 200' and 500' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of church buildings between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of commercial/industrial buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of commercial/industrial buildings outside of the R/W and within 200' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
Number of commercial/industrial buildings outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of commercial/industrial buildings between 200' and 500' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	3	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0
Number of commercial/industrial buildings between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) outside of the R/W and within 200' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) between 200' and 500' of the proposed line where the proposed line is **not** parallel and adjacent to an existing transmission line	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of emergency response buildings (EMT/Fire) between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings within the proposed line's R/W	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings outside of the R/W and within 200' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings outside of the R/W and within 200' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings between 200' and 500' of the proposed line where the proposed line is not parallel and adjacent to an existing transmission line	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of government buildings between 200' and 500' of the proposed line where the proposed line is parallel and adjacent to an existing transmission line	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Weighted Score			104		52		48		62		52		108		104		144		156
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10			5.20		2.60		2.40		3.10		2.60		5.40		5.20		7.20		7.80

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		ROUTE A			ROUTE B			ROUTE C			ROUTE D			ROUTE E			ROUTE F			ROUTE G			ROUTE H			ROUTE I			ROUTE J			ROUTE K			ROUTE L	
	Weight	Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score	
Public Visibility Factors	1																																			
Miles of proposed line not parallel and adjacent to an existing transmission line and visible within 1/8 mile of a public viewing area (public road, river, or lake, etc.)	10	2.0	20.3		2.2	22.0		1.9	19.0		2.6	26.0		2.2	22.0		1.6	16.0		2.0	20.0		2.2	22.0		1.8	18.0		2.5	25.0		2.1	21.0		1.5	15.0	
Miles of proposed line not parallel and adjacent to an existing transmission line and visible within 1/8 mile of a state recorded scenic waterway	10	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line parallel and adjacent to an existing transmission line and visible within 1/8 mile of a public viewing area (public road, river, or lake, etc.)	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line not parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a public viewing area (public road, river, or lake, etc.)	8	1.0	8.0		1.2	9.6		0.8	6.4		2.1	16.8		1.7	13.6		1.0	8.0		1.0	8.0		1.2	9.6		0.8	6.4		2.1	16.8		1.7	13.6		1.0	8.0	
Miles of proposed line not parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a state recorded scenic waterway	9	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a public viewing area (public road, river, or lake, etc.)	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line not parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a public viewing area (public road, river, or lake, etc.)	6	1.4	8.4		2.0	12.0		1.1	6.6		2.2	13.2		1.3	7.8		0.5	3.0		1.4	8.4		2.0	12.0		1.1	6.6		2.2	13.2		1.3	7.8		0.5	3.0	
Miles of proposed line not parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a state recorded scenic waterway	7	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a public viewing area (public road, river, or lake, etc.)	3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line not parallel and adjacent to an existing transmission line and visible within 1/2 to 1 mile of a public viewing area (public road, river, or lake, etc.)	4	1.3	5.2		0.6	2.4		0.5	2.0		0.1	0.4		0.0	0.0		0.0	0.0		1.3	5.2		0.6	2.4		0.5	2.0		0.1	0.4		0.0	0.0		0.0	0.0	
Miles of proposed line not parallel and adjacent to an existing transmission line and visible within 1/2 to 1 mile of a state recorded scenic waterway	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line parallel and adjacent to an existing transmission line and visible within 1/2 to 1 mile of a public viewing area (public road, river, or lake, etc.)	1	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Weighted Score			41.9			46.0			34.0			56.4			43.4			27.0			41.6			46.0			33.0			55.4			42.4			26.0	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				6.20			6.80			5.03			8.34			6.42			3.99			6.15			6.80			4.88			8.20			6.27			3.85
Residential Visibility Factors	1																																			
Number of residences which may have very high (VH) visibility of the proposed line	10	5	50		7	70		5	50		7	70		5	50		5	50		2	20		4	40		2	20		4	40		2	20		2	20	
Number of residences which may have high (H) visibility of the proposed line	9	2	18		4	36		3	27		5	45		4	36		1	9		2	18		4	36		3	27		5	45		4	36		1	9	
Number of residences which may have moderate to high (MH) visibility of the proposed line	8	4	32		3	24		4	32		2	16		3	24		2	16		2	16		1	8		3	24		0	0		1	8		0	0	
Number of residences which may have moderate (M) visibility of the proposed line	5	14	70		8	40		7	35		7	35		6	30		6	30		10	50		4	20		3	15		3	15		2	10		2	10	
Number of residences which may have low to moderate (LM) visibility of the proposed line	3	14	42		11	33		16	48		10	30		15	45		6	18		19	57		16	48		21	63		15	45		20	60		11	33	
Number of residences which may have low (L) visibility of the proposed line	1	27	27		26	26		26	26		25	25		25	25		13	13		30	30		29	29		29	29		28	28		28	28		16	16	
Number of residences which may have very low (VL) visibility of the proposed line	0.5	21	11		17	9		13	7		17	9		13	7		11	6		28	14		24	12		20	10		24	12		20	10		18	9	
Total Weighted Score			250			238			225			230			217			142			205			193			188			185			172			97	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				10.00			9.52			9.00			9.20			8.68			5.67			8.22			7.74			7.54			7.41			6.89			3.89

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			ROUTE M			ROUTE N			ROUTE O			ROUTE P			ROUTE Q			ROUTE R			ROUTE S			ROUTE T			ROUTE U	
	Weight	Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score		Raw Data	Weighted Score	
Public Visibility Factors	1																											
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 mile of a public viewing area (public road, river, or lake, etc.)	10	1.9	19.0		2.0	20.0		2.2	22.0		3.4	34.0		3.7	37.0		2.8	28.0		2.5	25.0		3.0	30.0		2.9	29.0	
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 mile of a state recorded scenic waterway	10	0.0	0.0		0.0	0.0		0.0	0.0		0.3	3.0		0.3	3.0		0.3	3.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line parallel and adjacent to an existing transmission line and visible within 1/8 mile of a public viewing area (public road, river, or lake, etc.)	8	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a public viewing area (public road, river, or lake, etc.)	8	0.7	5.6		0.7	5.6		0.5	4.0		1.9	15.2		1.8	14.4		0.8	6.4		1.6	12.8		2.3	18.4		2.3	18.4	
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a state recorded scenic waterway	9	0.0	0.0		0.0	0.0		0.0	0.0		0.2	1.8		0.2	1.8		0.2	1.8		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line parallel and adjacent to an existing transmission line and visible within 1/8 to 1/4 mile of a public viewing area (public road, river, or lake, etc.)	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a public viewing area (public road, river, or lake, etc.)	6	0.3	1.8		0.3	1.8		0.0	0.0		1.4	8.4		1.5	9.0		0.6	3.6		2.5	15.0		1.9	11.4		2.7	16.2	
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a state recorded scenic waterway	7	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line parallel and adjacent to an existing transmission line and visible within 1/4 to 1/2 mile of a public viewing area (public road, river, or lake, etc.)	3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/2 to 1 mile of a public viewing area (public road, river, or lake, etc.)	4	0.2	0.8		0.2	0.8		0.0	0.0		0.0	0.0		0.6	2.4		0.0	0.0		0.3	1.2		0.3	1.2		0.3	1.2	
Miles of proposed line **not** parallel and adjacent to an existing transmission line and visible within 1/2 to 1 mile of a state recorded scenic waterway	5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Miles of proposed line parallel and adjacent to an existing transmission line and visible within 1/2 to 1 mile of a public viewing area (public road, river, or lake, etc.)	1	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Weighted Score			27.2			28.2			26.0			62.4			67.6			42.8			54.0			61.0			64.8	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				4.02			4.17			3.85			9.23			10.00			6.33			7.99			9.02			9.59
Residential Visibility Factors	1																											
Number of residences which may have very high (VH) visibility of the proposed line	10	0	0		0	0		0	0		1	10		0	0		0	0		0	0		0	0		0	0	
Number of residences which may have high (H) visibility of the proposed line	9	1	9		1	9		1	9		1	9		1	9		1	9		1	9		1	9		1	9	
Number of residences which may have moderate to high (MH) visibility of the proposed line	8	1	8		0	0		0	0		1	8		1	8		0	0		1	8		2	16		2	16	
Number of residences which may have moderate (M) visibility of the proposed line	5	3	15		1	5		1	5		3	15		2	10		5	25		1	5		4	20		5	25	
Number of residences which may have low to moderate (LM) visibility of the proposed line	3	3	9		5	15		1	3		7	21		7	21		9	27		12	36		16	48		16	48	
Number of residences which may have low (L) visibility of the proposed line	1	14	14		11	11		5	5		7	7		12	12		13	13		29	29		17	17		18	18	
Number of residences which may have very low (VL) visibility of the proposed line	0.5	14	7		19	10		12	6		24	12		26	13		26	13		24	12		28	14		28	14	
Total Weighted Score			62			50			28			82			73			87			99			124			130	
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10				2.48			1.98			1.12			3.29			2.93			3.49			3.97			4.97			5.21

Duke Energy
William S. Lee III Nuclear Station
Siting Study Route Evaluation Score Sheet

		ROUTE A		ROUTE B		ROUTE C		ROUTE D		ROUTE E		ROUTE F		ROUTE G		ROUTE H		ROUTE I		ROUTE J		ROUTE K		ROUTE L	
	Weight	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score
Water Quality Factors	1																								
Acres of right-of-way requiring clearing to mineral soil within 100' of any water feature (stream, river, lake, or pond)	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of right-of-way requiring clearing within 100' of any water feature (stream, river, lake, or pond)	7	47.0	329.0	34.7	242.9	35.7	249.9	43.4	303.8	44.4	310.8	44.5	311.5	43.4	303.8	31.2	218.4	32.1	224.7	39.9	279.3	40.9	286.3	40.9	286.3
Acres of wetland--type PUB, Palustrine Unconsolidated Bottom--impacted by clearing within the wetland	7	0.5	3.5	0.4	2.8	0.4	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.5	0.4	2.8	0.4	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PUB, Palustrine Unconsolidated Bottom--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2EM, Estuarine Intertidal Emergent--impacted by clearing within the wetland	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2EM, Estuarine Intertidal Emergent--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2FO, Estuarine Intertidal Forested--impacted by clearing within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2FO, Estuarine Intertidal Forested--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2SS, Estuarine Intertidal Scrub/Shrub--impacted by clearing within the wetland	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2SS, Estuarine Intertidal Scrub/Shrub--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2US, Estuarine Intertidal Unconsolidated Shore--impacted by clearing within the wetland	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2US, Estuarine Intertidal Unconsolidated Shore--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E1UB, Estuarine Subtidal Unconsolidated Bottom--impacted by clearing within the wetland	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E1UB, Estuarine Subtidal Unconsolidated Bottom--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PSS, Palustrine Scrub/Scrub--impacted by clearing within the wetland	5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.1	0.5	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.1	0.5	0.1	0.5
Acres of wetland--type PSS, Palustrine Scrub/Scrub--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PEM, Palustrine Emergent--impacted by clearing within the wetland	5	0.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PEM, Palustrine Emergent--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PFO, Palustrine Forested--impacted by clearing within the wetland	10	5.3	53.0	4.4	44.0	4.4	44.0	1.9	19.0	1.9	19.0	2.0	20.0	5.3	53.0	4.4	44.0	4.4	44.0	1.9	19.0	1.9	19.0	2.0	20.0
Acres of wetland--type PFO, Palustrine Forested--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of right-of-way requiring clearing to mineral soil within 100' of a wetland (any type)	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Weighted Score			388.0		289.7		296.7		323.3		330.3		332.0		362.8		265.2		271.5		298.8		305.8		306.8
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10			9.76		7.29		7.46		8.13		8.31		8.35		9.12		6.67		6.83		7.52		7.69		7.72
Total Of Weighted Category Scores			58.00		53.91		50.70		54.21		50.85		46.12		53.75		49.74		46.67		49.89		46.50		41.80
Route's Rank			20		17		14		18		15		5		16		12		7		13		6		2

Duke Energy
William S. Lee III Nuclear Station
Siting Study Route Evaluation Score Sheet

		ROUTE M		ROUTE N		ROUTE O		ROUTE P		ROUTE Q		ROUTE R		ROUTE S		ROUTE T		ROUTE U	
	Weight	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score	Raw Data	Weighted Score
Water Quality Factors	1																		
Acres of right-of-way requiring clearing to mineral soil within 100' of any water feature (stream, river, lake, or pond)	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of right-of-way requiring clearing within 100' of any water feature (stream, river, lake, or pond)	7	33.0	231.0	33.3	233.1	27.4	191.8	19.6	137.2	22.1	154.7	26.9	188.3	27.8	194.6	28.7	200.9	28.2	197.4
Acres of wetland--type PUB, Palustrine Unconsolidated Bottom--impacted by clearing within the wetland	7	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PUB, Palustrine Unconsolidated Bottom--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2EM, Estuarine Intertidal Emergent--impacted by clearing within the wetland	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2EM, Estuarine Intertidal Emergent--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2FO, Estuarine Intertidal Forested--impacted by clearing within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2FO, Estuarine Intertidal Forested--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2SS, Estuarine Intertidal Scrub/Shrub--impacted by clearing within the wetland	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2SS, Estuarine Intertidal Scrub/Shrub--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2US, Estuarine Intertidal Unconsolidated Shore--impacted by clearing within the wetland	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E2US, Estuarine Intertidal Unconsolidated Shore--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E1UB, Estuarine Subtidal Unconsolidated Bottom--impacted by clearing within the wetland	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type E1UB, Estuarine Subtidal Unconsolidated Bottom--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PSS, Palustrine Scrub/Scrub--impacted by clearing within the wetland	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	6.0
Acres of wetland--type PSS, Palustrine Scrub/Scrub--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PEM, Palustrine Emergent--impacted by clearing within the wetland	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.0	0.0	0.0	2.3	11.3
Acres of wetland--type PEM, Palustrine Emergent--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of wetland--type PFO, Palustrine Forested--impacted by clearing within the wetland	10	13.8	138.0	13.8	138.0	0.7	7.0	7.7	77.0	5.2	52.0	7.3	73.0	20.2	202.0	12.3	123.0	5.4	54.0
Acres of wetland--type PFO, Palustrine Forested--impacted by the placement of a structure and/or access road within the wetland	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acres of right-of-way requiring clearing to mineral soil within 100' of a wetland (any type)	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Weighted Score			**369.0**		**371.1**		**198.8**		**214.9**		**207.4**		**261.3**		**397.6**		**323.9**		**268.7**
Weighted Score's Relation to Maximum Score Adjusted to a Score of 0-10			**9.28**		**9.33**		**5.00**		**5.40**		**5.22**		**6.57**		**10.00**		**8.15**		**6.76**
Total Of Weighted Category Scores			**48.58**		**48.09**		**30.99**		**44.76**		**45.53**		**47.00**		**48.69**		**57.63**		**58.20**
Route's Rank			**10**		**9**		**1**		**3**		**4**		**8**		**11**		**19**		**21**

Duke Energy
William S. Lee III Nuclear Station 230 kV and 525 kV Fold-In Lines
Siting Study Route Evaluation Summary Sheet

	Route A	Route B	Route C	Route D	Route E	Route F	Route G	Route H	Route I	Route J	Route K	Route L	Route M	Route N	Route O	Route P	Route Q	Route R	Route S	Route T	Route U
Cultural and Natural Resource Factors	2.90	1.45	1.45	0.65	0.65	1.61	3.06	1.61	1.61	0.81	0.81	1.77	3.06	4.68	3.87	6.94	6.94	7.58	3.55	9.52	10.00
Land Cover Factors	10.00	9.28	9.76	8.99	9.46	9.64	9.53	8.81	9.28	8.51	8.98	9.17	7.53	7.81	7.37	6.71	6.96	7.17	8.78	9.47	9.68
Property Ownership Factors	9.94	9.97	10.00	8.90	8.93	8.26	9.46	9.50	9.52	8.43	8.45	7.79	7.01	7.52	7.38	6.93	7.72	7.30	9.20	9.30	9.16
Land Use Factors	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.61	0.61	0.61	0.61	0.61	10.00	10.00	0.00	3.16	3.16	3.16	0.00	0.00	0.00
Occupied Buildings Factors	9.20	9.60	8.00	10.00	8.40	8.60	7.60	8.00	6.40	8.40	6.80	7.00	5.20	2.60	2.40	3.10	2.60	5.40	5.20	7.20	7.80
Visibility Factors (Public)	6.20	6.80	5.03	8.34	6.42	3.99	6.15	6.80	4.88	8.20	6.27	3.85	4.02	4.17	3.85	9.23	10.00	6.33	7.99	9.02	9.59
Visibility Factors (Residential)	10.00	9.52	9.00	9.20	8.68	5.67	8.22	7.74	7.54	7.41	6.89	3.89	2.48	1.98	1.12	3.29	2.93	3.49	3.97	4.97	5.21
Water Quality Factors	9.76	7.29	7.46	8.13	8.31	8.35	9.12	6.67	6.83	7.52	7.69	7.72	9.28	9.33	5.00	5.40	5.22	6.57	10.00	8.15	6.76
Total Of Normalized Category Scores	58.00	53.91	50.70	54.21	50.85	46.12	53.75	49.74	46.67	49.89	46.50	41.80	48.58	48.09	30.99	44.76	45.53	47.00	48.69	57.63	58.20
Route's Siting Study Rank	20	17	14	18	15	5	16	12	7	13	6	2	10	9	1	3	4	8	11	19	21
Route's Cost Analysis Rank																					

Legend

- Scored in Highest 1/3 of Score Range
- Scored in Middle 1/3 of Score Range
- Scored in Lowest 1/3 of Score Range

TABLE 3

Duke Energy
William S. Lee III Nuclear Station 230 kV and 525 kV Fold-In Lines
Siting Study Route Evaluation Summary Sheet of Combined Scores for Viable Route Combinations

Individual	Route Rank		10		9		1		3		4		8		11		19		21	
			Route M		Route N		Route O		Route P		Route Q		Route R		Route S		Route T		Route U	
			Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
20	Route A	Environmental Analysis	106.58	97	106.09	94	88.99	15	102.76	78	103.53	83	105.00	91	106.69	98	115.63	114	116.20	115
		Estimated Capital Costs	$ 119.48		$ 120.60		$ 118.96		$ 112.91		$ 115.19		$ 113.20		$ 118.87		$ 119.44		$ 118.18	
17	Route B	Environmental Analysis	102.49	76	102.00	72	84.90	9	98.67	55	99.44	64	100.91	69	102.60	77	111.54	109	112.11	112
		Estimated Capital Costs	$ 119.58		$ 120.71		$ 119.07		$ 113.01		$ 115.30		$ 113.30		$ 118.97		$ 119.54		$ 118.28	
14	Route C	Environmental Analysis	99.28	59	98.79	56	81.69	6	95.46	39	96.23	42	97.70	48	99.39	61	108.33	104	108.90	106
		Estimated Capital Costs	$ 119.83		$ 120.95		$ 119.31		$ 113.26		$ 115.54		$ 113.54		$ 119.21		$ 119.79		$ 118.53	
18	Route D	Environmental Analysis	102.79	79	102.30	73	85.20	10	98.97	58	99.74	66	101.21	70	102.90	80	111.84	110	112.41	113
		Estimated Capital Costs	$ 118.14		$ 119.27		$ 117.63		$ 111.57		$ 113.86		$ 111.86		$ 117.53		$ 118.11		$ 116.84	
15	Route E	Environmental Analysis	99.43	62	98.94	57	81.84	7	95.61	41	96.38	43	97.85	50	99.54	65	108.48	105	109.05	107
		Estimated Capital Costs	$ 118.39		$ 119.51		$ 117.87		$ 111.82		$ 114.10		$ 112.11		$ 117.78		$ 118.35		$ 117.09	
5	Route F	Environmental Analysis							90.88	18	91.65	21	93.12	24	94.81	34	103.75	85	104.32	88
		Estimated Capital Costs							$ 109.90		$ 112.19		$ 110.19		$ 115.86		$ 116.44		$ 115.17	
16	Route G	Environmental Analysis			101.84	71	84.74	8	98.51	53	99.28	59	100.75	68	102.44	75	111.38	108	111.95	111
		Estimated Capital Costs			$ 117.89		$ 116.25		$ 110.20		$ 112.49		$ 110.49		$ 116.16		$ 116.73		$ 115.47	
12	Route H	Environmental Analysis			97.83	49	80.73	4	94.50	30	95.27	36	96.74	44	98.43	52	107.37	100	107.94	102
		Estimated Capital Costs			$ 118.44		$ 116.80		$ 110.74		$ 113.03		$ 111.03		$ 116.70		$ 117.28		$ 116.01	
7	Route I	Environmental Analysis			94.76	33	77.66	2	91.43	20	92.20	23	93.67	28	95.36	37	104.30	87	104.87	90
		Estimated Capital Costs			$ 118.70		$ 117.06		$ 111.00		$ 113.29		$ 111.29		$ 116.96		$ 117.54		$ 116.27	
13	Route J	Environmental Analysis			97.98	51	80.88	5	94.65	32	95.42	38	96.89	46	98.58	54	107.52	101	108.09	103
		Estimated Capital Costs			$ 117.00		$ 115.36		$ 109.31		$ 111.59		$ 109.60		$ 115.26		$ 115.84		$ 114.58	
6	Route K	Environmental Analysis			94.59	31	77.49	1	91.26	19	92.03	22	93.50	27	95.19	35	104.13	86	104.70	89
		Estimated Capital Costs			$ 117.24		$ 115.61		$ 109.55		$ 111.84		$ 109.84		$ 115.51		$ 116.08		$ 114.82	
2	Route L	Environmental Analysis							86.56	11	87.33	12	88.80	14	90.49	17	99.43	62	100.00	67
		Estimated Capital Costs							$ 107.69		$ 109.97		$ 107.98		$ 113.65		$ 114.22		$ 112.96	
10	Route M	Environmental Analysis							93.34	25	94.11	29	95.58	40	97.27	47	106.21	95	106.78	99
		Estimated Capital Costs							$ 105.52		$ 107.81		$ 105.81		$ 111.48		$ 112.05		$ 110.79	
9	Route N	Environmental Analysis													96.78	45	105.72	93	106.29	96
		Estimated Capital Costs													$ 112.56		$ 113.13		$ 111.87	
1	Route O	Environmental Analysis													79.68	3	88.62	13	89.19	16
		Estimated Capital Costs													$ 112.30		$ 112.88		$ 111.62	
3	Route P	Environmental Analysis													93.45	26	102.39	74	102.96	81
		Estimated Capital Costs													$ 113.65		$ 114.23		$ 112.96	
4	Route Q	Environmental Analysis															103.16	82	103.73	84
		Estimated Capital Costs															$ 116.51		$ 115.25	
8	Route R	Environmental Analysis															116.51	116	105.20	92
		Estimated Capital Costs															$ 114.06		$ 112.80	

Legend

- Route combinations scoring 1st through 5th in transmission line siting study
- Route combinations scoring 6th through 10th in transmission line siting study
- Route combinations scoring 11th through 15th in transmission line siting study
- All other route cominbations

Note: Estimated costs are in millions of dollars.

Table 4