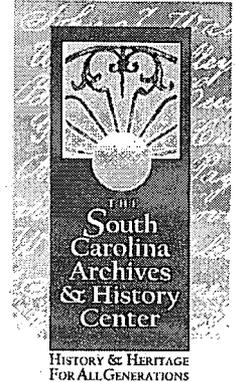


May 27, 2010



Theodore Bowling  
Duke Energy  
EC09D/P.O. Box 1006  
Charlotte, NC 28201-1006

Re: Lee Nuclear Transmission Line Visual Survey, Cherokee County, SC  
SHPO #: 09CW0247

Dear Mr Bowling:

Thank you for your letter of April 29, which we received on April 30, regarding the above referenced project. We also received a visual survey report as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to the Federal Energy Regulatory Commission pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800.

The transmission line corridor will be adjacent to the Reid-Walker-Johnson Farm and the Smith Ford's Farm, which are both eligible for listing in the National Register of Historic Places. Based on the description of the Area of Potential Effect (APE) and the identification of historic properties within the APE, our office concurs with the assessment that there will be **no adverse effect** on either of these farms due to distance, topography, and vegetation.

If you have any questions, please contact me at (803) 896-6169 or [cwilson@scdah.state.sc.us](mailto:cwilson@scdah.state.sc.us).

Sincerely,

Caroline Dover Wilson  
Review and Compliance Coordinator  
State Historic Preservation Office

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 139, Cultural Resources**

**NRC RAI:**

Provide clarification on whether the additional spoils areas, parking areas, laydown areas, transmission realignment, cofferdam and dewatering pipe area, diversion pipe spillway, break tank, realignment of Highway 329, spillway and riprap are covered in the Phase 2 cultural resources survey.

**Duke Energy Response:**

The final report for the cultural resources report (referred to by NRC as the Phase 2 cultural resources survey report) for Make-Up Pond C was provided to the NRC in the Supplemental Response F to RAI 119 (Duke Energy letter WLG2010.06-05, June 23, 2010). Figure 1.1 of the Phase 2 report illustrates that additional spoils areas, parking areas, laydown areas, transmission realignment, cofferdam and dewatering pipe area, diversion pipe spillway, break tank, realignment of Highway 329, spillway and riprap are covered within the survey area.

**Associated Revision to the Lee Nuclear Station Combined License Application:**

None

**Attachment:**

None

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 144, Ecology - Aquatic**

**NRC RAI:**

Provide a discussion of best management practices or protections that would be in place for aquatic organisms during temporary stream diversions (e.g., screening of pumps to prevent entrainment; continuous operation of pumps to ensure adequate water downstream of the construction site; transport of any migrating/moving aquatic organisms through the construction site, etc.).

**Duke Energy Response:**

During temporary stream diversions, up to seven submersible pumps will be used to pass flows up to a 25-year, 24-hour storm. Under normal flows, a single pump will run continuously, but throttled so that discharge would be of relatively equal flow to that coming from upstream. Therefore, little change in downstream flow is expected during construction.

The pump that will be used to bypass the normal stream will be fitted with 0.25" x 0.25" stainless steel welded wire fabric. The welded wire fabric will be cleaned, as needed. This would prevent entrainment of juvenile and larger fish; however, entrainment of fish eggs and larvae may occur.

Pumping for temporary stream diversion will be conducted in accordance with Section 404 Permit conditions. It is important to note that the stream will be impounded, resulting in a permanent shift in the fish community from lotic species to lentic species. London Creek is dominated by numerous small individuals of negligible fishing value. No species of special regulatory status and no species that rely on upstream or downstream migration occur in the project area.

**Associated Revision to the Lee Nuclear Station Combined License Application:**

None

**Attachment:**

None

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

**RAI Letter Dated: June 22, 1010**

**Reference NRC RAI Numbers: ER RAI 149, Ecology - Aquatic  
ER RAI 150, Ecology - Aquatic**

**NRC RAI:**

**RAI 149:** Provide qualitative information or quantitative data that describe the susceptibility for important fish and shellfish species to be impinged at the Pond C intake.

**RAI 150:** Confirm whether or not the intake screens for the Pond C intake system would be constructed of 3/8-in mesh with through-screen velocities less than 0.5 ft/s.

**Duke Energy Response:**

The specific fish species that will be present in Make-Up Pond C (once London Creek is impounded) are unknown, but will likely resemble other area reservoirs typical to the Piedmont of South Carolina that are dominated by bass, sunfish, catfish, and shad.

The intake screens at Make-Up Pond C will be cylindrical wedge-wire, with through-screen velocities less than 0.5 fps. According to the Clean Water Act Section 316(b) rule, this technology is considered Best Technology Available by the EPA for reducing adverse environmental impacts (i.e. impingement mortality and entrainment). The low through-screen velocity will prevent impingement of healthy fish and the small mesh size will prevent entrainment of most life stages (except eggs and early larvae).

The location of the intake screen in deep water will also aid in reducing the potential of impingement and entrainment. The species that will likely occur in the reservoir spawn in the littoral zone and most of the early life stages recruit within the shallow shoreline zone. Therefore, the likelihood of early life stages occurring near the intake screen (and potentially becoming impinged or entrained) would be low.

**Associated Revisions to the Lee Nuclear Station Combined License Application:**

None

**Attachments:**

None

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Numbers: ER RAI 157, ER RAI 161, ER RAI 163, ER RAI 165,  
ER RAI 167, ER RAI 168, ER RAI 170; Ecology -  
Terrestrial**

**NRC RAI 157:**

Provide acreage data on vegetation cover types in the portions of the re-routed transmission line and pipeline corridors which occur outside the study area, and the laydown area that occurs outside the study area.

**NRC RAI 161:**

Provide information regarding the location of the proposed new transmission line, its length, corridor width, cover/habitat types it intersects, etc. Provide a graphic depiction of the location of the new transmission line corridor.

**NRC RAI 163:**

Provide clarification on whether the lay-down area in OFM habitat outside the Pond C study area is accounted for in Table 4.3-2. If not, provide a revision of Table 4.3-2 that accounts for this lay-down area.

**NRC RAI 165:**

Provide clarification on whether the habitat impacts quantified in Table 4.3-2 of the Supplement to the ER for the re-routing of the 44-kV transmission line include the part of the re-routed transmission line that occurs outside the Pond C study area. Distinguish between such impacts inside and outside the Pond C study area both in the text in Section 4.3.1.2.2 and in a revision of Table 4.3-2.

**NRC RAI 167:**

Revise Table 4.3-2 so that the data are grouped into the following three categories: (1) within the inundation area, (2) outside the inundation area but within the study area boundary, and (3) outside the study area boundary.

**NRC RAI 168:**

Revise Table 4.3-2 to include separate quantified impacts for temporary disturbances and permanent habitat losses. Discuss any measures that would be undertaken to restore temporarily disturbed habitats.

**NRC RAI 170:**

Provide clarification on whether habitat impacts associated with the water pipelines connecting the Broad River, Pond B, and Pond C are included in Table 4.3-2, and revise Table 4.3-2 if necessary.

**Duke Energy Response:**

Vegetation cover types within the Make-Up Pond C associated facilities outside of the Make-Up Pond C study area, including the re-routed transmission line, the raw water pipeline, and the laydown area, are provided in revised Table 4.3-2 (Attachment 157-01). Since all vegetation cover within the aforementioned areas is assumed to be impacted during construction, the acreage of vegetation cover within these areas is equal to the acreage to be impacted in Table 4.3-2.

The new 44-kV transmission line begins at the intake/discharge structure for Make-Up Pond C and connects to the existing 44-kV line within the Lee Nuclear Site (see attached revised Figure 4.1-2, Attachment 157-02). This transmission line corridor is approximately 5,700 feet long and is 100 feet wide. Land cover types within the transmission corridor are provided within revised Table 4.3-2. Associated revisions to the text in the ER Supplement are provided in Attachment 157-05.

Table 4.3-2 has been revised to include the comments within the subject RAIs. The original table was split into three individual tables, one for permanent impacts, one for temporary impacts, and a summary table. Some of the facilities identified in the original table will have both temporary and permanent impacts associated with them. An example of this is temporary workspace necessary for the spillway construction. For these facilities, it may not be possible to distinguish between the temporary and permanent impacts until final design has been completed. Therefore, in response to this RAI, facilities that have both permanent and temporary impacts will be considered permanent impacts in the table. The one exception is impacts from the haul road. The haul road will be removed after completion of construction of Make-Up Pond C; however, impacts to the open water cover types will not be restored to open water. Therefore, impacts to open water are considered permanent, while impacts from the haul road to all other cover types are considered temporary. Although temporary roads and borrow areas will initially impact areas within the impoundment footprint, these areas will ultimately be permanently impacted by the impoundment. Therefore, all impacts to land cover within the inundation area are included within the *Impoundment* acreage in Table 4.3-2. Impacts to areas outside of the Make-Up Pond C study area are designated as being within the Lee Nuclear Site or outside of the study area. All other entries within Table 4.3-2 are outside of the inundation area but within the study area.

Information on the Make-Up Pond C spillway is now available and impacts from this facility have been added to the revised table. Table 4.3-2 of the ER Supplement has been revised to include impacts to cover types within:

- Re-routed 44-kV transmission line that extends outside the Make-Up Pond C study area
- New 44-kV transmission line extending to the Make-Up Pond C intake/discharge structure
- Areas within the Lee Nuclear Site impacted by the raw water pipeline necessary to refill Make-Up Ponds B and C
- Laydown area within the Lee Nuclear Site necessary for Make-Up Pond C construction
- Proposed Make-Up Pond C spillway

Changes in the text of the ER Supplement associated with the revision to Table 4.3-2 are provided as revisions in Attachment 157-06. Included in the text revisions to Section 4.3.2.3.2.1 are revisions incorporated from the response to RAI 166. The new transmission line also crosses three streams within the Make-Up Pond C study area. Further discussion and associated ER Supplement revisions are provided in response to RAI 164.

Figure 4.3-3 of the ER Supplement has been revised (Attachment 157-03) to show impacts to cover types included in the revised Table 4.3-2. The raw water pipeline within the Lee Nuclear Site extends outside of the figure, however, it is depicted on Figure 4.3-1 in the ER Supplement. This figure has not been revised, but is included as an attachment for reference (Attachment 157-04). As clarification wetlands were mapped as a separate cover type within the Lee Nuclear Site but not within the Make-Up Pond C study area. The jurisdictional status and extent of wetlands shown on Figure 4.3-1 are subject to verification by the U.S. Army Corps of Engineers. An updated discussion concerning wetland impacts from Make-Up Pond C construction features located outside Make-Up Pond C is provided in response to RAI 164.

All areas cleared as temporary construction areas would first be re-vegetated in accordance with the Duke Energy BMPs for erosion control in compliance with South Carolina stormwater management permits. Temporary roads and buildings will be removed upon completion of Make-Up Pond C construction. Waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers that have temporary disturbances due to construction features such as the cofferdam and diversion pipe will be restored after construction according to conditions within the Section 404 permit. Long term landscaping for disturbed areas would be reviewed by site security staff to ensure an appropriately cleared security buffer. For areas outside the security buffer, landscape decisions would be made by Duke Energy landscape architects. Past practices have been to mechanically disturb the upper several inches of soil to facilitate seed germination, amend the soil where necessary, re-vegetate using native vascular plants and allow natural succession to take over.

**Associated Revisions to the Lee Nuclear Station Combined License Application:**

1. Revisions to COLA ER Supplement, Table 4.3-2, page 4-33
2. Revisions to COLA ER Supplement, Figure 4.1-2, page 4-5
3. Revisions to COLA ER Supplement, Figure 4.3-3, page 4-39
4. Revisions to COLA ER Supplement, Chapter 4.3.1.2.2, page 4-19
5. Revisions to COLA ER Supplement, Chapter 4.3.1.2.3.1, pages 4-19 through 4-22

**Attachments:**

- |                   |   |
|-------------------|---|
| Attachment 157-01 | Revised Table 4.3-2                                   |
| Attachment 157-02 | Revised Figure 4.1-2                                  |
| Attachment 157-03 | Revised Figure 4.3-3                                  |
| Attachment 157-04 | Figure 4.3-1  |
| Attachment 157-05 | Revisions to COLA, ER Supplement, Chapter 4.3.1.2.2   |
| Attachment 157-06 | Revisions to COLA, ER Supplement, Chapter 4.3.1.2.3.1 |

Attachment 157-01

Revisions to COLA, ER Supplement, Revised Table 4.3-2

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TABLE 4.3-2a  
COVER TYPES PERMENANTLY IMPACTED DURING MAKE-UP POND C CONSTRUCTION

	Estimated Disturbed Acreage	OFM	P	PMH	USC	MH	MHP	OPMH	NAW	NJW	OW
<b>Reservoir Features</b>											
Impoundment	618.84	88.13	104.45	9.91	1.06	308.77	101.11	-	-	-	5.41
Dam Footprint	14.52	0.62	6.63	-	-	4.43	2.84	-	-	-	-
Saddle Dikes	6.96	0.95	5.27	-	-	0.74	-	-	-	-	-
Pond C Spillway	2.38	-	0.01	-	-	1.74	0.63	-	-	-	-
<b>Impacts Outside Inundation Area and within Pond C Study Area</b>											
Buck Mill Road	4.89	0.82	3.96	-	-	0.07	0.04	-	-	-	-
Grace Road	2.07	1.69	0.13	-	-	0.14	0.11	-	-	-	-
Heavy Haul Roads and Haul Paths	0.94	-	-	-	-	-	-	-	-	-	0.94
Lake Cherokee Spillway	0.43	0.43	-	-	-	-	-	-	-	-	-
Newly Built Road	3.40	-	0.16	-	2.14	-	1.10	-	-	-	-
Old Barn Road	8.03	8.03	-	-	-	-	-	-	-	-	-
Peeler Ridge Road	1.48	0.03	1.45	-	-	-	-	-	-	-	-
Pipeline	3.23	0.25	1.96	-	0.78	0.01	0.23	-	-	-	-
Pipeline Break Tank	0.16	-	-	-	0.16	-	-	-	-	-	-
Pond C Pumphouse	-	-	-	-	-	-	-	-	-	-	-
Rip Rap	0.29	0.23	-	-	-	0.06	-	-	-	-	-
Road to Pond C	6.49	0.61	1.60	-	-	1.37	2.91	-	-	-	-
Rolling Mill Road	15.10	7.15	5.54	-	-	1.22	0.93	0.26	-	-	-
SC 329 – New Alignment	31.11	15.96	2.43	4.36	-	7.45	0.91	-	-	-	-
Transmission Line – Re-route	18.45	7.17	1.66	2.36	-	5.19	0.23	-	-	-	1.84
Transmission Line – New	3.07	0.12	2.59	-	-	0.33	0.03	-	-	-	-
Rail Line Crossings	4.74	-	1.86	-	-	1.67	1.21	-	-	-	-
Spoils Area	186.21	73.61	67.99	-	8.76	26.76	1.29	-	-	-	7.80
Vegetation Clearing	72.45	6.80	14.87	4.71	-	30.46	15.61	-	-	-	-
White Road	6.33	5.64	0.64	-	-	0.05	-	-	-	-	-
<b>Impacts within Lee Site</b>											
Pipeline	39.78	5.52	0.05	4.70	-	12.08	12.65	4.75	-	0.03	-
Transmission Line – New	3.97	0.13	-	1.28	-	1.91	-	0.65	-	-	-
<b>Impacts Outside Pond C Study Area</b>											
Transmission Line – Re-route	3.05	-	-	-	-	-	3.05	-	-	-	-
<b>Total</b>	<b>1,058.37</b>	<b>223.89</b>	<b>223.25</b>	<b>27.32</b>	<b>12.90</b>	<b>404.45</b>	<b>144.88</b>	<b>5.66</b>	<b>-</b>	<b>0.03</b>	<b>15.99</b>

Cover Type Key: 1) Open Areas, Fields and Meadows (OFM), 2) Pine (P), 3) Pine-Mixed Hardwood (PMH), 4) Upland Scrub (USC), 5) Mixed Hardwood (MH), 6) Mixed Hardwood-Pine (MHP), 7) Open Pine-Mixed Hardwood (OPMH), 8) Non-Alluvial Wetland (NAW), (9) Non-Jurisdictional Wetland (NJW), 10) Open Water (OW).

TABLE 4.3-2b  
COVER TYPES TEMPORARILY IMPACTED DURING MAKE-UP POND C CONSTRUCTION

	Estimated Disturbed Acreage	OFM	P	PMH	USC	MH	MHP	OPMH	NAW	NJW	OW
<b>Impacts Outside Inundation Area and within Pond C Study Area</b>											
Borrow Area	7.67	4.15	0.65	-	-	1.70	1.17	-	-	-	-
Dewatering Pipe	0.03	-	-	-	-	0.03	-	-	-	-	-
Diversion Pipe	0.36	-	-	-	-	0.34	0.02	-	-	-	-
Field Office	0.11	0.11	-	-	-	-	-	-	-	-	-
Heavy Haul Roads and Haul Paths	10.68	6.92	0.01	-	-	3.75	-	-	-	-	-
Laydown	4.78	3.21	-	-	1.04	-	0.53	-	-	-	-
Logging Roads	12.80	0.25	3.36	6.98	1.19	1.02	-	-	-	-	-
Mechanics Shop	0.17	0.17	-	-	-	-	-	-	-	-	-
Parking	13.03	9.37	1.95	-	-	0.61	1.10	-	-	-	-
Upstream Cofferdam	0.18	-	-	-	-	0.12	0.06	-	-	-	-
<b>Impacts within Lee Site</b>											
Laydown	6.51	5.77	-	-	-	-	0.20	0.46	0.08	-	-
Total	56.32	29.95	5.97	6.98	2.23	7.57	3.08	0.46	0.08	-	-

Cover Type Key: 1) Open Areas, Fields and Meadows (OFM), 2) Pine (P), 3) Pine-Mixed Hardwood (PMH), 4) Upland Scrub (USC), 5) Mixed Hardwood (MH), 6) Mixed Hardwood-Pine (MHP), 7) Open Pine-Mixed Hardwood (OPMH), 8) Non-Alluvial Wetland (NAW), (9) Non-Jurisdictional Wetland (NJW), 10) Open Water (OW).

TABLE 4.3-2c  
TOTAL IMPACTS TO COVER TYPES RESULTING FROM MAKE-UP POND C CONSTRUCTION

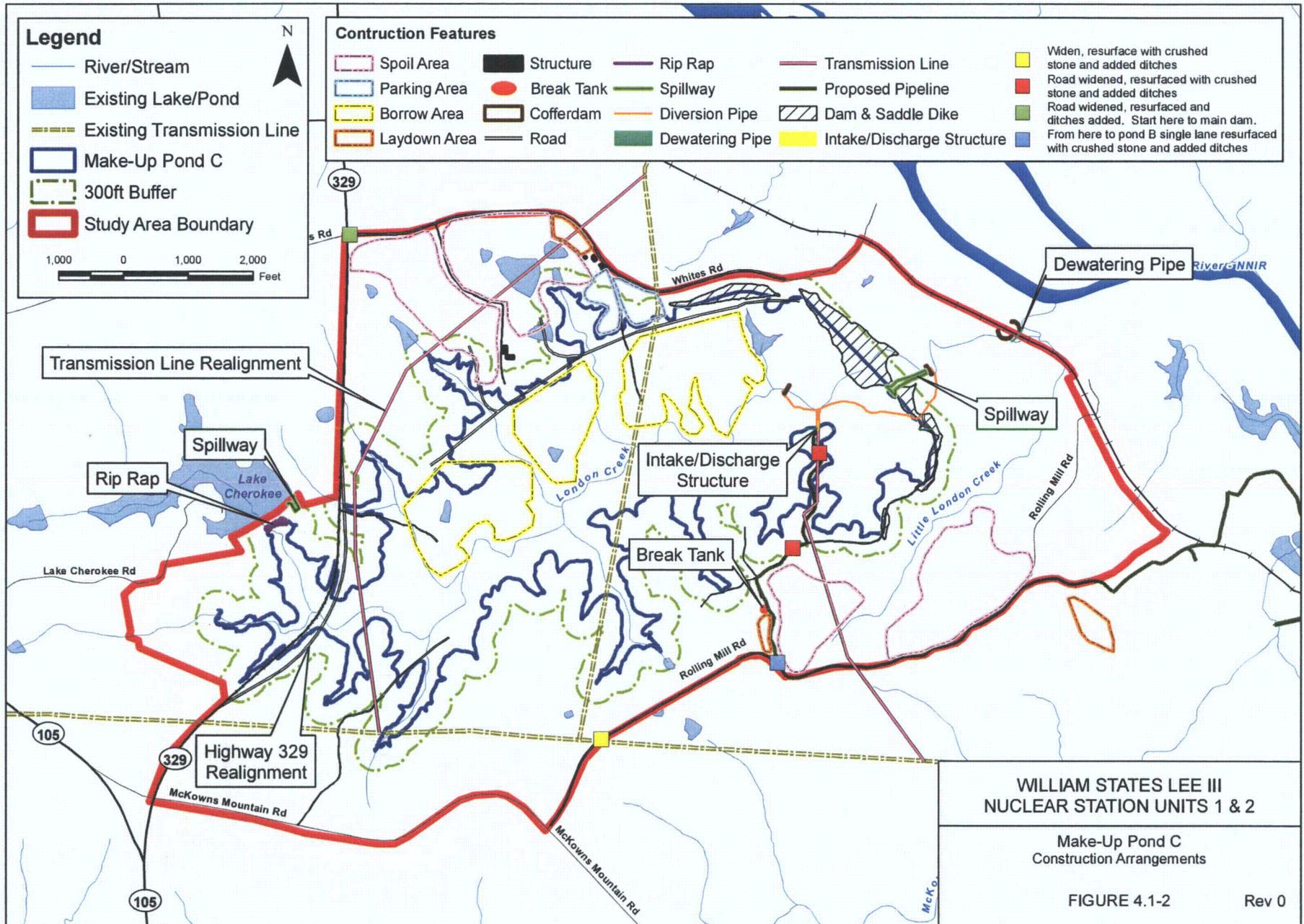
	Estimated Disturbed Acreage	OFM	P	PMH	USC	MH	MHP	OPMH	NAW	NJW	OW
Permanent Impacts	1,058.37	223.89	223.25	27.32	12.90	404.45	144.88	5.66	-	0.03	15.99
Temporary Impacts	56.32	29.95	5.97	6.98	2.23	7.57	3.08	0.46	0.08	-	-
Total	1,114.69	253.84	229.22	34.30	15.13	412.02	147.96	6.12	0.08	0.03	15.99

Cover Type Key: 1) Open Areas, Fields and Meadows (OFM), 2) Pine (P), 3) Pine-Mixed Hardwood (PMH), 4) Upland Scrub (USC), 5) Mixed Hardwood (MH), 6) Mixed Hardwood-Pine (MHP), 7) Open Pine-Mixed Hardwood (OPMH), 8) Non-Alluvial Wetland (NAW), (9) Non-Jurisdictional Wetland (NJW), 10) Open Water (OW).

Attachment 157-02

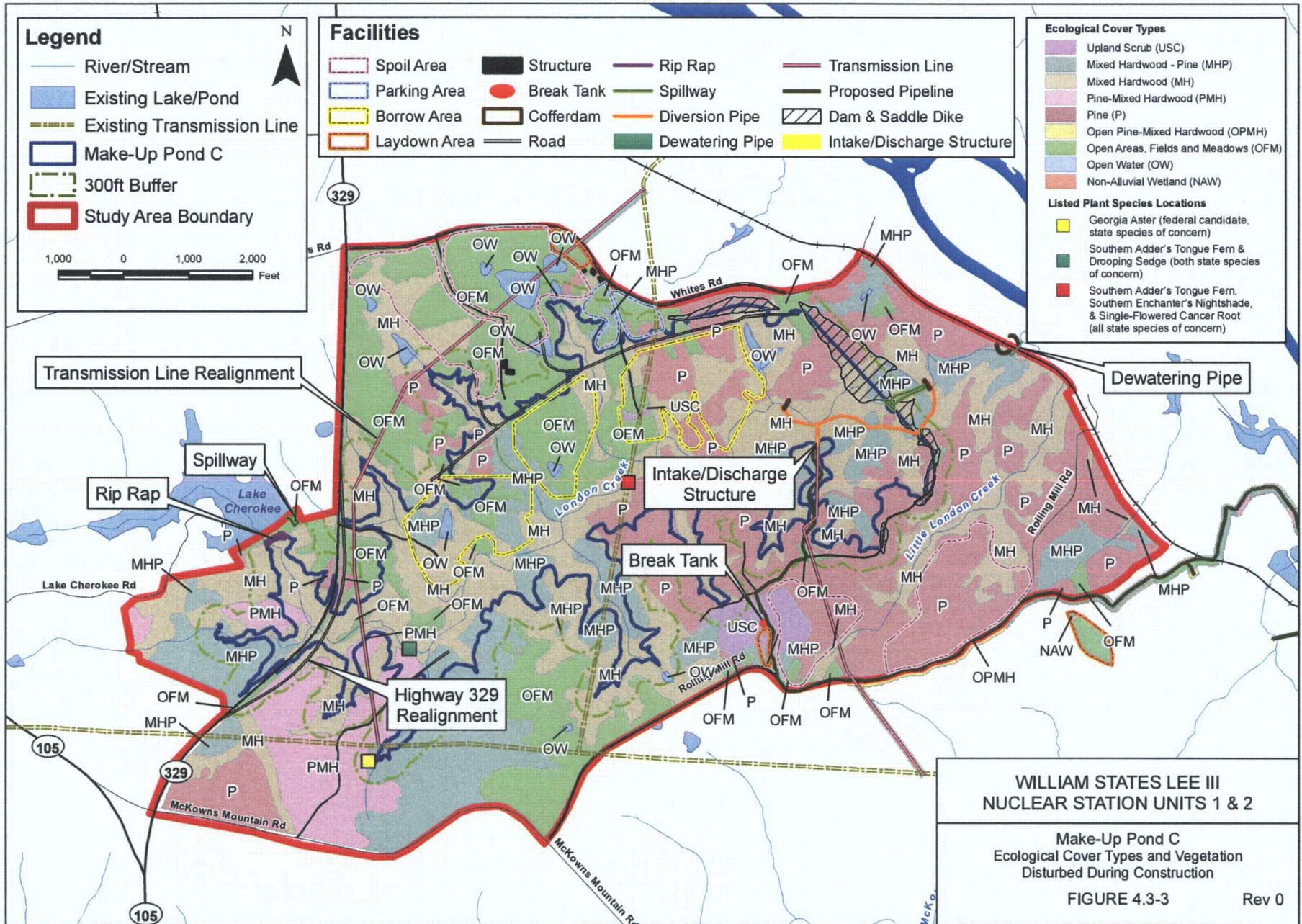
Revised Figure 4.1-2

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Attachment 157-03  
Revised Figure 4.3-3

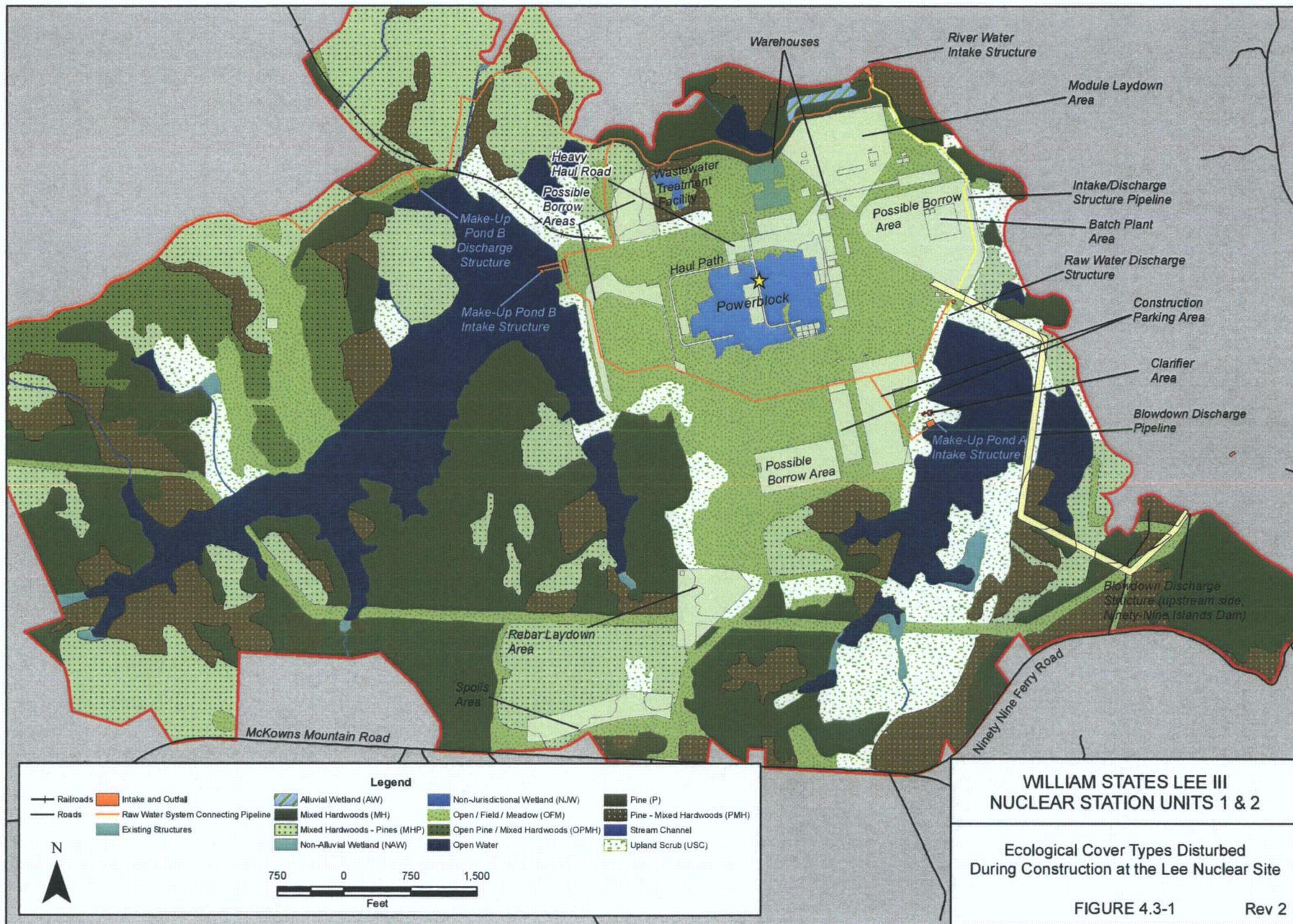
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Attachment 157-04

Figure 4.3-1

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Attachment 157-05

Revisions to COLA ER-Supplement, Chapter 4.3.1.2.2, Page 4-19

Revise COLA, Part 3, ER-Supplement Chapter 4, Subsection 4.3.1.2.2, as follows:

A re-route of a 44-kV transmission line crosses Make-Up Pond C (Figure 4.3-3). This 100-ft wide easement requires the clearing of an additional 3.1 acres outside of Make-Up Pond C study area. ~~Due to the small size of the area and the ability to avoid environmentally sensitive sites, impacts associated with the transmission line are considered SMALL.~~ A new 44-kV transmission line will begin at the intake/discharge structure for Make-Up Pond C and connect to the existing 44-kV transmission lines within the Lee Nuclear Site (Figure 4.3-3). This 5,700-ft long by 100-ft wide easement requires the clearing of vegetation within the Make-Up Pond C study area and the Lee Nuclear Site. Table 4.3-2 itemizes the impact quantities within and outside of the Make-Up Pond C study area for both transmission lines by cover type. Due to the small size of the area and the ability to avoid environmentally sensitive sites, impacts associated with the re-routed and new transmission lines are considered SMALL.

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Attachment 157-06

Revisions to COLA ER-Supplement, Chapter 4.3.1.2.3.1

1. Revise COLA, Part 3, ER-Supplement Chapter 4, Subsection 4.3.1.2.3.1, Paragraph 1, as follows:

Botanical surveys identified seven terrestrial habitat types: 1) Mixed Hardwood (MH), 2) Mixed Hardwood-Pine (MHP), 3) Open Areas, Fields and Meadows (OFM), 4) Open Pine-Mixed Hardwood (OPMH), 5) Pine (P), 6) Pine-Mixed Hardwood (PMH), and 7) Upland Scrub (USC), (Figure 2.4-6, Table 2.4-12). Descriptions of habitat types are included in Subsection 2.4.1.1. Figure 4.3-3 is an overlay of construction impacts on the ecological type map. A total of ~~1053.4~~ 1114.7 ac of habitat in various ecological types have temporary and long-term alteration and loss, resulting from impacts such as clearing and flooding (Table 4.3-2).

2. Revise COLA, Part 3, ER-Supplement Chapter 4, Subsection 4.3.1.2.3.1, Paragraphs 3-6, as follows:

The MH and MHP cover types are forests of higher quality habitat relative to other existing cover types; however, part of the MH cover type includes a cut-over mixed hardwood subtype which is present in several large blocks occurring throughout the Make-Up Pond C study area (Subsection 2.4.1.1.2). Cumulatively, the MH and MHP cover types account for 47.4 percent of the cover in the Make-Up Pond C area (Table 2.4-12). Analysis indicates that approximately ~~527.5~~ 530.1 ac, or ~~52.7~~ 53.0 percent of these cover types within the Make-Up Pond C study area are impacted during reservoir development (Table 4.3-2). Additionally, another 29.9 ac of these cover types are impacted by associated reservoir facilities outside of the Make-Up Pond C study area.

The MH cover type (Subsection 2.4.1.1.2) occupies 31.5 percent of the Make-Up Pond C study area. Approximately ~~308.5~~ 308.8 ac of this cover type are impounded and approximately ~~5.6~~ 6.9 ac are disturbed from reservoir infrastructure (i.e., dam, ~~and~~ saddle dike, ~~and~~ spillway footprints).

The MHP cover type (Subsection 2.4.1.1.3) occupies 15.9 percent of the Make-Up Pond C study area. Approximately 101.1 ac of this cover type are impounded and approximately ~~2.85~~ 3.5 ac are disturbed from reservoir infrastructure (i.e., dam, ~~and~~ saddle dike, ~~and~~ spillway footprints).

Other cover types include P, PMH, USC, and OFM. These cover types occupy over 1089.2 ac or 51.6 percent of Make-Up Pond C study area. Analysis indicates that approximately ~~509.7~~ 515.0 ac or ~~46.8~~ 47.3 percent of these cover types within the Make-Up Pond C study area are impacted during reservoir development (Table 4.3-2). Additionally, another 17.5 ac of these cover types are impacted by associated reservoir facilities outside of the Make-Up Pond C study area. Habitat quality in these cover types is relatively lower, due to intensive management from past silvicultural and agricultural activities. A small area of OPMH (Subsection 2.4.1.1.5), occurs near Rolling Mill Road (Figure 4.3-3). This cover type is disturbed from improvements to Rolling Mill Road. An additional 5.9 ac of OPMH are impacted by associated reservoir facilities outside of the Make-Up Pond C study area.

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Associated reservoir facilities also impact 0.1 ac of NJW and NAW within the Lee Nuclear Site. Table 4.3-2 provides quantities of impacts/disturbance to each of these areas, based on the nature of impact.

3. Revise COLA, Part 3, ER-Supplement, Chapter 4, Subsection 4.3.1.2.3.1, Paragraph 9, as follows:

The majority of the proposed pipeline that connects Make-Up Pond C to the existing Make-Up Pond B is installed along unimproved roads. Although the majority of the new ROW for this pipeline is placed within the footprint of existing roads, vegetation clearing occurs during construction and during routine line maintenance (Figure 4.3-3). In addition, an area located north of Rolling Mill Road, is cleared and graded for a break tank that is part of the water pipeline (Figure 4.3-3). The ROW for the water pipeline main is a 150 ft easement width. Impacted cover types in this ROW include OFM, MHP, USC, OPMH, PMH, MH, NJW, and P (Table 4.3-2). The break tank impacts an area within the USC cover type. Refer to Table 4.3-2 for quantities of all impacts by cover type. Much of the impacts to the cover types from roads are minimal because the alignment was designed to follow existing roads. However, the road width increases and requires additional grading activities and excavation of roadside ditches. Following construction, the water pipeline ROW contains a gravel service road and vegetated areas. The vegetated areas are seeded with native grasses that provide wildlife habitat or other species that do not require fertilizer or other amendments. Following initial seeding, the disturbed area re-vegetates naturally with native herbaceous and small shrub species. Regeneration of trees and large shrubs are prevented by mechanical mowing, cutting, trimming, or herbicide application on the permanent ROW for the water pipelines. Precluding large shrubs and trees also establishes a permanent corridor that is maintained for safety and maintenance of the water pipeline.

4. Revise COLA, Part 3, ER-Supplement, Chapter 4, Subsection 4.3.1.2.3.1, Paragraph 17, as follows:

In summary, a significant quantity of vegetation clearing is included in construction of Make-Up Pond C, but overall habitat quality of these areas, especially the P, PMH, USC, and OFM vegetation types, has been reduced due to previous land use. ~~In Make-Up Pond C study area~~ Approximately 46.8 48.3 percent of impacts resulting from Make-Up Pond C facilities occur to the P, PMH, USC, and OFM, and OPMH cover types; 52.7 50.2 percent of the impacts occur to the MH and MHP cover types. Other than isolated fragments, the MH and MHP habitat types are dominated by mid-successional species and are not considered climax community forests. Because these habitats are regionally common, the loss of existing vegetation will not destabilize these resources. ~~Nevertheless, the quantity of disturbance is significant.~~ Therefore, effects on vegetation are considered SMALL MODERATE on a site and vicinity scale, although LARGE on the London Creek watershed scale.

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI-158; ECOLOGY-TERRESTRIAL**

**NRC RAI:**

Provide an explanation on why only a small fraction of the transmission line Right-of-Way (ROW), and no other potentially suitable open area, field and meadow (OFM) habitat in the Pond C study area, was searched for Georgia aster.

**Duke Energy Response:**

The general search for Georgia aster was conducted at non-forested sites throughout the study area as mentioned below. A more intensive search for the rare aster, however, was concentrated in one area—an area of approximately 5-10 acres (not the 0.01 acre mentioned in the RAI supporting information)—along one utility right-of-way (ROW). The reason this area was searched intensively was that the companion flora, which was sampled from spring to autumn, indicated that the site was possibly rich in calcium and magnesium. Several uncommon species were seen in the ROW over the course of the 2008 sampling season. Eastern silver aster (*Aster concolor*) (known to occur in areas rich in calcium), smooth-leaved skullcap (*Scutellaria integrifolia*) (found on mesic clays), Piedmont trailing phlox (*Phlox nivalis var. hentzii*) (found on nutrient-rich, rocky clay sites), and spoon-shaped Barbara's buttons (*Marshallia obovata*) (known from rich, clay flats in the Piedmont) were all present here. The association of these species at this one site led researchers to believe that this site was unusual and might harbor Georgia aster.

Nearly all of the OFM cover type within the Make-Up Pond C cover type was searched throughout 2008, including all the utility ROW in the area. None of the ROW—except the one in which Georgia aster was found—harbored any botanical species that would indicate unusual soils. Furthermore, most of the OFM type in the Make-Up Pond C study area was open fescue dominated and grazed pasture, a cover type in which Georgia aster does not occur. However, even the disturbed edges of these pastures were checked for the aster in late 2008 during the monthly sampling of the Pond C site.

**References:**

None

**Associated Revisions to the Lee Nuclear Station Combined License Application:**

None

**Attachments:**

None

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 166, Ecology - Terrestrial**

**NRC RAI:**

Provide a re-assessment of the overall effects of Pond C on the terrestrial environment at the site, vicinity, and regional levels, including but not limited to inundation. In this assessment, define the site and vicinity and regional level, and explain the ecological relevance of each level.

**Duke Energy Response:**

Terrestrial ecological effects from constructing a new reservoir vary based on landscape perspective, including watershed (London Creek), site and vicinity (vicinity is discussed in ER Subsection 2.2.1.2 as a 6-mi. radius from the site), and regional level (discussed in ER Subsection 2.2.3 as a 50-mi. radius from the site). The majority of terrestrial ecosystems that are present and would be impacted are considered typical for Piedmont forest stands and similar habitats are common within the watershed, site and vicinity, and regional context.

The terrestrial ecological relevance at each spatial scale is based on the scale of impact and the availability of remaining similar habitat. Construction of Make-Up Pond C and its associated features is a LARGE impact at the London Creek watershed level, because approximately 1,100 ac of terrestrial habitat is replaced with a lentic environment, and a large proportion of the impacted cover types (Mixed Hardwood (MH), Mixed Hardwood-Pine (MHP), Open Areas, Fields and Meadows (OFM), Pine (P), Pine-Mixed Hardwood (PMH), and Upland Scrub (USC)) is rendered unavailable for the species that utilize those habitats in the London Creek watershed. Construction of Make-Up Pond C and its associated features is a SMALL impact at the site and vicinity perspective, because the impacted cover types make up a small proportion of the total habitat available to species which utilize those cover types. Finally, construction of Make-Up Pond C and its associated features is a SMALL impact at the regional level, because the impacted cover types make up a negligible proportion of the total habitat available to species which utilize those cover types.

Text in the ER Supplement is revised (Response to RAI 157 and Attachment 157-06; and Attachments: 166-01, 166-02, 166-03, and 166-04 of RAI Response 166) to show a SMALL impact at the site and vicinity level, and to clarify the discussion is not limited to the inundation area.

**Associated Revisions to the Lee Nuclear Station Combined License Application:**

1. ER Supplement, Subsection 4.3.1.2.3
2. ER Supplement, Table 4.6-1 (Sheet 4 of 7)
3. ER Supplement, Subsection 10.1.1

4. ER Supplement, Table 10.1-1 (Sheet 1 of 3, Sheet 2 of 3)

**Attachments:**

- Attachment 166-01: Markup of ER Supplement, Subsection 4.3.1.2.3, Make-Up Pond C  
Attachment 166-02: Markup of ER Supplement, Table 4.6-1 (Sheet 4 of 7)  
Attachment 166-03: Markup of ER Supplement, Subsection 10.1.1, Unavoidable Adverse  
Environmental Impacts of Construction  
Attachment 166-04: Markup of ER Supplement, Table 10.1-1 (Sheet 1 of 3, Sheet 2 of 3)

Attachment 166-01

Markup of ER Supplement, Subsection 4.3.1.2.3, Make-Up Pond C

**INSERT NEW SUBSECTION, 4.3.1.2.3, Make-Up Pond C , page 4-19**

Terrestrial ecological effects from constructing a new reservoir vary based on landscape perspective. Although construction of Make-Up Pond C and its associated features ~~clearing 600–700 ac for Make-Up Pond C~~ is a LARGE impact at the London Creek watershed level, terrestrial impacts resulting from this project are considered SMALL MODERATE at the site and vicinity perspective. ~~However,~~ These impacts are SMALL at the regional level, primarily because the majority of terrestrial ecosystems that are present are considered typical for Piedmont forest stands and similar habitats are common within the region. Impoundment causes the permanent loss of approximately 620 ac of terrestrial habitat that is replaced with a lentic environment. The loss of terrestrial habitat affects a variety of cover types, including: Mixed Hardwood (MH), Mixed Hardwood-Pine (MHP), Open Areas, Fields and Meadows (OFM), Pine (P), Pine-Mixed Hardwood (PMH), and Upland Scrub (USC) (Table 4.3-2).

Attachment 166-02

Markup of ER Supplement, Table 4.6-1 (Sheet 4 of 7)

TABLE 4.6-1 (Sheet 4 of 7)  
SUMMARY OF MEASURES AND CONTROLS TO LIMIT ADVERSE IMPACTS DURING CONSTRUCTION

Section Reference	Potential Environmental Impacts <sup>(a)(b)</sup>											Effect Description or Activity	Specific Measures and Controls		
	Noise	Erosion	Air Disturbances / Emissions	Traffic	Effluents and Wastes	Surface Water Impacts	Groundwater Impacts	Land Use Protection / Restoration	Water Use Protection / Restoration	Terrestrial Ecosystems Impacts	Aquatic Ecosystems Impacts			Socioeconomic Impacts	Radiation Exposure to Construction Workforce
4.3 Ecological Impacts (i.e., Effects on the Physical Environment)															
4.3.1 Terrestrial Ecosystems	S	S	S			S				S-M				<ol style="list-style-type: none"> <li>1. Loss of vegetation, <del>mostly some</del> with low wildlife habitat value and individual wildlife, to land clearing/ grading.</li> <li>2. Disturbance of small wetlands by river dredging and on-site excavation for Lee Site.</li> <li>3. <u>Temporary</u> displacement of wildlife by construction noise and fugitive dust.</li> <li>4. Loss of wildlife to oil or chemical spill.</li> <li>5. Bird collisions with cranes, buildings, and other high manmade structures.</li> <li>6. <u>Clearing and subsequent impoundment Construction of Make-Up Pond C and associated facilities will cause approximately 620 1,100 acres of impact to bottomland and upland habitat.</u></li> <li>7. <u>Land disturbing activities from construction of Make-Up Pond C and associated facilities (e.g., box culvert expansion, pipeline/distribution line)</u></li> <li>8. <u>Draining, filling, and inundating wetlands.</u></li> <li>9. <u>Impacts to species of special interest from clearing and flooding of Make-Up Pond C.</u></li> </ol>	<p>(1 and 6) Perform land clearing/grading and excavation in compliance with regulations, permits, and best management practices. Perform revegetation/landscaping with fertilization.</p> <p><u>(1 and 6) Habitats are regionally common, so loss of vegetation will not destabilize these resources.</u></p> <p>(2, 6, 8) Comply with Clean Water Act (CWA) Section 404 permits (Reference 2) and best management practices (erosion fabric or silt fences).</p> <p>(3) Water access roads and cleared areas to attenuate fugitive dust.</p> <p><u>(3) Planning for construction activities outside of avian breeding/nesting period would minimize mortality.</u></p> <p>(4) Locate equipment maintenance in an established yard away from wetlands and water.</p> <p>(5) Impact is very small and no reasonable mitigation measures have been identified.</p> <p><u>(7) Avoid environmentally sensitive areas as feasible.</u></p> <p><u>(8) Mitigation Action Plan will be developed for wetland/stream impacts.</u></p> <p><u>(9) Possible relocation of species of special interest.</u></p>

Attachment 166-03

Markup of ER Supplement, Subsection 10.1.1, Unavoidable Adverse Environmental Impacts of  
Construction

**Subsection 10.1.1, Unavoidable Adverse Environmental Impacts of Construction, page 10.1-1, 2nd paragraph:**

Unavoidable adverse impacts from construction of the new units at the Lee Nuclear Site and Make-Up Pond C include the following:

- Land use impacts – loss of previously undeveloped land, which includes a small amount of prime farmland, and potential impacts on historic and cultural resources (including relocation of a cemetery in Make-Up Pond C study area).
- Hydrological and water use impacts –temporary increase in turbidity and sediment deposition in the Broad River; permanent impoundment of London Creek for creation of Make-Up Pond C.
- Ecological impacts – loss of 270 ac from Lee Nuclear Site and loss of approximately 1,100 ~~620~~ ac from Make-Up Pond C and associated facilities of wildlife habitat and temporary degradation of aquatic habitat.
- Socioeconomic impacts – displacement of residences in/surrounding Make-Up Pond C study area, impacts to traffic (including re-alignment of SC 329 from Make-Up Pond C), increased debris to existing landfills, increase in non-recyclable refuse, a potential short-term housing shortage, and school overcrowding.

Attachment 166-04  
Markup of ER Supplement, Table 10.1-1 (Sheet 1 of 3, Sheet 2 of 3)

TABLE 10.1-1 (Sheet 1 of 3)  
CONSTRUCTION-RELATED UNAVOIDABLE ADVERSE IMPACTS

Impact Category	Adverse Impacts Based on Duke Energy's Proposal	Actions to Mitigate Impacts	Unavoidable Adverse Impacts
Land Use	Approximately 270 ac. of previously disturbed land is altered and converted during construction of the Lee Site, and approximately 1,100 <del>620</del> ac. are altered from construction of Make-Up Pond C and associated facilities, with the potential for erosion. A small amount of previously undeveloped, undisturbed land would not be available for other uses.	Limit ground disturbances to the smallest area necessary to construct and maintain the plant. Ground disturbing activities are performed in accordance with South Carolina Department of Health and Environmental Control (SCDHEC) stormwater permit requirements. Use erosion control and stabilization measurements to minimize impacts. Limit vegetation removal to area designated for construction activities. Minimize potential spills of hazardous wastes/materials through training and rigorous compliance with applicable regulations. Restrict soil stockpiling and reuse to designated areas on the Lee Nuclear Site.	270 ac. of previously disturbed habitat is temporarily or permanently altered by the construction of the Lee Nuclear Station. Two acres of prime farmland is occupied on a long-term basis by the nuclear power plant and associated infrastructure. <u>Approximately 1,100 <del>620</del> ac. of land are altered from construction impoundment of Make-Up Pond C and associated facilities. Approximately 60 ac. of prime farmland are isolated and not available for farmland.</u>
	Construction of transmission line in new corridors.	Site new corridors to avoid critical or sensitive habitat or species and avoid wetlands. Limit vegetation removal and construction to defined corridors during fall and winter to avoid nesting activities. Minimize potential impacts via avoidance and compliance with permitting requirements and best management practices.	Land use on some land is changed to open scrub or grassland beneath the two corridors.
	Potential to disturb <del>historic properties and</del> cultural resources due to ground disturbing activities.	Conduct cultural resource surveys, including subsurface sampling prior to initiating ground disturbing activities to identify buried historic, cultural, or paleontological resources. Consult with State Historic Preservation Office-if a cultural resource is discovered. Establish Duke Energy procedures to halt work if a potential historic, cultural, or paleontological resource is discovered.	Potential for destruction of unanticipated historic, cultural, or paleontological resources.

TABLE 10.1-1 (Sheet 2 of 3)  
 CONSTRUCTION-RELATED UNAVOIDABLE ADVERSE IMPACTS

Impact Category	Adverse Impacts Based on Duke Energy's Proposal	Actions to Mitigate Impacts	Unavoidable Adverse Impacts
Hydrological and water use	Dredging for the construction of the raw water intake is anticipated to result in temporary increases in turbidity in Broad River. <u>Construction of Make-Up Pond C will result in impacts to hydrology, water use, and water quality from impounding London Creek, draining/inundating wetlands, and fill/drawdown of Make-Up Pond C.</u>	Installation of rip rap, stemwalls, etc., to stabilize banks. Conduct construction and dredging activities in compliance with U.S. Army Corps of Engineers (USACE) requirements. <u>Implement Mitigation Action Plan developed as part of 404 permit process.</u>	Increased turbidity in Broad River is a temporary unavoidable adverse impact. <u>Alteration of hydrologic regime of London Creek and loss of wetlands from inundation of Make-Up Pond C.</u>
Ecological			
• Terrestrial	Habitat loss due to clearing and grading would kill or displace animals. The majority of the wildlife habitat is considered to be low quality. <u>Clearing and impoundment Construction of Make-Up Pond C and associated facilities will cause permanent loss of approximately 1,100 620 ac. of bottomland and upland habitat.</u>	Perform land clearing/grading and excavation in compliance with regulations, permits, and best management practices. Perform revegetation/landscaping with fertilization. <u>If possible, conduct construction activities to occur outside avian breeding/nesting periods. Implement Mitigation Action Plan developed as part of 404 permit process.</u>	Loss of 270 ac. of habitat for wildlife species <u>from Lee Nuclear Station.</u> <u>Loss of approximately 1,100 620 ac. of habitat from construction of Make-Up Pond C and associated facilities.</u>
• Aquatic	Temporarily degraded aquatic habitat due to construction near the Broad River or wetlands. <u>Site preparation and construction activities associated with Make-Up Pond C will impact aquatic habitat and species (e.g., benthic macroinvertebrates and fish).</u>	Install appropriate barriers and use best management practices to protect river prior to construction. <u>Implement Mitigation Action Plan developed as part of 404 permit process.</u>	Minor, temporary degradation of aquatic habitat during dredging and construction in and near Broad River.
Socioeconomic	Increase debris to existing landfills.	Establish procedures to ensure that all waste is disposed of according to applicable regulations such as the Resource Conservation and Recovery Act (RCRA).	Some land is dedicated to permitted landfills or licensed disposal facilities and is not available for other uses.
	Potential short-term housing shortage.	Temporarily house employees in hotels, rental properties, and park facilities.	In the short-term, there could be a housing shortage.
	Potential short-term school overcrowding.	Increase revenues to offset additional school resources, police, and fire protection.	In the short-term, there could be school crowding.
	<u>Displacement of residents from Construction of Make-Up Pond C.</u>	<u>Compensation for property; allocation of rent-free period (upon closing) to identify relocation property</u>	<u>Adjacent property owners will be displaced from current residence.</u>

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 177, Ecology - Terrestrial**

**NRC RAI:**

Provide the report describing the results of the fall 2008 field surveys for Schweinitz's sunflower, Georgia aster, smooth sunflower, and smooth coneflower in open, disturbed, and non-forested portions of the Lee site.

**Duke Energy Response:**

The requested report is provided as Attachment 177-1

**Associated Revision to the Lee Nuclear Station Combined License Application:**

None

**Attachment:**

Attachment 177-1 Gaddy, L.L., 2008, Report on Autumn Endangered Species Inventories:  
Lee Nuclear Site, Cherokee County, South Carolina

**Attachment 177-1**

**Gaddy, L.L., 2008, Report on Autumn Endangered Species Inventories: Lee Nuclear Site,  
Cherokee County, South Carolina**

## **REPORT ON AUTUMN ENDANGERED SPECIES INVENTORIES:**

### **LEE NUCLEAR SITE,**

### **CHEROKEE COUNTY, SOUTH CAROLINA**

#### **Introduction**

After a 19 September 2008 conference call between representatives of the Nuclear Regulatory Commission (NRC) and Duke Energy (Duke), it was agreed that additional autumn inventories would be carried out at the proposed Lee Nuclear Site for the possible presence of four plant species, all of which flower in the fall and primarily occupy non-forested habitats. The NRC was especially interested in whether these species or habitat for any of these species potentially occurred within the construction footprint of the Lee Site. The plants in question are: the federally-listed smooth coneflower (*Echinacea laevigata*), the federally-listed Schweinitz's sunflower (*Helianthus schweinitzii*), the federal candidate species Georgia aster (*Aster georgianus*), and the state-listed smooth sunflower (*Helianthus laevigatus*).

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

#### **Methodology**

First, known sites for Georgia aster (*Aster georgianus*) and smooth sunflower in Cherokee and York Counties near the Lee Site were visited on 10 October 2008 to better understand the habitats for these species and establish a reliable search image for the Lee Site inventory. Fieldwork at the Lee Site was carried out on 15 October 2008. All the roads in the construction footprint of the site were driven looking for potentially habitat for the above-listed species. Where habitat or marginal habitat was seen, walking surveys for the plants were conducted. Additional fieldwork was conducted on power line rights-of-way on and adjacent to the Lee Site and on McKown's Mountain [for smooth sunflower (*Helianthus laevigatus*), which is known to occur on Kings Mountain Belt rocks].

## Results

None of the four plant species included in the autumn search was found at the Lee Site. Furthermore, no suitable habitat for any of the four species was found in the construction footprint in the central portion of the site. A species list of the plant species encountered in the non-forested areas of the Lee Site during this inventory is included as Table 1. Each of the species involved in the search is discussed below:

**Smooth Coneflower (*Echinacea laevigata*).** Smooth coneflower is known from calcium- and magnesium-rich Piedmont “prairies” on Mecklenberg and Iredell soils in the Piedmont of South Carolina. Such sites are usually easy to spot in the field due to indicator companion species such as rattlesnake master (*Eryngium yuccifolium*), feverweed (*Parthenium* sp.), and redbud (*Cercis canadensis*) that grow with the coneflower. None of these plants were observed at the Lee Site during the October fieldwork. Furthermore, according to recent (2004) soil survey data from the area ([www.websoilsurvey.nrcs.usda.gov](http://www.websoilsurvey.nrcs.usda.gov)), the only soils present on the site were Tatum soils, with Tatum very fine sandy loam the dominant soil type.

**Schweinitz’s Sunflower (*Helianthus schweinitzii*).** Schweinitz’s sunflower is a federally-listed species known primarily to occur on Iredell soils in York County, South Carolina. No Iredell or related soils (Mecklenberg) or marginal habitat for this sunflower was found at the Lee Site construction area. In fact, no sunflowers (*Helianthus* spp.) at all were seen in this area during my October visit.

**Georgia Aster (*Aster georgianus*).** Georgia aster is listed as “of federal concern” by the Fish and Wildlife Service. It is historically known from east of the Lee Site in York County. During my October fieldwork, I found three new populations of Georgia aster in Cherokee County within a ten-mile radius of the Lee Site. All three populations were growing on roadsides or power line rights-of-way on exposed, dry, silty clay loam (probably Nason silty clay loam). This habitat does not exist within the construction footprint of the Lee Site and no Georgia asters were found there. I also searched power line rights-of-way on the Lee Site for this plant, but I found only the common frost aster (*Aster pilosus*) and the Piedmont aster (*Aster patens*).

**Smooth Sunflower (*Helianthus laevigatus*).** Smooth sunflower is a state-listed species listed as “of concern” by South Carolina Department of Natural Resources. There is an historical population of the plant several miles northwest of the Lee Site. On 10 October, I visited the historical site and found that the area has recently been cleared. I, however, found a previously-unknown population in dry, exposed soil about 0.5 mile east of the historic population. The soil type here appeared to be Nason silty clay loam. My search of the Lee Site construction area revealed that there were no species of sunflower (*Helianthus* spp.) growing there. I also search several power line rights-of-way and open areas on the top of McKown’s Mountain for the smooth sunflower, but found no plants.

**Table 1. VASCULAR PLANTS OF THE CONSTRUCTION FOOTPRINT, POWER LINE RIGHTS-OF-WAY, AND OTHER NON-FORESTED AREAS: LEE NUCLEAR SITE— AUTUMN 2008.**

**LEGEND**

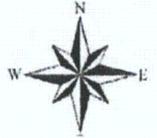
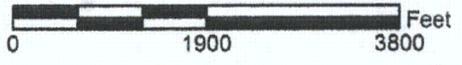
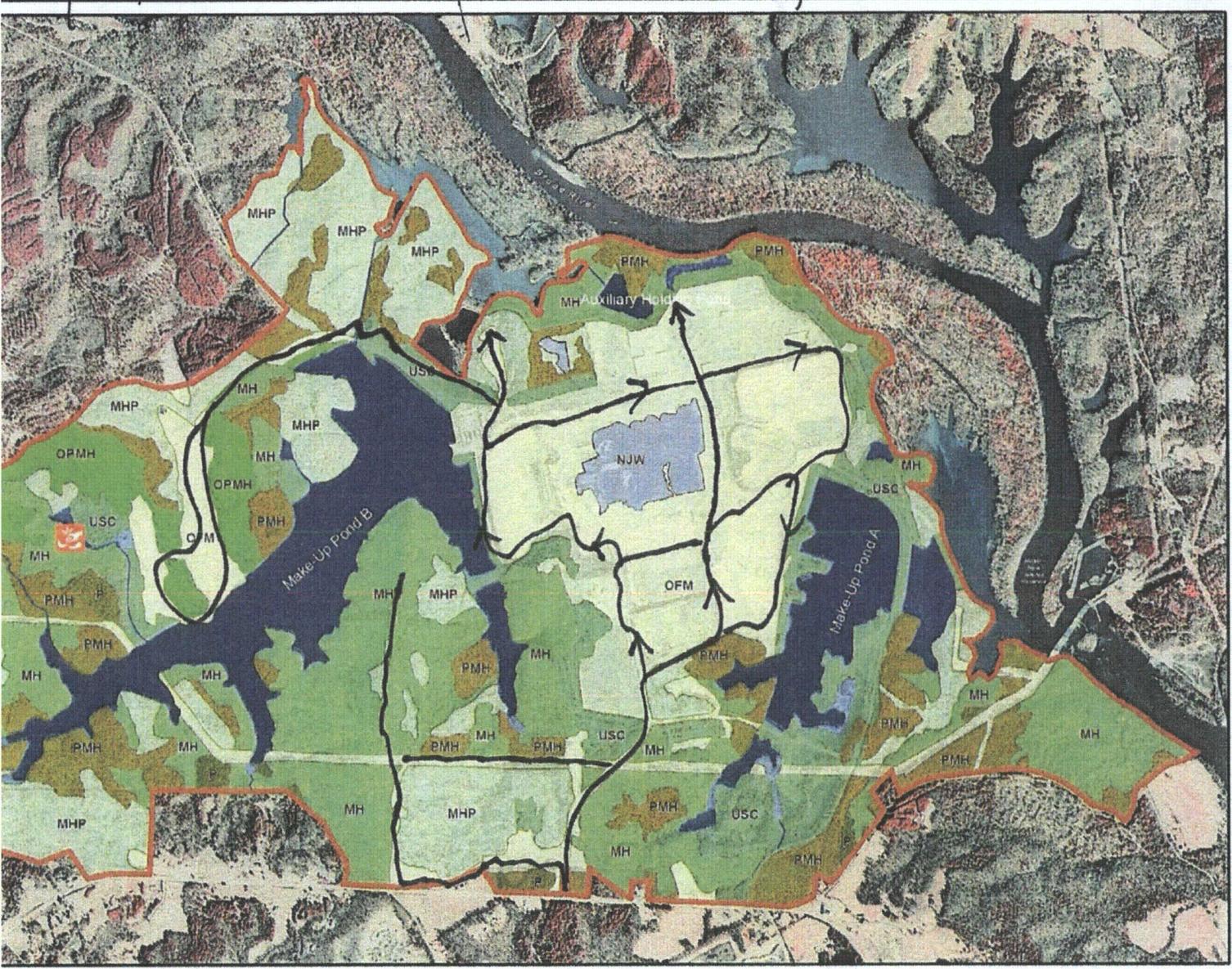
*Exotic, introduced, or invasive species in italics.*

Taxonomy based on Radford et al. (1968) unless otherwise noted.

**Dominant species in bold type.**

Acer rubrum (red maple)  
*Albizia julibrisin (mimosa)*  
Alnus serrulata (tag alder)  
*Ambrosia artemisiifolia (common ragweed)*  
**Andropogon virginicus (broomsedge)**  
Aralia spinosa (spikenard)  
Asplenium platyneuron (ebony spleenwort)  
Aster patens (Piedmont aster)  
Aster pilosus (frost aster)  
Baccharis halimifolia (false willow)  
Bidens bipinnafida (Spanish needles)  
Cacalia atriplicifolia (Indian plantain)  
Campsis radicans (trumpet creeper)  
Carex sp. (sedge)  
Cercis candensis (redbud)  
*Chrysanthemum leucathemum (ox-eye daisy)*  
Chrysopsis graminifolia (grass-leaved goldenaster)  
Chrysopsis mariana (Maryland goldenaster)  
Cirsium sp. (thistle)  
**Conyza canadensis (horseweed)**  
*Dactylon sp. (orchard grass)*  
Danthonia sp. (oat grass)  
Daucus carota (Queen Anne's lace)  
Diodia virginiana (buttonweed)  
Diospyros virginiana (persimmon)  
Duchesnea indica (Indian strawberry)  
**Eragrostis spectabilis (purple love grass)**  
Erectites hieracifolia (fireweed)  
**Erianthus contortus (Piedmont plumegrass)**  
**Eupatorium capillifolium (dog fennel)**  
Eupatorium serotinum (fall thoroughwort)  
*Festuca sp. (fescue)*  
Gnaphalium sp. (rabbit tobacco)  
**Helenium amarum (bitterweed)**  
**Heterotheca subaxillaris (camphorweed)**  
Juniperus virginiana (eastern red cedar)  
Leptoloma sp. (fall witch grass)  
*Lespedeza bicolor (bicolor lespedeza)*  
*Lespedeza cuneata (sericea)*  
*Ligustrum sinense (Chinese privet)*  
Liquidambar styraciflua (sweet gum)  
Liriodendron tulipifera (tulip poplar)  
**Lonicera japonica (Japanese honeysuckle)**

**Panicum dichotomum** (fall panicum)  
*Panicum ramosum* (browntop millet)  
**Pinus taeda** (loblolly)  
**Pinus virginiana** (Virginia pine)  
*Plantago rugelii* (round-leaved plantain)  
Platanus occidentalis (sycamore)  
**Polygonum lapathifolium** (curly-top knotweed)  
Polygonum punctatum (spotted smartweed)  
**Populus deltoides** (eastern cottonwood)  
**Prunus serotina** (black cherry)  
Rhus copallina (winged sumac)  
Rhus glabra (smooth sumac)  
*Rosa multiflora* (multiflora rose)  
**Rubus canadensis** (Canada blackberry)  
Salix nigra (black willow)  
Sambucus canadensis (elderberry)  
Sassafras albidum (sassafras)  
Schizachyrium scoparium (little bluestem)  
Senecio aureus (golden ragwort)  
**Setaria glauca** (foxtail grass)  
**Solidago canadensis** (Canada goldenrod)  
Solidago odora (fragrant goldenrod)  
*Sorghastrum halepense* (Johnson grass)  
**Tridens flavus** (purple top)  
*Verbena brasiliensis* (Brazilian verbena)  
Verbesina occidentalis (chaffseed)



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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI-181; ECOLOGY-TERRESTRIAL**

**NRC RAI- 181:** Provide information on avian surveys that were conducted along the realignment section of the railroad spur at the Reddy Ice Plant. If no surveys were conducted, explain why, given half of the realigned railroad crosses forested land.

**Duke Energy Response:**

The realignment section of the railroad (the area around the Reedy Creek Ice Plant (RCIP) and the Cherokee County Cogeneration Partners (CCCP) site) were not part of the avian surveys for several reasons:

1. The industrial nature of the RCIP/ CCCP sites with large buildings and equipment coupled with significant vehicular traffic and noise associated with the businesses, provides little habitat or supportive conditions for birds other than English sparrows, European starlings, and pigeons (all introduced species). Additionally, the entrance road is asphalt, as is the RCIP/CCCP parking lot, and the majority of the rest of the site houses large pieces of energy generation equipment. The grounds on both business sites are devoid of trees, grasses and other vegetation. Consequently there was no reason to conduct avian surveys, for these areas where there was a paucity of habitat.
2. There are two distinct sections of the railroad spur at the Reedy Creek site:
  - a. The eastern section of the proposed railroad spur, the section coming into the RCIP/CCCP off Peoples Creek Road (SR 11-296) to the gate leading into the RCIP and the CCCP, will use the existing entrance road that leads to these facilities. This entrance road, which was built on top of the old Cherokee Nuclear Station railroad bed, was recently purchased by Duke Energy and the road will be converted back to a railroad bed. Because this entrance road is still intact, complete with the cleared areas on both sides, an insignificant number of trees would be cut/trimmed in the re-installation of the railroad ballast, ties, and track. Since little avian habitat would be permanently disturbed in these railroad building activities no avian surveys were necessary. A new RCIP/CCCP entrance road will be constructed on the south side and parallel to the old (which will now become the railroad corridor) and will impact some of the existing trees. Because other tree-covered areas adjacent to the railroad corridor from the RCIP/CCCP site to the Lee Nuclear Station were already sampled, no additional avian surveys were deemed necessary.

- b. The western section of the proposed railroad spur, the section from the gate leading into the RCIP/CCCP site proper and going around (to the north) the CCCP site and then reconnecting to the existing Southern Railroad line, would be created by filling a section of bottomland ravine. This ravine is largely in the right-of way (ROW) of an existing Duke Energy transmission line and as such is managed under Duke's vegetative management program. The vegetation in this area is dominated by honey locust (*Gleditsia triacanthos*), boxelder (*Acer negundo*), and sourwood (*Oxydendrum arboreum*) as well as early successional plants like Queen Anne's lace (*Daucus carota*), poke (*Phytolacca americana*), mullein (*Verbascum thapsus*), and blackberry (*Rubus cuneifolius*). Because of the significant physical disturbance activities on much of this land that have taken place in the past under non-Duke ownership and the fact that the majority of it is in the Duke Energy ROW where large trees/shrubs are cut/sprayed on an every 5-year rotation, this area was not judged as avian habitat different than any of those sampled elsewhere along the corridor.

**References:**

None

**Associated Revisions to the Lee Nuclear Station Combined License Application:**

None

**Attachments:**

None

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 192, Site Layout and Plant Description**

**NRC RAI:**

Provide an assessment of the potential impacts from construction of the intake structure and intake pipeline on the alluvial wetland located upstream from the proposed intake location, based on the most current intake and pipeline footprint.

**Duke Energy Response:**

A combined response to ER RAI 57 and ER RAI 69 was submitted to NRC on October 28, 2008 (Duke Letter WLG2008.10-13, ML083080273) to discuss the potential for impacts to the alluvial wetland from the river intake structure and temporary cofferdam. Since that response, four refill pumps have been added to the intake structure. Although the addition of the refill pumps has enlarged the intake structure and associated temporary cofferdam, the length has been added to the downriver side of the intake. Therefore, the current design for the intake structure has the cofferdam extending no further into the river than in the design that the response for ER RAI 57 and ER RAI 69 was based upon, and the response for ER RAI 57 and ER RAI 69 still applies.

The attached figure (Attachment 192-01) depicts the proposed cofferdam and river intake structure in relation to the referenced wetland. The wetland is approximately 132 feet from the cofferdam. As shown on the figure, the subject wetland does not have a direct connection to the Broad River/Ninety-Nine Islands Reservoir. This wetland is separated from the river by a natural berm with a minimum three foot elevation difference between the top of the berm and the river. Therefore, since a natural berm already separates the wetland from the river, sedimentation is not expected to affect the wetland. A discussion of effects to river currents and associated potential for erosion and scour to the river bed and bank during intake construction is provided in Section 4.2.2.1 of the ER. The redesign of the cofferdam had no effect on this discussion since it has not changed the river's flow velocity from the original design.

As stated in Section 4.2.2.1 of the ER, soil and partially weathered rock excavated during river water intake construction will be stockpiled in the onsite spoils area in the south portion of the Lee Nuclear Site near McKowns Mountain Road. Excavation for the intake structure will not affect the alluvial wetland adjacent to the Broad River/Ninety-Nine Islands Reservoir.

The raw water pipeline has been routed so that it is adjacent to an existing road in the vicinity of this wetland. There will be a 50 foot buffer between the trenches and the wetland. Any excavated material that is anticipated to be backfilled within two days of excavation will be temporarily stored on the south side of the trench (farthest from wetlands) until it is backfilled. Any spoils not anticipated to be used within two days will be brought to the spoils area at the south end of the site near McKowns Mountain Road. Therefore, the pipeline construction will not impact the alluvial wetland.

Construction best management practices (BMPs) will protect the alluvial wetland from potential sedimentation from construction activities. BMPs are discussed in Sections 4.2.2.9 and 4.2.4.4 of the ER. Specific BMPs are discussed further in the *Duke Energy Best Management Practices for Stormwater Management and Erosion Control Policy and Procedures Manual* (1995) and the *South Carolina Stormwater Management and Sediment Control Handbook for Land Disturbance Activities* submitted on November 24, 2008 (Duke Letter WLG-2008.11-24, ML 083330445) with the combined response to ER RAIs 79, 86, and 95.

**Associated Revision to the Lee Nuclear Station Combined License Application:**

None

**Attachment:**

Attachment 192-01, River Water Intake Structure and Wetland Proximities (Approximate)

**Attachment 192-01**

**River Water Intake Structure and Wetland Proximities (Approximate)**

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 195, Land Use**

**NRC RAI:**

Provide information on whether all properties within the Pond C site have been acquired.

**Duke Energy Response:**

Duke Energy currently owns 1896 ac. of the 1956 ac. depicted as the Make-Up Pond C study area in the ER Supplement.

**Associated Revision to the Lee Nuclear Station Combined License Application:**

None

**Attachment:**

None

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 198, Non-Radiological - Noise**

**NRC RAI:**

Provide a list of people, buildings, roads, and recreational facilities near Pond C that are vulnerable to noise impacts, and provide distances from the proposed construction activity to the nearest sensitive areas defined.

**Duke Energy Response:**

Proposed text revisions to the ER Supplement are provided in Attachment 198-01, and provide a list of the nearest noise sensitive sites and their proximity to, or approximate distance from, the Make-Up Pond C study area.

**Associated Revision to the Lee Nuclear Station Combined License Application:**

ER Supplement, Subsection 2.5.5

**Attachment:**

Attachment 198-01 Markup of ER Supplement, Subsection 2.5.5, Noise

**Attachment 198-01**  
**Markup of ER Supplement, Subsection 2.5.5, Noise**

COLA Part 3, ER Supplement, Subsection 2.5.5 is revised as follows:

Similar to the Lee Nuclear Site, developed land use in the vicinity of the proposed Make-Up Pond C is characterized as rural with some low density residential. Ambient noise sources are primarily natural such as wildlife and wind through foliage, which are noted as sources in the ambient noise survey conducted for the Lee Nuclear Site in June 2006. Considering the similarity in land use, ambient noise monitoring performed as part of the ambient noise survey for the Lee Nuclear Site also describes the existing noise environment in the vicinity of the proposed Make-Up Pond C.

The closest known noise sensitive sites to the Make-Up Pond C study area are:

- Mt. Ararat Baptist Church, approximately 500 ft south of the study area on McKowns Mountain Road
- Draytonville Elementary School, approximately 0.4 mile south of the study area on SH 329
- Scattered, low density residential development along SH 329 abutting the western study area boundary for Make-Up Pond C
- Scattered, low density residential development along Whites Road which forms the northern study area boundary for Make-Up Pond C
- Isolated residences along McKowns Mountain Road which forms the southern study area boundary for Make-Up Pond C
- Scattered, low density residential development along Rolling Mill Road and Deer Ridge Road abutting the southern study area boundary for Make-Up Pond C

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 202, Land Use**

**NRC RAI:**

Provide information with regard to taxes, including what the current level of taxes is for the property/properties and how converting the land to a pond for an industrial site would impact taxes from their current level. Indicate whether Pond C land will be included in the fee-in-lieu agreement for the Lee Nuclear Station.

**Duke Energy Response:**

Current (2009) taxes on the Make-Up Pond C land are \$68,869.62. Cherokee County will reassess the property as part of the Lee Nuclear Site. The reassessment has not occurred and therefore what the reassessed value will be is unknown.

At this time Duke Energy has not established whether the additional property for Make-Up Pond C will be included in the fee-in-lieu agreement for Lee Nuclear Station.

**Associated Revision to the Lee Nuclear Station Combined License Application:**

None

**Attachment:**

None

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

**RAI Letter Dated: June 22, 2010**

**Reference NRC RAI Number: ER RAI 203, Socioeconomics**

**NRC RAI:**

Provide information on any possible recreation currently taking place on the proposed Pond C property. Also include any possible subsistence-based activities.

**Duke Energy Response:**

All the property that comprises the Pond C area was previously privately owned. There was no public access for recreational purposes. Duke is not aware of any recreational or subsistence-based activities currently taking place in the Make-Up Pond C area.

**Associated Revision to the Lee Nuclear Station Combined License Application:**

None

**Attachment:**

None