## Lopas, Sarah

**From:** Lopas, Sarah
**Sent:** Friday, June 11, 2010 9:24 AM
**To:** 'Bowling, Theodore J'
**Cc:** MacLellan, Jay; 'Chamness, Michele A'
**Subject:** Draft Pond C RAIs
**Attachments:** Pond C RAIs Draft to Duke 061110.pdf

Ted,

Please see the attached draft RAIs for your review. We will discuss clarifications to these RAIs during our call on Tuesday, June 15, 2pm. After reviewing them, it would be helpful if you could send a list of RAIs you have questions on – and we'll be sure we have the right people on the call.

Thanks!
-Sarah

*Sarah L. Lopas*
Environmental Project Manager
Office of New Reactors
U.S. Nuclear Regulatory Commission
P (301) 415-1147
F (301) 415-5399

***Please consider the environment before printing this email.***

**Requests for Additional Information (RAIs)**
**William States Lee III Nuclear Station, Units 1 and 2**
**Combined Operating Licenses Application**

| Accidents | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 120 | ESRP 7.1<br>10 CFR 50.34 | Provide information on which revision to the AP1000 design control document (DCD) is being used in Section 7.1 of the environmental report (ER) to analyze design basis accidents (DBAs). Update any text or tables that may be inconsistent with the referenced DCD. | In Section 7.1.1 of the ER Revision (Rev.) 1, Rev. 16 of the AP1000 DCD is identified as the basis for DBAs. However, in Table 7.1-11 (Atmospheric Dispersion Factors), a reference to Rev. 17 of the DCD has been added. This change is not indicated in the "List of Tables" at the beginning of the section nor is it discussed anywhere in Section 7.1. |
| 121 | ESRP 7.1<br>10 CFR 50.34<br>10 CFR 52.79(1)(vi)(A) | Provide the basis for the changes in ER Rev. 1, Table 7.1-9 (Activity Releases for Loss-of-Coolant Accident Resulting from a Spectrum of Postulated Piping Breaks within the Reactor Coolant Pressure Boundary), and include the two-hour period isotopic activities yielding the maximum dose. | In Table 7.1-9 of ER Rev. 1, the activities for the loss of coolant accident (LOCA) have changed. This change is not indicated in the "List of Tables" at the beginning of the section nor is it discussed in Section 7.1. In addition, the two-hour period isotopic activities are not included for the LOCA accident. |
| 122 | ESRP 7.3<br>10 CFR 51.50 (c) | Provide justification for the application of the NRC staff conclusions for DCD Rev. 15 presented in NUREG-1793 to the DCD referenced in the ER. | The conclusions described in Section 7.3.2 of the ER relate specifically to Rev. 15 of the AP1000 design, but the COL application references a different revision of the design. What is the basis for assuming that the conclusions are appropriate? It is unclear whether source terms or core-damage frequencies have changed. |

DRAFT

| Alternatives | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 123 | ESRP 9.2.3<br>10 CFR 51.45(b)(3) | Provide additional details for the Alternative Energy analysis at the Lee Nuclear Station regarding consumptive make-up water requirements for a combined cycle natural gas-fired power plant. Specifically, provide analysis to describe whether Pond C would be required for this alternative. | Viable energy alternatives must evaluate the impact(s) associated with construction and operation. A combined-cycle natural gas-fired power plant would require significantly less make-up water than a nuclear plant since 60 percent of the power output at a natural gas plant comes from combustion turbines and 40 percent from the steam turbine (assuming a standard 2X1 7FA combined cycle plant). Given the difference in make-up water needs for a natural gas-fired power plant provide a discussion to whether Pond C would be required for this alternative. |
| 124 | ESRP 9.3<br>10 CFR 51.45(b)(3) | Section 9.3.2.2 describes the volumes of the supplemental water reservoirs that would be required at each alternative site and the proposed site. Describe how these volumes were were calculated. Clarify whether associated construction that would attend the filling and use of such reservoirs (pipelines, transmission lines, dams, borrow and spoil areas, etc.) are included in the reservoir size estimates.<br>Also, provide clarification on the total storage capacity at the Lee site given as 11,000 ac-ft in Section 9.3.2.2 of the Supplement to the ER, and 22,000 ac-ft in Section 2.3.1.2.3.1. | The potential cumulative impacts to habitats and important species at the Lee Nuclear Station and the alternative sites would be directly related to the size of the reservoirs required for supplemental water. When river flow and needed storage capacities were modified to reflect the 2007-2008 drought, changes in average river flows appear similar at all evaluated sites, but the changes in storage volumes are not. Specifically, the required storage capacity at the Lee Nuclear Station changes only a small amount (from 7300 to 11,000 ac-ft), while the required changes at the other sites are much greater (4800 to 80,000 ac-ft for Keowee; 8,600 to 34,000 ac-ft for Perkins; and 4800 to 57,000 ac-ft for Middleton Shoals). The volumes of Ponds B (3,955 ac-ft) and C total ~15,000 ac-ft. Two-and-a-third to eight times more water would be required at the alternative sites than at the Lee Nuclear Station under low-flow conditions. No supporting documentation was provided that clearly demonstrated the necessity for these storage reservoirs at the alternative sites. In addition, no supporting documentation was provided that clearly demonstrated why reservoirs of the sizes specified would be needed at each alternative site. |

DRAFT

| | | | |
|---|---|---|---|
| 125 | ESRP 9.3<br>10 CFR 51.71(b) | Provide an analysis, which includes reconnaissance-level data, to describe the impacts to each resource area from building a reservoir at the alternative sites. For example, elaborate on the existing aquatic habitat types that would be impounded at each site, and what important aquatic species are likely to be found at each site that would be affected by the impoundment.<br><br>Provide justification for any revisions to impact levels for the alternative site, and describe how the analysis and conclusions for each resource area at the alternative sites are altered by the need for additional water resources. Describe the new impacts that contributed to the revised impact level. Provide an analysis and discussion of the weightings and rankings for assigning the revised impacts. | In the Supplemental ER, a reservoir was added to each of the alternative sites. However, for multiple resource areas, reconnaissance level information regarding the additional impacts that would occur due to the additional reservoir was not provided. In addition, the alternative sites selection analysis revises impacts for the Lee and alternative sites; however, justifications (weighting/ranking) for assigning the impacts were not provided. |
| 126 | ESRP 5.3.3.2<br>10 CFR 51.45(b)(3) | For each alternative site, describe where the supplemental water reservoirs would be placed on the landscape and explain how the impacted stream lengths were derived. | The comparison of potential impacts to habitats between Lee and the alternative sites relates to the amount of riparian habitat that would be inundated or otherwise permanently impacted. The amount of riparian habitat that would be inundated relates directly to the lengths of stream corridors that would be inundated. These stream lengths are drastically different at the Lee, Keowee, Perkins, and Middleton Shoals sites. About 28 mi of stream habitat would be impacted at the Keowee site, 24 mi at the Perkins site, and 40 mi at the Middleton Shoals site, and approximately 2 mi of stream habitat would be impacted at the Lee Nuclear Station (Section 9.3.2.3 of the Supplement to the ER). Provide supporting documentation, such as maps, that would help explain how impacted stream lengths were derived. |

DRAFT

| | | | |
|---|---|---|---|
| 127 | ESRP 9.3.3.2<br>10 CFR 51.45(b)(3) | Provide ecological analyses for construction of the storage reservoirs at Lee Nuclear Station and the alternative sites that are similar to the analyses in section 9.3.2.3 regarding the location of construction of the reactor facilities. Include associated construction that would attend the filling and use of such reservoirs (pipelines, transmission lines, dams, borrow and spoil areas, etc.). | The comparison of potential impacts to habitats and important species between the Lee Nuclear Station and the alternative sites relates directly to the locations of reservoirs required for supplemental water and the habitats and species of concern in these areas. Section 9.3.2.3 discusses habitat (including wetlands), species of concern, and stream impacts within a circle covering 450 ac at the Lee Nuclear Station and each of the alternative sites. This corresponds to the estimated size of a site for nuclear facilities, but does not include storage reservoirs. |
| 128 | ESRP 9.4.2<br>10 CFR 51.45(b)(3) | Provide details of the quantitative analyses used to evaluate options for cooling of the proposed Lee Nuclear Plant during periods of low river flow. Include alternatives considered for cooling water sources and cooling system technologies. Include in the metrics of the analyses foregone net power due to parasitic energy losses, reduced generation efficiency, and frequency of outages due to loss of water supply. | ER Rev. 1 did not conclude that an additional cooling water source was needed for operation of the Lee Nuclear Station. However, in consideration of Broad River flow data during the 2007-2008 drought, the Supplement to the ER now supports construction of Pond C. Additional quantitative data used in the evaluation of plant cooling requirements during drought conditions is needed to evaluate alternatives, in comparison with the proposed system, and to identify any systems that would be environmentally preferable to the proposed system. |
| 129 | ESRP 4.7<br>ESRP 5.11<br>ESRP 9.3<br>Supplemen-tal Guidance to ESRP Sections 4.7, 5.11, and 9.3<br>10 CFR 51.45(b)(3) | For each alternative site, provide an update on other present and reasonably foreseeable Federal, non-Federal, and private actions that could have meaningful overlapping environmental impacts with construction, preconstruction, and operations of the nuclear plant and associated transmission lines and other associated facilities. Specifically, provide the name, proposed construction dates, overview of the project, and the size and potential impacts of the project (if known) for reasonably foreseeable projects that would occur within 50 miles of each alternative site, or within proposed transmission line corridors. | The ER and the Supplement to the ER do not identify other new or proposed activities that would occur in the potential impact area for each alternative site, and that may contribute to a cumulative impact on environmental resources, as discussed in the recently published supplemental guidance to the ESRP (April 8, 2010, ML100990271). Additional planned or proposed projects with potential overlapping effects with the proposed project at each alternative site could influence the overall cumulative environmental impacts, and could influence whether or not an alternative site is environmentally preferable to the proposed site. |

DRAFT

| RAI No. | USACE Regulation /ER Section | RAI | Supporting Information |
|---|---|---|---|
| 130 | 33 CFR Section 320.4 Supplemen-tal ER Chapter 9 | The U.S Army Corps of Engineers (USACE) evaluation of any project alternative must include the published public interest factors of: conservation, economics, aesthetics, general environmental concerns, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. Please include discussion of each of these factors for each reasonable/practicable alternative. | Required to determine whether the proposed project would be contrary to the public interest as part of the public interest review. |
| 131 | 40 CFR Section 230.10 Supplemen-tal ER Section 9.3 | The USACE defines the "single and complete project" to include the site of the nuclear facility as well as all other associated facilities, including Pond C and any transmission lines to be constructed as part of the proposed work. Provide a summary of stream length and wetland areas present in all these areas combined, including estimated impacts for the proposed site and each alternative site evaluated. | Required for determination whether potential project alternatives would be in compliance with the 404(b)(1) guidelines and for comparison of alternatives under NEPA. |

DRAFT

| | | | |
|---|---|---|---|
| 132 | 40 CFR Section 230.10 Supplemen-tal ER Chapter 9 | Would potential mitigation plans differ for the various alternatives? If available, provide a discussion of mitigation plans/concepts for the proposed project and all viable alternatives. | Required for determination whether potential project alternatives would be in compliance with the 404(b)(1) guidelines and for comparison of alternatives under NEPA. |
| 133 | 40 CFR Section 230.10 | Expand the impacts discussion of the proposed project and all viable alternatives to include secondary and cumulative impacts that might be expected or reasonably foreseeable. | Required for determination whether potential project alternatives would be in compliance with the 404(b)(1) guidelines and for comparison of alternatives under NEPA. |

| **Cultural Resources** | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 134 | ESRP 2.5.3<br>ESRP 4.6<br>ESRP 4.1.3<br>36 CFR 800 | Provide the following additional information:<br>• The status of the South Carolina State Historic Preservation Office (SHPO) request for hard copies of the architectural survey cards;<br>• The Phase 2 cultural resources survey report for Pond C (when available);<br>• The results of the geomorphological study; and<br>• The status on the plan to relocate the Service Family Cemetery (38CK142), which would be impacted by Pond C excavation and inundation activities, as well as any input received by interested parties and the public regarding the planned relocation. | Duke Energy's supplemental response to RAI-119, dated December 3, 2009, Supplement C (ML093380647), includes a letter from the South Carolina Archives and History Center requesting hard copies of architectural survey cards, and states that they concur with the recommendation to relocate the Service Family Cemetery. Supplement D of the response to RAI-119 (ML093420405, survey not publicly available) includes the document "Cultural Resources Survey of the Proposed London Creek Reservoir (Pond C) and Water Pipeline" Final Report, October 2009, by Brockington and Associates. Page 4 of this report indicates that the Phase 2 survey and geomorphological study report would be provided at a later date. Pages iii, 2 and 37 indicates that the Service Family Cemetery relocation would occur in accordance with South Carolina State law and requires notification of the public, and that Duke Energy "would seek input from the public and then petition the Cherokee County Council for a resolution approving relocation of the cemetery to a predetermined location." |

DRAFT

| | | | |
|---|---|---|---|
| 135 | ESRP 2.5.3<br>ESRP 4.1.3<br>ESRP 5.1.3<br>36 CFR 800<br>10 CFR 51.45(d)<br>10 CFR 51.71(c) | Provide (not previously submitted) correspondence submitted by Duke Energy to the South Carolina SHPO and Tribes regarding past and future survey designs, results of surveys, and corresponding tribal and SHPO responses. Include telephone records of verbal responses associated with the Phase 1 or Phase 2 surveys for Pond C, the utilities project survey, and the transmission line surveys. Explain why only one tribe was provided an opportunity to comment on the scope of work for the cultural resources survey for Pond C.<br><br>*Any sensitive cultural resource material submitted to the NRC should include a request to protect the information, as appropriate, in accordance with 10 CFR 2.390(a)(3) and Section 304 of the National Historic Preservation Act.* | Correspondence between SHPO, Tribes, and the applicant and their cultural resources contractors provides regulatory input that would be necessary to assist the NRC staff in conducting their independent analysis impacts, in accordance with ESRPs 2.5.3, 4.1.3, 5.1.3 and 36 CFR 800. The provided correspondence should include:<br><br>1) SHPO responses on the utilities survey, dated 5/14/09, and the Phase 1 Pond C survey, dated 9/29/09, are provided in response to RAI-119, Supplement C (ML093380647). Both letters reference other letters received by SHPO from Duke Energy (letters dated 4/22/09 and 9/3/09), which have not been previously provided.<br><br>2) Letters to six tribes regarding the need for a supplemental water source were provided in Appendix B of the Supplemental ER, however only one tribe was provided the opportunity to comment. Brockington and Associates October 2009 final survey report (response to RAI-119 Supplement D dated 12/3/09, ML093420405, survey not publicly available) refers to a verbal response from the Eastern Band of Cherokee Indians regarding the scope of cultural resources survey work. A telephone record of this verbal response is needed.<br><br>3) The cultural resources survey for transmission lines (response to RAI-119, Supplement B dated 9/23/09, ML092710471, not publicly available) references several letters that have not been previously provided, including the letter from Duke Energy/ACC to the SHPO on the proposed area of potential effect (APE), or SHPO's approval of the APE, which is referred to on page 3 of the survey.<br><br>4) Correspondence to Tribes regarding the study plan and transmission line survey report, the APE, and their responses.<br><br>5) Email to SHPO dated October 20, 2008, referenced on Page 4 of the Brockington and Associates June 2009 report (response to RAI-119 dated 7/31/09, ML092170642, not publicly available) and subsequent submittal of the utilities survey scope of work, as well as correspondence with any tribes (specifically including the Eastern Band of the Cherokee |

DRAFT

| | | | |
|---|---|---|---|
| 135 cont'd | | | Nation) discussing the scope of work for Duke Energy's cultural resources surveys, and comments from the tribes, have not been provided. |
| 136 | ESRP 2.5.3<br>ESRP 4.1.3<br>ESRP 5.1.3<br>36 CFR 800 | Provide clarification on why the proposed historic district would not be indirectly impacted visually by Pond C dam, inundation, and associated activities. Provide clarification on whether the Phase 1 cultural resources survey for Pond C considered indirect effects, such as visual impacts, to the Cherokee Falls Mill Potential Historic District. | Page 53 of the October 2009 final report by Brockington and Associates provided in Duke Energy's response to RAI-119, Supplement D (dated 12/3/09, ML093420405, survey not publicly available) indicates the potential historic district is located across the Broad River and not on land that would be acquired by the proposed undertaking. The report does not state how the historic district would be indirectly impacted visually by Pond C dam, inundation, and associated activities. |
| 137 | ESRP 2.5.3<br>ESRP 4.6<br>ESRP 4.1.3<br>36 CFR 800 | Provide clarification on why the wastewater line and other Pond C activities would not indirectly impact the J.H. Stroup Cemetery and Moss Cemetery, whether interested parties have been consulted regarding these impacts, and why monitoring was not recommended. | The June 2009 report by Brockington and Associates (response to RAI-119 dated 7/31/09, ML092170642, not publicly available) indicates on Pages 4 and 18 that the J.H. Stroup Cemetery and Moss Cemetery sites are outside the direct effects APE, but does not discuss the indirect effects to these cemeteries or explain why monitoring is not needed during installation of the waterline given the proximity of the line to the cemeteries. |
| 138 | ESRP 2.5.3<br>ESRP 4.1.3<br>ESRP 5.1.3<br>36 CFR 800 | Provide documentation that interested parties have been consulted regarding the three National Register eligible architectural resources and documentation supporting the conclusion that these resources would not be indirectly impacted by the transmission lines. Also describe how impacts to 38CK172 would be avoided. | Pages ii and 102 of ACC's cultural survey report on transmission lines (response to RAI-119 Supplement B dated 9/23/09, ML092710471, not publicly available) describe potential viewshed impacts to the National Register-eligible Reid-Walker Farm, the Smith Ford Farm, and the 99-Islands Hydro Plant Dam, and the need to consider transmission line tower placement and tree-cover to avoid these impacts. Documentation of consultations and plans to avoid impacts to the three National Register eligible architectural resources and 38CK172 are necessary to assist the NRC staff in conducting their analysis of impacts in accordance with ESRPs 2.5.3, 4.1.3, 5.1.3 and 36 CFR 800. |

DRAFT

| | | | |
|---|---|---|---|
| 139 | ESRP 2.5.3<br>ESRP 4.6<br>ESRP 4.1.3<br>36 CFR 800 | 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. | Figure 4.1-2 from the Supplement to the ER shows several portions of the Pond C project area that were not covered in the Phase 1 cultural resources survey. It is not clear which of these areas is included in the Phase 2 survey. |
| 140 | ESRP 2.5.3<br>ESRP 4.1.3<br>ESRP 5.1.3<br>36 CFR 800 | Provide one APE map that shows the entire APE for the Lee project, including the nuclear station, on- and off-site transmission lines, Pond C and the associated pipeline. Provide two versions of this project APE map - one showing locations of cultural resources and one without. Describe how the APE was defined for direct and indirect (visual, noise and aesthetic) impacts for Pond C, the on-site and off-site transmission lines, construction spoils area, and construction rebar laydown area. | 36 CFR 800 and ESRP 2.5.3 direct the staff to define the APE for construction and operation. Section 2.5.3 of the Supplement to the ER discusses the APE, but no single map shows the APE for all of the project activities, such as transmission lines, the Lee Nuclear Station and additional areas identified for Pond C. |
| 141 | ESRP 4.1.3<br>ESRP 5.1.3<br>36 CFR 800<br>10 CFR 51.45(d) | Provide documentation that indicates that SHPO has concurred with Duke Energy's cultural resources protection procedure summarized in the response to RAI-45 (ML083080273) and any clarifications or decisions from the SHPO regarding the need for a Programmatic Agreement between SHPO and Duke Energy. | Duke Energy's response to RAI-45 (dated October 28, 2008, ML083080273) provided a summary of their inadvertent discovery procedure which guides Duke Energy's actions if unanticipated discoveries occur during operation and construction of the Lee Nuclear Station. This response does not indicate if the SC SHPO has concurred with this procedure and if SHPO still has concerns regarding the need for a Programmatic Agreement. |

| **Ecology - Aquatic** | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 142 | ESRP 4.3.2<br>ESRP 5.6.2<br>10 CFR 51.45(c) | Provide an estimate of the proposed schedule, timing, and duration of the activities associated with the rail line, transmission lines, and Pond C (including realigning SR 329). If specific measures would be taken to reduce impacts to | The Supplement to the ER does not provide information on the proposed schedule of Pond C and other offsite preparation and construction activities that would affect aquatic communities as well as timing and duration of these activities. |

DRAFT

| Ecology - Aquatic | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 142 cont'd | 10 CFR 51.71(d) | ecological communities (e.g., timing activities to avoid spawning seasons), describe those measures. | |
| 143 | ESRP 4.3.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide a justification for drainage of the ponds both inside and outside the full pool elevation and indicate how the fish would be disposed after removal from the farm ponds (e.g. transplant to another pond, etc.). | The Supplement to the ER Section 4.3.2.2.3.1 indicates that existing farm ponds within the Pond C study area would be breached and drained and fish would be removed. However, no explanation is provided that clearly indicates why draining is necessary for all the ponds in the Pond C study area and how fish would be disposed. |
| 144 | ESRP 4.3.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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.). | The Supplement to the ER Sections 4.3.2.2.1 and 4.3.2.2.3 briefly describe impacts associated with improvement of rail line culvert crossings and construction of Pond C. These activities involve temporary stream diversions. The Supplement to the ER does not list what practices would be implemented to protect aquatic species while waters are being diverted to install a new culvert and to create Pond C. Best Management Practices generally provide for protection of aquatic organisms when water bodies are diverted. |
| 145 | ESRP 4.3.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide a description of any additional plans for environmental improvement following construction of Pond C and other offsite projects (e.g., rail line and transmission line) following construction. | Section 4.3.1.2.3.1 of the Supplement to the ER indicates grass may be seeded along the pipeline connecting Ponds B and C. No additional environmental improvements following construction of Pond C and the other offsite projects (rail line and transmission line) are described. Re-planting areas near water bodies generally decreases the recovery time for aquatic ecosystems and improves functionality of disturbed systems (e.g., vegetation provides shade and input of terrestrial insects and other needed materials such as leaf litter to the aquatic system). Efforts to enhance environmental restoration post-construction influences the overall environmental impacts from the project. |

DRAFT

| | | | |
|---|---|---|---|
| 146 | ESRP 4.3.2<br>10 CFR 51.45(d)<br>10 CFR 51.71(c) | Provide the mitigation plans developed in conjunction with the Federal and State permitting agencies as they are completed. | Section 4.3.1.2.3.2 of the Supplement to the ER indicates mitigation for disturbance of wetlands would be specified in the Section 404 permit issued by the USACE and the associated State Section 401 permit. Efforts to mitigate negative impacts of construction activities in response to Federal or State permitting requirements, or outside agency requirements, would influence the overall environmental impacts from the project. |
| 147 | ESRP 5.3.1.2<br>10 CFR 51.45(d)<br>10 CFR 51.71(c) | Provide copies of the National Pollutant Discharge Elimination System (NPDES) discharge permit application and any response(s) from SCDHEC as they are received. Include information on how the intake system would be compliant with the NPDES Permit under Sections 316(b), 401, and 402 of the Clean Water Act. | Table 1.2-1 in the Supplemental ER indicates the application for a NPDES discharge permit was submitted to SCDHEC in October 2009. |
| 148 | ESRP 5.3.1.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide the rationale for selecting the screen-type (i.e., fixed or traveling) at the intakes for Ponds A, B, and C. Describe schedule and methods that would be utilized to keep the screens free of debris. Describe other aspects of the pond intake/discharge designs that would reduce impacts to fish. | Duke Energy's response to RAIs 55 and 56 (dated 12/3/2008, ML083440293) and the description of the intake designs in the Supplement to the ER (Sections 3.4.2.1, 4.2.2.1, 4.3.2, and 5.3.1.2) indicate that traveling screens would not be incorporated into the design of the ponds' intake structures. ESRP 5.3.1.2 directs staff to consider the alternatives for reducing or avoiding adverse environmental effects, as well as any environmental benefits that may result from the proposed action. Staff must consider the design and proposed operation of any intake screen, screen wash or fish return system and the potential value of such a system, if it is not proposed. |
| 149 | ESRP 5.3.1.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide qualitative information or quantitative data that describe the susceptibility for important fish and shellfish species to be impinged at the Pond C intake. | The Supplement to the ER Section 5.3.1.2 assumes ichthyoplankton entrained and passing through intake pumps have a 100% mortality rate. A mortality rate estimate is not provided for the impingement of aquatic organisms. ESRP 5.3.1.2 directs staff to determine if the fish and shellfish species present are susceptible to entrapment, impingement, or entrainment such that effects would be detectable or may destabilize or noticeably alter fish or shellfish population levels. |

DRAFT

| | | | |
|---|---|---|---|
| 150 | ESRP 5.3.1.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | Altered hydrodynamic characteristics induced by intake system operation are unlikely for a system with small screen openings and low through-screen velocities. The response to RAIs 55 and 56 (ML083440293) indicated that intake screens for Pond A and Pond B would be constructed of 3/8-in mesh with through-screen velocities less than 0.5 ft/s, but a detailed description of the Pond C intake was not included in the Supplement to the ER. |
| 151 | ESRP 5.3.1.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide documentation on how the State of South Carolina and the USACE would be expected to regulate Ponds A, B, and C (e.g., as cooling ponds or as waters of the State or U.S.).<br>If 40 CFR 125.84(a)(3)(ii) would be applicable, describe how refilling the Ponds would be in compliance with that regulation. | 40 CFR 125.84(a)(3)(ii) states that "the total design intake flow must not disrupt the natural thermal stratification or turnover pattern (where present) of the source water except in cases where the disruption is determined to be beneficial to the management of fisheries for fish and shellfish by any fishery management agency(ies)." However, the Supplement to the ER Section 5.2.3 states, "When Ponds B and C are refilled after a significant drawdown event, water pumped into the bottom of the pond alters the thermal stratification of the pond by a small amount since the ponds are generally refilled in the winter when they are isothermal." Depending on the regulation of the ponds, altered thermal stratification could be a significant impact. |
| 152 | ESRP 6.5.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide copies of consultation letters and agreed-upon preoperational/operational monitoring plans related to the aquatic environment as they become available. | Duke Energy is consulting with State and Federal agencies on permitting issues related to the aquatic environment. Monitoring requirements are one expected output from these consultations. ESRP 6.5.2 indicates staff should verify sufficient information has been provided to evaluate the adequacy and accuracy of the data collection and analytical methods of proposed monitoring programs because the programs developed need to be tailored to individual site and ecological characteristics. |

DRAFT

| Ecology – Terrestrial | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 153 | ESRP 6.5.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide documentations of plans and commitments for pre-application, preoperational, and operational monitoring related to the aquatic environment. | Duke Energy indicated in ER Section 6.5.2 that they would not perform any aquatic environmental monitoring unless required to do so by a permitting agency. However, with the construction of Pond C and other offsite facilities, the potential impact to the aquatic environment at the Lee Nuclear Station has increased (according to the Applicant) from SMALL to SMALL-MODERATE (ER Section 6.5.2 and Supplement to the ER Table 9.3-3).<br>An updated discussion of monitoring or mitigation was not provided in the Supplement to the ER Section 6.5.2. |
| 154 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide documentation for any other ecological or biological studies of the Pond C study area or its environs, beyond the sources used to develop lists of potential species in the Pond C study area, that are recent or currently in progress. If there are none, state what efforts were made to identify such studies, and include a list of the organizations contacted. | Sources of information cited when developing lists of species potentially occurring in the Pond C study area include museum and university records, North American Breeding Bird Surveys, and Atlas, etc (ML093491119). The supplemental ER does not describe other ecological or biological studies of the Pond C study area or its environs that are recent or currently in progress, nor attempts made to locate such information by contacting State or Federal agencies or private industry. |
| 155 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Clarify the percentage of Pond C study area that is comprised of forested land. | On page 2-2 in the Supplement to the ER the text indicates that forests occupy 65 percent of the Pond C study area, whereas page 2-50 indicates that it is 78 percent. |
| 156 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide documentation on where searches were conducted for colonial water bird nesting activity. | Section 2.4.1.2.2.2 of the Supplement to the ER indicates that no nests of colonial nesting water birds were observed in the Pond C study area. However, it did not indicate where searches were conducted for such nesting activity, and it was not discussed in the 2009 breeding bird report for London Creek. |

DRAFT

| Ecology – Terrestrial | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 157 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | The Supplement to the ER describes a re-routed transmission line, laydown areas, and pipeline corridors originating at Pond C. However, Section 2.4.1.1 does not provide information on vegetation cover types in the portions of the re-routed transmission line and pipeline corridors which occur outside the study area, or the laydown area that occurs outside the study area (Figure 4.3-3). |
| 158 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | Georgia aster, a Federal candidate species and State species of concern, was found in a transmission line utility corridor in the Pond C study area (Section 2.4.1.3.1.1). Information in Section 2.4.1.1 indicates that a total of only 0.01 acre was searched in existing transmission line corridors, even though the OFM cover type makes up slightly more than 20 percent of the Pond C study area. The OFM cover type in which the species is found is likely prevalent in the unsearched portions of the transmission line ROW and elsewhere in utility ROW in the Pond C study area. |
| 159 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide a description of any terrestrial ecological communities found at Lake Cherokee that could be affected either positively or negatively by the creation of an adjacent 620-acre reservoir. | Section 2.4.1.4.5 of the Supplement to the ER discusses recreational areas. However, Lake Cherokee, a recreation area in the near vicinity of Pond C, is not discussed. |
| 160 | ESRP 2.4.1<br>ESRP 5.6.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide information on waterfowl species and habitat at water bodies that would be traversed by the proposed re-routed transmission line and any associated potential effects. | The Supplement to the ER describes a re-routed transmission line. The proposed re-routed transmission line passes by or over sizable water bodies that could support waterfowl (Figure 3.1-7). |

DRAFT

| | | | |
|---|---|---|---|
| 161 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | The need for a new transmission line is mentioned in the Supplement to the ER, but is neither discussed in detail nor presented graphically. Pages 2-1, 2-2, and 3-1 of the Supplement to the ER state the need for a new transmission line and the re-routing of an existing 44-kV transmission line. The re-routed transmission line is presented in Figures 3.1-7 and 4.3-3 and related impacts are discussed in the ER in section 4.3.1.2.2. However, the new transmission line is neither presented graphically nor discussed. |
| 162 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide clarification on whether the improvements to existing roadways in support of Pond C would occur entirely within the study area, or whether areas outside the study area also would be affected. Distinguish between such impacts inside and outside the Pond C study area both in the text on page 4-18 and in a revision of Table 4.3-2, if indeed there would be any such impacts outside the study area. | Page 4-18 of the Supplement to the ER includes a statement about improving roadways and Table 4.3-2 quantifies habitat impacts from roadway improvements. However, no information is provided as to where these improvements would occur. |
| 163 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | A lay-down area in OFM habitat occurs outside the Pond C study area (see Figure 4.3-3). It is unclear whether this accounted for in Table 4.3-2. |
| 164 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide a discussion regarding the impacts to wetlands that would occur outside the area to be inundated by Pond C (e.g., wetlands impacted by the replacement of the rail road culverts). Include in the discussion any related mitigation that would occur. | Page 4-18 of the Supplement to the ER discusses impacts due to the replacement of the rail road culverts (forest clearing), and states that there would be wetland impacts up- and downstream, but does not provide any detail for such impacts. Impacts to these and any other wetlands outside the Pond C inundation area should be treated separately since they would not be permanently impacted, unlike wetlands located in the area of Pond C that would be inundated. |
| 165 | ESRP 4.3.1<br>10 CFR 51.45(c) | 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- | The re-routing of the 44-kV transmission line is presented in Figures 3.1-7 and 4.3-3 of the Supplement to the ER, and related habitat impacts are discussed in Section 4.3.1.2.2 and quantified in Table 4.3-2. It is unclear if these pertain to the |

DRAFT

| | | | |
|---|---|---|---|
| 165 (contd) | 10 CFR 51.71(d) | 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. | entire re-routed portion or just the portion in the Pond C study area. |
| 166 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | The new information presented in Section 4.3.1.2.3 of the Supplement to the ER discusses the overall effect of Pond C (600-700 ac) on the terrestrial environment at the watershed, site and vicinity, and regional scales as being LARGE, MODERATE, and SMALL, respectively. However, this assessment does not include the associated effects of all the other activities associated with Pond C which would occur outside the inundation area, and which, together with the 620-ac inundation amounts to over 1,000 ac of terrestrial impacts (see Table 4.3-2). The assessment in Section 4.3.1.2.3 also does not define the site and vicinity and regional levels, and thus the ecological relevance is unclear. |
| 167 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | Section 4.3.1.2.3.1 of the Supplement to the ER discusses terrestrial vegetation impacts quantified in Table 4.3-2. The table and text do not make clear whether impacts (besides the impoundment) are located within the inundation area, outside the inundation area but within the study area boundary, or outside the study area boundary. |
| 168 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | Table 4.3-2 summarizes the acreage of habitats to be affected during the construction of Pond C. However, Table 4.3-2 and the associated text do not clearly specify how much acreage of which habitat types would be permanently lost versus temporarily disturbed. The text also does not clearly specify what measures, if any, would be taken to restore temporarily disturbed habitats. |

DRAFT

| | | | |
|---|---|---|---|
| 169 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide clarification on whether the first 50 ft of the 300 ft buffer area are included in Table 4.3-2. | Page 2-1 of Section 2.2.2 of the Supplemental ER describes a 300 ft buffer that would surround Pond C. It is unclear whether the first 50 ft (i.e., the area that would be cleared and seeded to grass) of the 300 ft buffer area around the perimeter of Pond C are included in the quantified habitat impacts in Table 4.3-2. |
| 170 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | Table 4.3-2 summarizes the acreage of habitats to be affected during the construction of Pond C. However, it is unclear whether Table 4.3-2 contains habitat impacts associated with the water pipeline. |
| 171 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide a description of any plans or commitments that are in place to ensure all land clearing activities and Pond C inundation occur outside the bird nesting season. | Page 4-25 in the Supplement to the ER indicates that dam building activities would be planned to occur outside the bird nesting season. However, no specific plans or commitments are described that pertain to other land clearing activities and the Pond C inundation. |
| 172 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide references for the aerial and satellite photos discussed on page 4-25. | Page 4-25 in the Supplement to the ER describes the use of aerial and satellite photos to examine cover types in watersheds adjacent to Pond C. However, no references for the photos are provided. |
| 173 | ESRP 4.3.1<br>10 CFR 51.45(b)(2) | Provide a description of any plans or commitments that are in place to relocate the population of Georgia aster from the existing transmission line in the Pond C inundation area. Describe any plans or commitments to relocate the other State species of concern and rare plant species. | Page 4-26 in the Supplement to the ER mentions the possibility of relocating the Georgia aster population (Federal candidate species and State species of concern) located along an existing transmission line ROW in the Pond C study area (Figure 4.3-3). However, neither specific plans nor commitments are described for the Georgia aster, other State species of concern (i.e., Southern adder's tongue fern, drooping sedge, Southern enchanter's nightshade, single-flowered cancer root, and Canada moonseed), or other rare plant species (i.e., mountain holly, golden ragwort, tuberous dwarf-dandelion, yellowish milkweed vine, and Kral's sedge) identified in the 2009 botanical report for Pond C. |

DRAFT

| | | | |
|---|---|---|---|
| 174 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide clarification on whether the detour of the rail spur around the Reddy Ice Plant is 1,300 ft or 1,800 ft. | The responses to RAI 68 (dated 11/25/2008, ML083520465; and dated 5/12/2009, ML091340476) both state that the detour of the rail spur around the Reddy Ice Plant would be 1,300 ft. However, the Supplement to the ER in section 9.3.2.1 states that the detour would be 1,800 ft. |
| 175 | ESRP 6.5.1<br>10 CFR 51.50(c) | Describe what plans or commitments Duke Energy has for pre- and post-operational monitoring for Pond C. | Section 6.5.1 does not mention any pre-operational monitoring that would be initiated by Duke Energy (e.g., monitoring the transplanted Georgia aster population, transplanted populations of other State species of concern, and transplanted populations of other rare species). This section of the ER indicates that any monitoring would need to be imposed by Federal and State agencies. |
| 176 | ESRP 5.3.3.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | To evaluate impacts to wetlands, provide the projected daily change in Pond B surface elevation, based on a period of record from 1926 to 2006, for the following periods:<br>1) partial alignment to Pond B for an actual 7-day period in 1.5 years plus the time required to subsequently refill Pond B;<br>2) partial alignment to Pond B for an actual one-month period in 6.4 years plus the time required to subsequently refill Pond B;<br>3) complete alignment to Pond B for an actual one-month in 10.3 years plus the time required to subsequently refill Pond B;<br>4) partial alignment to Pond B for 90 consecutive days in 12.2 years plus the time required to subsequently refill Pond B; and<br>5) for the 42 days of curtailment during June-September 2002 including any preceding period of partial and/or complete alignment prior to curtailment and the time required to subsequently refill Pond B. | The response to RAI 82 (dated 10/17/2008, ML083050603) provided projected daily change for Pond B, however, the analyses did not account for Pond C. It is anticipated that the response to RAI 82 would change if Pond C were included in the analyses, because the drawdown and refilling of both reservoirs are interdependent. |

DRAFT

| | | | |
|---|---|---|---|
| 177 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | Based on a conference call between Duke Energy and NRC on September 19, 2008, Duke submitted an informal one-page proposal to NRC to conduct and report on field surveys for Schweinitz's sunflower, Georgia aster, smooth sunflower, and smooth coneflower in open, disturbed, and non-forested portions of the Lee site, particularly in such areas that would be affected by construction. |
| 178 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide the addendum report to the 230 *kV and 525 kV Transmission Line Ecological Survey Report* (ML092710484) that addresses the additional surveys and results for Schweinitz's sunflower and State and Federal plant species of concern. | The 230 *kV and 525 kV Transmission Line Ecological Survey Report* (dated July 31, 2009, ML092710484) states in section 2.2 that surveys were conducted from March through May in order to coincide with the flowering period of dwarf-flowered heartleaf (Federally threatened). Section 3.1.3 of the report states that Scweinitz's sunflower (Federally endangered) occurs in adjacent Chester and York counties and potentially occurs in the project area, but doesn't flower until August through October, adding that additional surveys for the species would be necessary during its flowering period. Section 3.1.3 further states that if plant species of concern to State and Federal agencies are discovered during the additional surveys for Schweinitz's sunflower, they will be noted in an addendum report. |
| 179 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide addenda to the 230 kV and 525 kV Transmission Line Ecological Survey Report (ML092710484) for avifauna and herpetofauna, that include field survey methods, locations, and results. | The 230 kV and 525 kV Transmission Line Ecological Survey Report (dated July 31, 2009, ML092710484) did not include avifauna and herpetofauna. All other project areas (i.e., Lee site, rail road corridor, Pond C study area) have been surveyed for these two groups of biota. |
| 180 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide information on what was considered potential habitat for each protected species in the Lee Nuclear Station and railroad spur avian reports, and where (e.g., just along certain or along all transects and point count stations in the corridor, etc.) and how (e.g., sightings, calls, nest searches) the protected species surveys were conducted. | The Lee Nuclear Station (dated August 31, 2009, ML093140392) and railroad spur (dated August 31, 2009, ML093130453) avian reports submitted to NRC do not describe potential habitat for protected species, and where and how the protected species surveys were conducted. A more detailed description of these components is needed to determine the adequacy of the surveys for determining impacts to protected species. |

DRAFT

| | | | |
|---|---|---|---|
| 181 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | The railroad spur avian report (ML093130453) submitted to NRC did not describe any surveys along the realignment section at the Reddy Ice Plant. The results of such surveys are needed to determine impacts to birds in this part of the project footprint. |
| 182 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide information on where the raptor survey was conducted for the railroad spur avian report. Clarify whether the surveys consisted of sightings, calls, and/or nest searches. Clarify whether the surveys were conducted along all or part of the railroad corridor. | The railroad spur avian report (ML093130453) submitted to NRC did not describe where and how raptor surveys were conducted (e.g., along a portion or all transects and point count stations). A more detailed description of these surveys is needed to determine the impacts to raptors. |
| 183 | ESRP 2.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide Federal (e.g., U.S. Fish and Wildlife Service) consultation letters that pertain to terrestrial ecology that were received by Duke Energy for the alternative sites, and State (e.g., Natural Heritage Program; Rare, Threatened, and Endangered Species Inventory, etc.) consultation letters that were received for the transmission line corridor, Pond C, railroad spur, and alternative sites. | The most recent U.S. Fish and Wildlife Service (FWS) correspondence to Duke Energy for the Lee site, rail road corridor, transmission line corridors, and Pond C is provided in the response to RAI 119. Previous (2006) FWS and South Carolina Department of Natural Resources correspondence to Duke Energy for the Lee site was provided in Appendix B of ER Rev. 1. Similarly, FWS correspondence for the alternative sites, and DNR correspondence for the transmission line corridors, Pond C, railroad spur, and alternative sites is requested to support evaluation of potential impacts to Federal and State listed species. |
| 184 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide mitigation plans, including those developed in conjunction with State and/or Federal agencies, for the loss of rare, unique, or otherwise valuable terrestrial habitats as a result of creating Pond C. | The upper slope pine, pine-mixed hardwoods, and cut/over mixed hardwoods stands of the Pond C study area are typical of similar cover types found elsewhere in the Piedmont. However, 10 significant natural areas were observed on the lower slopes and bottoms of London Creek. These were determined to be “significant” based on the presence of rare plant communities, rare plant species, or mature to old growth trees. The significant natural areas (and other areas) harbor five plant species of concern to the State of South Carolina and another five plant species that are considered rare (Botanical Inventory, dated December 11, 2009, ML093491118). |

DRAFT

| Hydrology – Ground Water | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 185 | ESRP 4.2<br>ESRP 5.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Submit a letter from the Gaffney Board of Public Works stating that existing capacity for treating drinking water and wastewater is sufficient to meet the needs of the proposed Lee Nuclear Plant. | Duke Energy's response to RAI 15 (dated October 17, 2008, ML083050603) indicated that they would ask the Gaffney Board of Public Works whether the existing system could meet the needs after Duke Energy re-evaluated the drinking water and wastewater capacity needs for construction and operation of the Lee Nuclear Station. The letter has not been provided. |
| 186 | ESRP 2.3.3<br>ESRP 5.2.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide an analysis of the surface and groundwater quality changes anticipated in and around Pond C during the initial filling of the pond, and the potential for the saturation of previously unsaturated sediment profiles in the new impoundment to cause elevated concentrations of metals and other constituents in the surface water. Describe the duration of such impacts relative to initial filling and operation of Pond C. | Surface and groundwater quality issues could arise when a new impoundment is filled. Filling an impoundment could change groundwater flow patterns, resulting in a change in groundwater quality. Saturating previously unsaturated earth materials could produce a different geochemical environment that could affect leaching. As such, Pond C may experience high mineral concentrations in surface water for an initial period of time. |
| 187 | ESRP 2.3.3<br>ESRP 5.2.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Similar to RAI 189, provide data and analysis on surface and groundwater quality changes that were observed during and after filling of previously constructed artificial impoundments in the region. Describe changes in potential flow pathways as a result of the newly saturated sediments. | While surface water quality data are available for London Creek and Lake Cherokee, data related to the initial mineral weathering impacts on Pond C water quality caused by saturating previously unsaturated sediments is not presented. Comparable data may be available on this phenomena from records of surface water impoundments from early in the life of the Lake Cherokee impoundment, upstream of Pond C. |

DRAFT

| Hydrology – Ground Water | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 188 | ESRP 6.3<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide a description of monitoring of surface water in Pond C and nearby groundwater that would be performed to detect and quantify changes in water quality associated with the filling of the new impoundment. | Pond C may experience high mineral concentrations for an initial period of time. This may result from leaching caused by saturating a previously unsaturated soil profile as the pond is filled. It is not clear that monitoring of groundwater and surface water during the point fill period is designed to address this potential issue. |

| Site Layout and Plant Description | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 189 | ESRP 3.1, 3.3, 3.4<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 3.1-1, 3.1-7, 3.3-1 sheets 1 and 2, 4.3-1, 4.3-2, 5.3-1 sheets 1 and 2, 5.3-2, 5.3-5 sheets 1 and 2. Provide a revised ER Rev. 1 Figure 3.1-6 (artist rendering of plants on site) that includes the cooling towers. | GIS data are needed to verify spatial analyses and to prepare maps for the environmental review. Site layout, intake and discharge structures, new/improved road and railway routes, pipeline routes, transmission corridors, drainage system features (e.g. retention ponds, outfalls), land use/land cover, habitat types, wetlands and water body layers are of particular interest. |

DRAFT

| | | | |
|---|---|---|---|
| 190 | ESRP 3.3.1, 3.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide physical descriptions (e.g., location, dimensions, construction materials, pump systems) of the "River Water Intake Subsystem" and the "Refill Subsystem Intake" referred to in Supplemental ER Figure 3.3-1, Sheets 1 and 2.<br><br>Discuss any changes to the site preparation and construction methods, affected area, spoils volume and disposition, timing, and duration for the river intake and associated distribution systems. Provide a narrative description of the relationship or interconnections between these intake(s) and the various Make-Up ponds, including the expected flow rate and duration of refill pumping operations. | Descriptions of the various plant water systems, their interconnections, and operational interdependence are needed to complete the plant description. The figures in the Supplement to the ER indicate that the size of the river intake structure is larger than that described in ER Rev. 0 and Rev. 1. A supporting discussion is needed to clarify differences between the river intake and supporting structure(s) proposed in the Supplement to the ER and those described in ER Rev. 1. |
| 191 | ESRP 3.3.1, 3.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide the piping plan for water transfers from the river intake system(s) to and between Make-Up Ponds A, B, and C. | Descriptions of the various plant water systems, their interconnections, and operational interdependence are needed to complete the plant description. |

DRAFT

| | | | |
|---|---|---|---|
| 192 | ESRP 4.3.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | Subsequent to Duke's response to RAI 69 (misidentified as a response to RAI 57 in Duke's October 28, 2008 letter, ML083080273) the size of the proposed intake structure was increased by approximately 60 percent (see Figure 5.3-1 in the supplemental ER). Based on the most current intake and pipeline footprint, the following information will enable an assessment of potential for impacts (e.g., sedimentation) from construction of the intake structure and intake pipeline (section 4.3.1.1.2, page 4.3-5 of the ER), on the alluvial wetland located just upstream from the proposed intake location:<br><br>• The length and location of shoreline, in relation to the location of the wetland, that will be affected by the intake;<br>• The aerial extent of the cofferdam for the intake;<br>• The potential effects of the cofferdam on river currents (e.g., altered currents could potentially transport sediment just upstream to the wetland if a backwater were created);<br>• The projected amount of spoils from the intake excavation and the location for the deposition of these spoils;<br>• The projected amount of spoils from the excavation of the intake pipeline and the location for the deposition of these spoils;<br>• A drawing depicting the above items;<br>• Characterization (biota [vegetation and wildlife], hydrology, and soils) of the end of the wetland that could be impacted (end of the wetland close to the proposed intake structure);<br>• Documentation of construction best management practices that will be employed. |

DRAFT

| | | | |
|---|---|---|---|
| 193 | ESRP 4.2 and 4.3<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide details regarding the origin of the fill materials to be used for construction of the earthen dam that will impound Pond C. | In Section 4.2.2.4.2 of the Supplement to the ER, Highway Bridge Construction, it is stated that some material removed during construction of a new highway bridge for SC 329 might be suitable for fill material in the Pond C dam. However, neither the suitability criteria nor the potential volume to be used from that source was stated. Furthermore, the source and associated volumes of needed fill material from sources other than the bridge construction are not given. |
| **Land Use** | | | |
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 194 | ESRP 2.2.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide additional information on zoning and land use restrictions, including how Pond C property is currently zoned and how it would be zoned if the land is converted to a pond. Also, explain any land use restrictions that would apply to the Pond C site. | ER Rev. 1 states unincorporated parts of Cherokee County are not subject to zoning. However, it is not clear if the Pond C property is completely unincorporated. |
| 195 | ESRP 2.2.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide information on whether all properties within the Pond C site have been acquired. | The Supplement to the ER states that not all Pond C property had been acquired. |
| 196 | ESRP 4.1.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Clarify whether any permanent structures would be built on the Pond C site. | The Supplement to the ER states that temporary construction structures would be established on site, but does not describe whether any permanent structures would be constructed on the Pond C site. |

DRAFT

| Land Use | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 197 | ESRP 5.1.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide a detailed description of the maintenance activities in the transmission line ROW that would potentially impact transportation. | Section 5.1.2 of the Supplement to the ER states ROW maintenance would impact transportation use. Elaborate on the type of needed maintenance, the frequency of the maintenance, and why and for how long it would impact transportation. |

| Non-Radiological Health - Noise | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 198 | ESRP 4.4.1<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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 identified. | ESRP 4.4.1 directs staff to evaluate the impacts associated with noise generated during construction activities. Before this evaluation can be made, a list of vulnerable locations must be compiled. |

DRAFT

| Power Supply | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 199 | ESRP 8.3<br>10 CFR 51.71<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide supporting data quantifying the demand and supply of power in the service territory for 3 years after the commercial declaration of the second reactor. | Letter Number WLG2010.03-09, dated March 31, 2010 (ML100920024), indicates an extension to 2021 of the first reactor commercial date, but does not indicate when the second reactor will be placed into service and how that will impact margin(s). In order to complete the technical review of the need for power assessment, information is needed on the power demand and power supply forecast for a minimum of 3 years past the commercial declaration and operation of the 2nd reactor, and the impact to both capacity and reserve margins over the same time frame. |
| **Socioeconomics/Environmental Justice/Benefit Cost** | | | |
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 200 | ESRP 4.4.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide an explanation of the in-migration scenario for Pond C. Explain the basis for the assumption that in-migration would be the same as for the Lee Nuclear Station. Describe what type and percentages of specialized labor would be needed to construct Pond C and whether that type of labor is available within the 50 mile region. Provide a breakdown of labor needed by occupation and the current availability of labor in the region by the same occupation. | The Supplement to the ER does not provide the basis for the assumption that the in-migration scenario for construction of Pond C would be the same as that for the Lee Nuclear Station. |

DRAFT

| Socioeconomics/Environmental Justice/Benefit Cost | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 201 | ESRP 4.4.1.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide additional information on the final plans or reports for realignment of SR 329, the size of the area to be disturbed in the realignment, the length of new access roads and their availability to the public. | Section 4.4.1.3 of the Supplement to the ER states major road reconstruction would occur with the inundation of Pond C but does not indicate whether construction plans for SR 329 have been finalized, if a study or report with road construction details exist, or how many acres of land would be disturbed to realign SR 329. |
| 202 | ESRP 4.4.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | 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. | Section 2.5 of the Supplement to the ER does not provide current property tax information for the Pond C area. |
| 203 | ESRP 4.4.2.3<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide information on any possible recreation currently taking place on the proposed Pond C property. Also include any possible subsistence-based activities. | Section 2.5 of the Supplement to the ER does not provide information on the current level of recreation taking place on proposed Pond C property. |
| 204 | ESRP 10.4<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide information on expected changes in the generating capacity of the plant resulting from the addition of Pond C. | Pond C was proposed to mitigate the potential for periods of extended shut-down because of low flow in the Broad River. Has the expected generating capacity changed from the value submitted in Rev. 1 of the ER? What would the expected generating capacity be without Pond C? |

DRAFT

| Transportation | | | |
|---|---|---|---|
| **RAI No.** | **ESRP/ER Section** | **RAI** | **Supporting Information** |
| 205 | ESRP 4.4.1, 4.4.2<br>10 CFR 51.45(c)<br>10 CFR 51.71(d) | Provide an estimate of Pond C construction materials to facilitate calculation of transportation-related impacts from material transport. | An estimate of the construction materials, such as concrete, rebar, cable, piping, etc., and work force estimates was not provided in the Supplement to the ER. |

DRAFT