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

Subject: Duke Energy Carolinas, LLC
William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019
AP1000 Combined License Application for the
William States Lee III Nuclear Station Units 1 and 2
Response to Request for Additional Information
Ltr# WLG2009.03-03

Reference: Letter from L.M. Tello (NRC) to B.J. Dolan (Duke Energy), *Request for Additional Information Regarding the Environmental Review of the Combined License Application for William States Lee III Nuclear Station, Units 1 and 2*, dated January 21, 2009

This letter provides the Duke Energy response to the Nuclear Regulatory Commission's (NRC) request for the following additional information (RAI) item listed in the reference letter:

RAI 112, Cultural Resources

The response to this NRC request is addressed in the enclosure which also identifies any associated changes that will be made in a future revision of the William States Lee III Nuclear Station application.

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

Bryan J. Dolan
Vice President
Nuclear Plant Development

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NRC

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Enclosure:

1. Response to RAI 112, Cultural Resources


AFFIDAVIT OF BRYAN J. DOLAN

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



Bryan J. Dolan

Subscribed and sworn to me on March 6, 2009



Notary Public

My commission expires: April 19, 2010



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xc (wo/enclosure):

Loren Plisco, Deputy Regional Administrator, Region II
Mark Tonacci, Acting Branch Chief, DNRL
Robert Schaaf, Branch Chief, DSER

xc (w/enclosure):

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

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

RAI Letter Dated: January 21, 2009

Reference NRC RAI Number: ER RAI-112

NRC RAI:

Duke's response to RAI 46 discussed cumulative impacts but not secondary impacts. Provide an analysis of secondary impacts to cultural resources resulting from measures identified in Table 4.6-1 (Summary of Measures and Controls to Limit Adverse Impacts during Construction). Describe how these measures could impact cultural resources in terms of small, medium, or large based on that analysis.

Duke Energy Response:

Chapter 4 of the Environmental Report (ER) assesses the potential impacts of Lee Nuclear Station construction on the environment within the boundary of the Lee Nuclear Site, in its vicinity, and in the surrounding region. This includes an assessment of impacts on cultural resources (historic properties). In Revision 0, the cultural resources assessment is particularly focused on four delineated areas of potential effect (APE) on the Lee Nuclear Site and another visual-aesthetic APE encompassing the area within 1 mile of the two on-site cooling tower pads and a meteorological tower. The latter APE includes off-site locations such as the site of the Ninety-Nine Islands Dam and the adjacent Ninety-Nine Islands Hydroelectric Station, both aboveground historic properties eligible for listing on the National Register of Historic Places (NRHP). The assessed primary impacts of construction on historic properties and other aspects of the existing environment are summarized in Table 4.6-1. This table also contains measures and controls designed to limit the listed adverse impacts.

Implementation of some of these measures and controls can have secondary impacts on the existing historic properties environment. Such measures and controls can impact a buried archaeological site if their associated activities entail soil intrusions that could disturb or destroy intact cultural deposits. The implementation of mitigation measures and controls can impact an aboveground historic site or traditional cultural property if the associated activities would physically damage or destroy the resource, degrade the aspects of its integrity that contribute to its significance (including aesthetic and auditory aspects), or prevent reasonable stakeholder access to the resource. Such secondary impacts require the presence of a historic property that can be impacted. The dam and hydroelectric station are the only intact historic properties within the APEs surveyed to date.

For this response, Duke Energy analyzed the measures and controls on Table 4.6-1 to identify those that involve *reasonably foreseeable* secondary impacts on historic properties and those that do not. Because of their intrinsic nature, most of the measures and controls listed on Table 4.6-1 are not expected to result in adverse secondary impacts to historic properties. For example, it is not reasonably foreseeable or logical to expect that a measure to "...minimize spills of hazardous

wastes/materials through training and rigorous compliance with applicable regulations...” would entail soil-intrusions or emissions of energy sufficient to damage or destroy an historic property, degrade its integrity, or restrict stakeholder access to the resource. The impacts from such measures and controls would neither destabilize nor noticeably alter any important attribute of a historic property. Therefore, such impacts would be SMALL.

Attachment 1 lists those Table 4.6-1 measures and controls that could have reasonably foreseeable secondary impacts on historic properties and provides an analysis of those secondary impacts.

Associated Revisions to the Lee Nuclear Station Combined License Application:

None

Associated Attachment:

Attachment 112-1 Table 1, Analysis of Secondary Impacts on Historic Properties for the Lee Nuclear Site

Attachment 112-1

Analysis of Secondary Impacts on Historic Properties for the Lee Nuclear Site

| No. | Subsection | Impact Description or Activity | Specific Measures and Controls | Analysis of Secondary Impacts |
|-----|-----------------------------|---|--|--|
| 1 | 4.1.1 The Site and Vicinity | Ground-disturbing activities, including grading and recontouring. | Limit ground disturbances to the smallest amount of area necessary to construct and maintain the plants. Use erosion control and stabilization measures to minimize impacts. | Limited to Phase I surveyed and cleared APEs; already assessed in the ER 4.1.3.1. |
| 2 | 4.1.1 | Construction of new buildings and impervious surfaces. | Limit ground disturbances to the smallest amount of area necessary to construct and maintain the plants. Use erosion control and stabilization measures to minimize impacts. | Limited to Phase I surveyed and cleared APEs; already assessed in the ER 4.1.3.1. |
| 3 | 4.1.1 | Removal of existing vegetation | Limit vegetation removal to the area designated for construction activities. | Limited to Phase I surveyed and cleared APEs; already assessed in the ER 4.1.3.1. |
| 4 | 4.1.1 | Stockpiling of soils. | Restrict soil stockpiling and reuse to designated areas on the Lee Nuclear Site. | <p>An on-site Spoils Area for stockpiling soil has been designated. This area lies outside of the APEs already defined, surveyed, and reported on in Revision 0 of the ER. Because this area has not been the subject of a Phase I survey, the impacts of soil stockpiling on historic properties in this area cannot be determined at this time. Duke Energy has plans to consult with the SHPO and the Eastern Band of Cherokee Indians (EBCI) and survey this area. When that is completed, impacts would be assessed.</p> <p>During construction, soil reuse would be confined to designated construction areas with no historic properties (i.e., areas cleared by the SHPO). Therefore, impacts from soil stockpiling and reuse on such properties would be SMALL.</p> |

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Analysis of Secondary Impacts on Historic Properties for the Lee Nuclear Site

| No. | Subsection | Impact Description or Activity | Specific Measures and Controls | Analysis of Secondary Impacts |
|-----|---|--|--|--|
| 5 | 4.1.2 Transmission Corridors and Off-Site Areas | Construction of transmission line in new corridor. | Site new corridor 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. | A Phase I survey in the on-site portion of the transmission line corridor has been completed, and no historic properties were identified within that corridor. Therefore, implementation of the planned ecological protection measures would have no impact on such properties. Impacts would be SMALL. Because a Phase I survey has not been completed in the off-site portion of the transmission line corridor, the impacts from ecological protection measures cannot be assessed at this time. Duke Energy has plans to consult with the SHPO and EBCI and perform a Phase I survey of this area. When that is completed, impacts will be assessed and tracked in the National Historic Preservation Act (Section 106) documentation for the project. |
| 6 | 4.1.3 Historic Properties | Erosion and ground-disturbing activities, including grading and recontouring, and construction of new transmission lines that could affect cultural resources. | Conduct cultural resource surveys, including subsurface sampling prior to initiating ground disturbing activities to identify buried historic, cultural, or paleontological resources. | Phase I surveys include non-harmful pedestrian walkovers of the ground surface and the excavation of small shovel test pits for subsurface sampling. Any form of excavation is considered to be destructive to an intact archaeological site. However, professional archaeologists accept that shovel tests are necessary to determine whether sites have intact deposits that have the potential to yield data; the limited destruction that does occur from shovel tests is outweighed by the scientific information they provide. In addition, during a typical Phase I survey, many shovel test pits never intrude into intact cultural deposits. Therefore, Phase I cultural resource surveys of on-site and off-site APEs for the Lee Nuclear Station are expected to have SMALL impacts on historic properties. |

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Analysis of Secondary Impacts on Historic Properties for the Lee Nuclear Site

| No. | Subsection | Impact Description or Activity | Specific Measures and Controls | Analysis of Secondary Impacts |
|-----|------------------------------|--|--|---|
| 7 | 4.2.2 Hydrologic Alterations | Increased turbidity of Broad River during construction and dredging. | Installation of riprap, stemwalls, etc. to stabilize banks. | Duke Energy plans to place riprap on the bank of the Broad River in the area of the cooling water intake structure to stabilize the banks of the river and embayment from turbidity during construction and dredging (Subsections 4.2.2.1 and 4.2.4.2). A Phase I survey was conducted for the intake area in 2007 (Subsection 2.5.3.1), and no historic properties were found (Subsections 2.5.3.3 through 2.5.3.5). Therefore, impacts from turbidity and dredging on historic properties near the intake structure would be SMALL. There would be only SMALL impacts to downstream historic properties because of the use of such measures. Any increased sedimentation downstream would not adversely impact elements of historic properties. Erosion on-site is not expected to translate to erosion off-site. |
| 8 | 4.2.2 | Increased turbidity of Broad River during construction and dredging. | Dispose of pond dredge soils in an approved county landfill or on-site spoil area. | The Spoils Area on the south side of the site would be used to stockpile dredge spoils. This area is outside of the APEs already defined, surveyed, and reported in Revision 0 of the ER. Because this area has not been the subject of a Phase I survey, the impacts of dredge spoil stockpiling on historic properties in this area cannot be determined at this time. Duke Energy has plans to consult with the SHPO and EBCI and survey this area. When that is completed, impacts would be assessed. |

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Analysis of Secondary Impacts on Historic Properties for the Lee Nuclear Site

| No. | Subsection | Impact Description or Activity | Specific Measures and Controls | Analysis of Secondary Impacts |
|-----|-----------------------------|---|---|--|
| 9 | 4.2.4 Water Quality Impacts | Potential construction of intake and discharge structures, or disposal of dredging wastes or materials. | Install cofferdams or use other standard engineering controls to protect affected water bodies. | Cofferdam construction would generate turbidity in the Broad River in the immediate area of the cooling water intake structure (Subsection 4.3.1.1.2). Riprap would be installed to prevent erosion of the river bank and embayment at this location. A Phase I survey was conducted at the intake structure in 2007, and no historic properties were found. The turbidity from cofferdam construction would be insufficient to destabilize or noticeably alter any important attribute of sturdy downstream historic properties such as the Ninety-Nine Islands Dam and Ninety-Nine Islands Hydroelectric Station. Therefore, the impacts from cofferdam construction would be SMALL at the water intake structure and the dam/hydroelectric station. Because the turbidity would dissipate quickly over distance, it would not be expected to impact any unidentified shoreline historic properties upstream or downstream from the cofferdam. |
| 10 | 4.2.4 | Potential erosion and sediment and stormwater runoff from construction activities into water. | Install stormwater drainage system at construction site and stabilize disturbed soils. Use best management practices to minimize erosion and sedimentation. | Installation of new stormwater drainage and erosion control measures (e.g., barriers such as silt fences) would occur in APEs that the SHPO has cleared for construction, which means that impacts on historic properties would be SMALL. Furthermore, any increase in downstream sedimentation would be insufficient to destabilize or noticeably alter any important attribute of sturdy downstream historic properties such as the Ninety-Nine Islands Dam and Ninety-Nine Islands Hydroelectric Station. Therefore, impacts on these aboveground historic properties would be SMALL. Furthermore, erosion on-site is not expected to translate into erosion off-site, and any increased sedimentation downstream would not adversely impact cultural deposits at any unidentified archaeological sites. |

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Analysis of Secondary Impacts on Historic Properties for the Lee Nuclear Site

| No. | Subsection | Impact Description or Activity | Specific Measures and Controls | Analysis of Secondary Impacts |
|-----|-----------------------------------|--|--|---|
| 11 | 4.3.1 Terrestrial Ecosystems | Loss of vegetation, mostly with low wildlife habitat value and individual wildlife, to land clearing/grading. | Perform revegetation and landscaping with fertilization. | Landscaping and revegetation activities would occur in soil already disturbed by Lee Nuclear Station construction. The SHPO would have already cleared these APEs for construction. No historic properties would be present at such locations, and any temporary increase in downstream or down slope sedimentation from landscaping would not adversely impact any archaeological sites. Therefore, impacts on historic properties would be SMALL. |
| 12 | 4.3.2 Aquatic Ecosystems | Erosion and runoff into nearby water bodies. Potential impacts to surface water from increased sediment load during construction. | Implement erosion and sediment control plans that incorporate recognized best management practices. Install appropriate barriers and use best management practices to protect river prior to construction. | See response to No. 10 (above). |
| 13 | 4.4.1 Physical Impacts | Potential impacts to existing traffic in amount and flow due to construction traffic. Potential for increased traffic accidents due to increased construction traffic. Potential construction accidents. | Post signs near construction entrances and exits to make the public aware of potentially high construction traffic areas. Develop traffic control mitigation plan. | The installation of traffic control signs do not have a large enough impact to qualify as a Section 106 undertaking. Existing roads are considered to be sufficient for the anticipated traffic. If future traffic analyses indicate the need for road widening or any other type of road construction, Duke Energy would consult with the SHPO and EBCI, perform appropriate Phase I survey work, and assess potential impacts on historic properties. |
| 14 | 4.4.1 | Increased 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). | This off-site issue is addressed for "existing" landfills. It is possible that the increased load on a landfill could contribute to its areal expansion at some future time, which could impact any adjacent cultural resources. If such expansions were to be planned, a separate Section 106 review would be implemented at that time, if required by permitting or land jurisdiction. This is beyond the scope of current Section 106 efforts for the Lee Nuclear Station and may be irrelevant given existing landfill lifespan estimates. However, it does represent a potential secondary impact. |
| 15 | 4.4.2 Social and Economic Impacts | Increase in non-recyclable refuse. | Use existing landfills. | See response to No. 13 (above). |