



**Bryan J. Dolan**  
VP, Nuclear Plant Development

Duke Energy  
EC09D/ 526 South Church Street  
Charlotte, NC 28201-1006

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

704-382-0605

Bryan.Dolan@duke-energy.com

July 9, 2010

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

Subject: Duke Energy Carolinas, LLC  
William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019  
AP1000 Combined License Application for the  
William States Lee III Nuclear Station Units 1 and 2  
Response to Request for Additional Information  
Ltr# WLG2010.07-03

Reference: Letter from Sarah Lopas (NRC) to Bryan Dolan (Duke Energy), Request for  
Additional Information Regarding the Supplement to the Environmental Report  
for the William States Lee III Nuclear Station, Units 1 and 2, Combined License  
Application, dated June 22, 2010 (ML101370398)

This letter provides the Duke Energy responses to the Nuclear Regulatory Commission's  
requests for additional information (RAIs) included in the referenced letter.

RAI 132, Alternatives	RAI 161, Ecology - Terrestrial	RAI 192, Site Layout and Plant Description
RAI 135, Cultural Resources	RAI 163, Ecology - Terrestrial	RAI 195, Land Use
RAI 138, Cultural Resources	RAI 165, Ecology - Terrestrial	RAI 198, Non-Radiological Health - Noise
RAI 139, Cultural Resources	RAI 166, Ecology - Terrestrial	RAI 202, Land Use
RAI 144, Ecology - Aquatic	RAI 167, Ecology - Terrestrial	RAI 203, Socioeconomics
RAI 149, Ecology - Aquatic	RAI 168, Ecology - Terrestrial	
RAI 150, Ecology - Aquatic	RAI 170, Ecology - Terrestrial	
RAI 157, Ecology - Terrestrial	RAI 177, Ecology - Terrestrial	
RAI 158, Ecology - Terrestrial	RAI 181, Ecology - Terrestrial	

The responses to the NRC information request described in the referenced letter are addressed in separate enclosures, which also identify associated changes to the Combined License Application for the Lee Nuclear Station, when appropriate.

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

Bryan J. Dolan  
Vice President  
Nuclear Plant Development

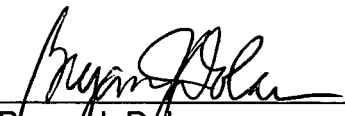
Enclosures:

1. Response to RAI 132, Alternatives
2. Response to RAI 135, Cultural Resources
3. Response to RAI 138, Cultural Resources
4. Response to RAI 139, Cultural Resources
5. Response to RAI 144, Ecology - Aquatic
6. Response to RAI 149, 150, Ecology - Aquatic
7. Response to RAI 157, 161, 163, 165, 167, 168, 170, Ecology - Terrestrial
8. Response to RAI 158, Ecology - Terrestrial
9. Response to RAI 166, Ecology - Terrestrial
10. Response to RAI 177, Ecology - Terrestrial
11. Response to RAI 181, Ecology - Terrestrial
12. Response to RAI 192, Site Layout and Plant Description
13. Response to RAI 195, Land Use
14. Response to RAI 198, Non-Radiological Health - Noise
15. Response to RAI 202, Land Use
16. Response to RAI 203, Socioeconomics

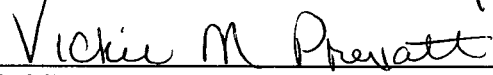


AFFIDAVIT OF BRYAN J. DOLAN

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.

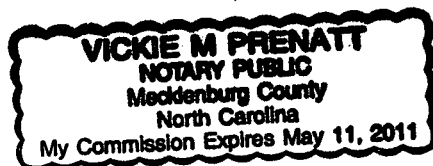
  
Bryan J. Dolan

Subscribed and sworn to me on July 9, 2010

  
Notary Public

My commission expires: May 11, 2011

SEAL



Document Control Desk  
July 9, 2010  
Page 4 of 4

xc (w/o enclosures):

Loren Plisco, Deputy Regional Administrator, Region II  
Jeffrey Cruz, Branch Chief, DNRL  
Robert Schaaf, Branch Chief, DSER

xc (w/ enclosures):

Sarah Lopas, Project Manager, DSER  
Brian Hughes, Senior Project Manager, DNRL

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

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

**Reference NRC RAI Number: ER RAI 132, Alternatives**

**NRC RAI:**

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.

**Duke Energy Response:**

Regardless of the selected alternative, the mitigation approach for all possible alternative sites would be developed in accordance with 33 CFR Part 332.3 and 40 CFR Subpart J, which jointly will be hereafter referred to as the "mitigation rule." The mitigation rule provides an updated, standardized approach to mitigation. According to §332.3 (b)(2) through (6) of the mitigation rule, the district engineer shall consider a mitigation hierarchy that displays an ordered preference for mitigation to be provided through 1) mitigation bank credits, 2) in-lieu fee program credits, 3) permittee responsible mitigation using a watershed approach, 4) permittee responsible mitigation using an on-site and in-kind approach, and 5) permittee responsible mitigation through an off-site and/or out-of-kind approach. This preference hierarchy would be the basis for mitigation planning for any selected alternative. Regardless of the alternative chosen, the specific mitigation planning, approach, and credit requirements would be developed during the Section 404 permitting process and associated coordination with regulatory agencies.

Since three of the four alternative site locations occur within South Carolina, the approach to determining the associated mitigation need, existing credits available from mitigation banks, and the details of the watershed approach would be developed in a manner consistent with the mitigation rule and specific procedures prescribed by the USACE Charleston District (USACE 2006). The fourth alternative, known as the Perkins site, occurs in Davie County, North Carolina. The compensatory mitigation offered for the Perkins site would still be developed in a manner consistent with the mitigation rule, but details relating to the mitigation need, available credits from mitigation banks, and the details of the watershed approach would be identified through coordination with the district engineer for the USACE Wilmington District. Also, since the State of North Carolina has a state-run in-lieu fee program, known as the N.C. Ecosystem Enhancement Program (NCEEP), it is possible that mitigation coordination between Duke Energy and the district engineer would result in a mitigation approach that would include purchase of existing credits from mitigation banks and a payment to the NCEEP for any remaining mitigation needs not satisfied from mitigation banks. Ultimately, it would be up to the discretion of the district engineer in the USACE Wilmington District as to whether permittee responsible mitigation using a watershed approach would be involved for mitigation in North Carolina.

**References:**

USACE. 2006. Compensatory Mitigation Standard Operating Procedures. Dated May 12, 2006. USACE Charleston District.

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

None

**Attachment:**

None

Enclosure 2  
Duke Letter Dated: July 9, 2010

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

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

**Reference NRC RAI Number: ER RAI 135, Cultural Resources**

**NRC RAI:**

Provide all 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, including 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.

Provide clarification on why only one tribe was provided an opportunity to comment on the scope of work for the cultural resources survey for Pond C.

**Duke Energy Response:**

Initial correspondence notifying the various tribes of the development of Make-Up Pond C was submitted to NRC as part of the ER Supplement on Make-Up Pond C (WLG2009.09-05, ML092810255). Subsequent correspondence with the tribes is attached to this response. As noted in the tribal correspondence in Appendix B to the Environmental Report, only the Eastern Band Cherokee Indians expressed any desire to be involved with the review of study plans and reports. The Seminole Tribe of Florida also requested a copy of the Make-Up Pond C cultural resource report.

Also attached to this response are correspondence between Duke Energy and the SC SHPO.

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

None

**Attachments:**

Attachment 135-01 Correspondence with Various Tribes

Attachment 135-02 Correspondence with the SC SHPO

Enclosure 2  
Duke Letter Dated: July 9, 2010

**Attachment 135-01**  
**Correspondence with Various Tribes**



526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC09D/P.O. Box 1006  
Charlotte, NC 28201-1006  
704382-5917

February 6, 2009

Mr. Tyler Howe  
Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
Post Office Box 455  
Cherokee, North Carolina 28719

Dear Mr. Howe,

Subject: William S. Lee III Nuclear Station  
Supplemental Water Source

On June 26, 2006, I wrote the Eastern Band of Cherokee Indians to inform you of Duke Energy's plan to construct and operate the William S. Lee III Nuclear Station in Cherokee County, South Carolina. Since that time, I have provided copies of the following surveys:


Cultural Resources Survey of the Proposed Lee Nuclear Station,  
Cherokee County, South Carolina, August 2007

Cultural Resources Survey of the Lee Nuclear Station Railroad Corridor,  
Cherokee County, South Carolina, January 2008

Duke Energy has determined the need for a supplemental water source to be used during drought conditions for the Lee Nuclear Station. We are investigating an area adjacent to the project site for this new industrial pond. I have attached a drawing that shows the area we are investigating in relation to the existing project site. Please advise me if you are aware of any cultural resources of interest to the Eastern Band of Cherokee Indians in this area. As usual, we will provide you with copies of our survey results.

Please also be advised that the enclosed map is considered confidential by Duke Energy since we are still in negotiations for purchase of the property.

If you have any questions please call me at 704-382-5917.

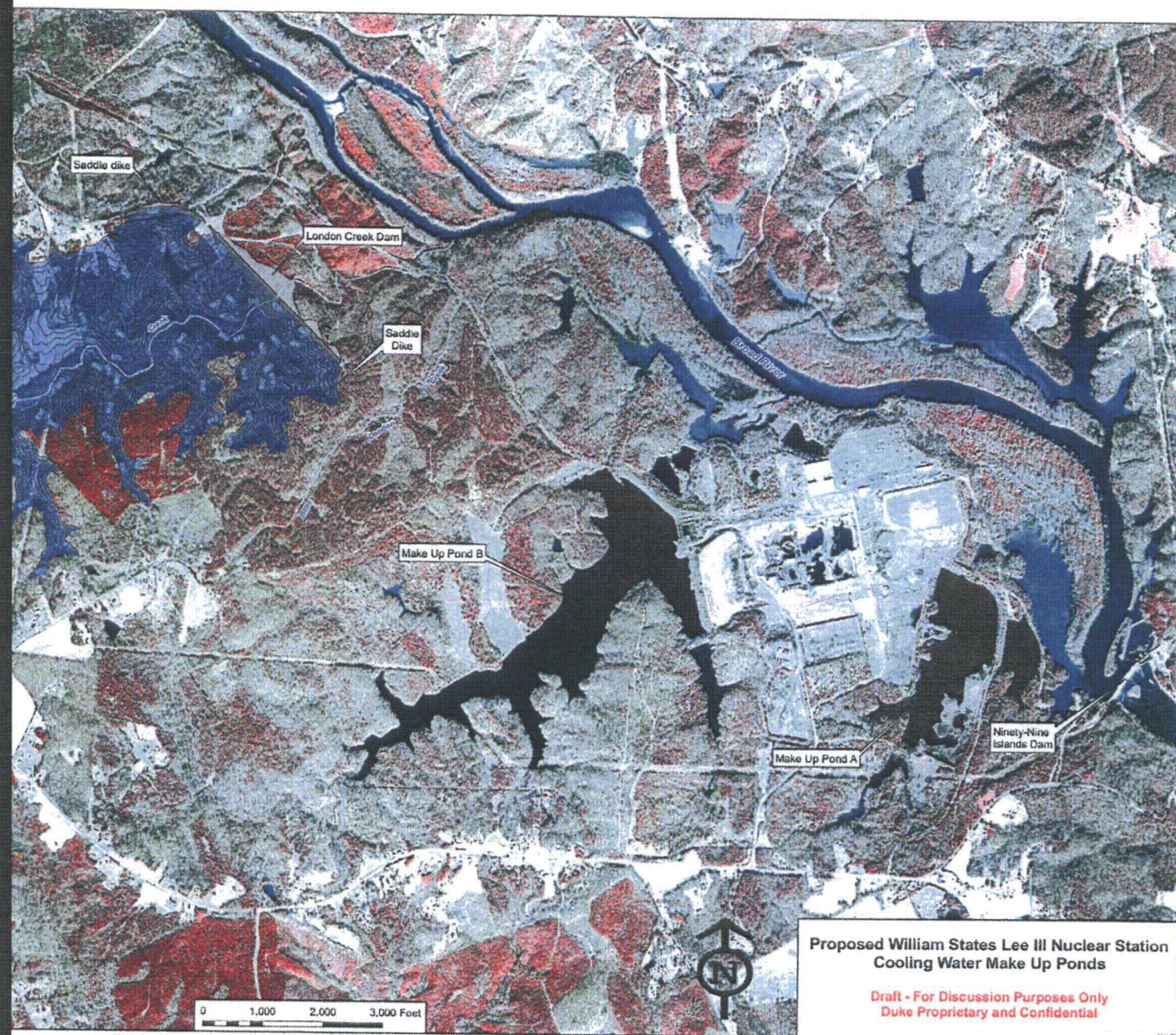
  
Theodore J. Bowling  
Environmental Project Manager

Enclosure: Map of Lee Nuclear Station Cooling Water Make Up Ponds

Mr. Tyler Howe  
February 6, 2009  
Page 2 of 2

xc: Ralph Bailey (Brockington Associates/wo enclosure)  
WL 4000.35-05 (w enclosure)



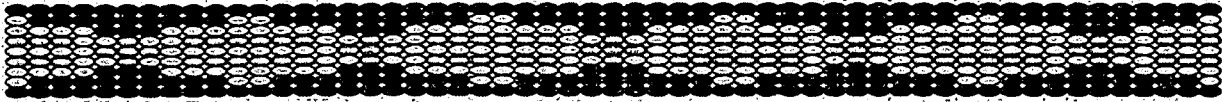


Proposed William States Lee III Nuclear Station  
Cooling Water Make Up Ponds

Draft - For Discussion Purposes Only  
Duke Proprietary and Confidential

Catawba Indian Nation  
Tribal Historic Preservation Office  
1536 Tom Steven Road  
Rock Hill, South Carolina 29730

Office 803-328-2427  
Fax 803-328-5791



16 February 2009

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

Re: THPO # TCNS # Project Description:

Dear Ms. Bevin;

We presently know of no cultural resources of interest to the Catawba THPO in this area of the proposed new cooling pond.

If you have questions please contact Beckee Garris at 803-328-2427 ext. 232, or e-mail [beckeeg@ccppcrafts.com](mailto:beckeeg@ccppcrafts.com).

Sincerely,

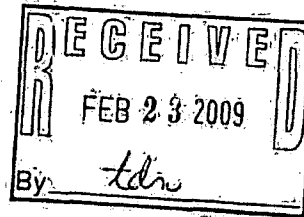
Wenonah G. Haire  
Tribal Historic Preservation Officer

Catawba Indian Nation  
Tribal Historic Preservation Office  
1536 Tom Steven Road  
Rock Hill, South Carolina 29730

Office 803-328-2427  
Fax 803-328-5791

19 February 2009

Attention: Linda M. Tello  
United States Nuclear Regulatory Commission  
Washington, D.C. 20555-0001



*Peter*  
cc: Mr. Bryan J. Dolan, Vice President  
Nuclear Plant Development  
Duke Power Company  
P.O. Box 1006 - EC09D  
Charlotte, NC 28201-1006

Re: THPO # TCNS #  
2009-229-1

Project Description  
Request for additional info regarding the environmental review of the combined li-  
cense application for William States Lee III Nuclear Station, Units 1 and 2

Dear Ms. Tello,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites, or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

We have no concerns or response to your request for additional information (RAI).

If you have questions please contact Beckee Garris at 803-328-2427 ext. 232, or e-mail [beckeeg@ccppcrafts.com](mailto:beckeeg@ccppcrafts.com).

Sincerely,

*Wenonah G. Haire*  
Wenonah G. Haire  
Tribal Historic Preservation Officer





526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC09D/P.O. Box 1008  
Charlotte, NC 28201-1008  
704.382.5917

March 26, 2009

Mr. Tyler Howe  
Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
Post Office Box 455  
Cherokee, North Carolina 28719

Dear Mr. Howe,

Subject: William S. Lee III Nuclear Station  
Supplemental Water Source

On February 6, 2009, I wrote to inform you of Duke Energy's plan to construct a supplemental water source to be used during drought conditions for the W. S. Lee III Nuclear Station. We are investigating an area adjacent to the project site for this new industrial pond. In accordance with your previous requests, I am enclosing a copy of our study plan for this new aspect of the Lee Nuclear Station development for your review and comment.

If you have any questions please call me at 704-382-5917.

Theodore J. Bowling  
Nuclear Plant Development  
Environmental Project Manager

Enclosure:

Cultural Resources Survey of the Proposed London Creek Reservoir  
(Make-up Pond C), Water Pipeline, and Transmission Line Cherokee  
County, South Carolina, Study Plan

cc: (without enclosure)  
Ms. C. Wilson (SC Dept. of Archives and History)



526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC09D/P.O. Box 1006  
Charlotte, NC 28201-1006  
704382-5917

March 30, 2009

Mr. Tyler Howe  
Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
Post Office Box 455  
Cherokee, North Carolina 28719

Dear Mr. Howe,

Subject: William S. Lee III Nuclear Station  
Transmission Line Cultural Resource Survey Plan

In June 2006, Duke Energy wrote the Eastern Band Cherokee Indians (EBCI) to inform you of the proposed William S. Lee III Nuclear Station. Since then we have submitted several study plans and cultural resource survey reports for various aspects of this project.

In December 2007 Duke Energy conducted an extensive siting study to locate two corridors for the 230 kV and 525 kV transmission lines for the Lee Nuclear Station.

We are planning to conduct a Phase I cultural resource survey of the two selected routes for the transmission lines. Enclosed is the study plan for your review. Please provide any comments to me.

If you have any questions please call Randy Veltri at 704-382-2741 me.

Theodore J. Bowling  
Nuclear Plant Development  
Environmental Project Manager

Enclosure:

Cultural Resources Survey of the Proposed William States Lee III  
Nuclear Station 230 kV and 525 kV Transmission Lines, Cherokee  
and Union Counties, South Carolina, Study Plan

cc. (without enclosure)  
Ms. C. Wilson (SC Dept. of Archives and History)

SEMINOLE TRIBE OF FLORIDA  
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC  
PRESERVATION OFFICE  
SEMINOLE TRIBE OF FLORIDA  
AH-TAH-THI-KI MUSEUM  
HC-61, BOX 21A  
CLEWISTON, FL 33440  
PHONE: (863) 983-6549  
FAX: (863) 902-1117



TRIBAL OFFICERS  
CHAIRMAN  
MITCHELL CYPRESS  
VICE CHAIRMAN  
RICHARD BOWERS JR.  
SECRETARY  
PRISCILLA D. SAYEN  
TREASURER  
MICHAEL D. TIGER

Theodore J. Bowling,  
Environmental Project Manager  
EC09D/P.O. Box 1006  
Charlotte, NC 28201-1006

Wednesday, April 08, 2009


**Subject:** Duke Energy plan for supplemental water source for the Lee Nuclear Station, Cherokee County, SC

Dear Mr. Henderson,

The Seminole Tribe of Florida Tribal Historic Preservation Office (STOF-THPO) has reviewed the Duke Energy plan notification for the aforementioned project. Due to the fact that the proposed project is potentially ground disturbing, the STOF-THPO will await copies of associated archaeological reports and/or cultural resources surveys for review prior to making any further comment.

We thank you for notification of these proposed projects. Please reference **THPO-003046** in any future documentation about this project.

Sincerely,

  
FOR

Willard Steele, Tribal Historic Preservation Officer  
Seminole Tribe of Florida

JLP:dh

**Direct routine inquiries to:**

Dawn Hutchins  
Compliance Review Supervisor  
Seminole Tribe of Florida



526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC09D / P.O. Box 1006  
Charlotte, NC 28201-1006  
704382-5917

April 22, 2009

Mr. Tyler Howe  
Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
Post Office Box 455  
Cherokee, North Carolina 28719

Subject: Duke Energy, William S. Lee III Nuclear Station  
Onsite Utility Corridor Cultural Resources Survey

Dear Mr. Howe,

In 2007, Duke Energy submitted *Cultural Resources Survey of the Proposed Lee Nuclear Station, Cherokee County, South Carolina* to the Eastern Band Cherokee Indians, Tribal Historic Preservation Office for review and comment. At that time we had not completed location of several onsite utility corridors. Subsequently, once we identified the corridors, we submitted a cultural resource survey plan to the South Carolina State Historic Preservation Office on October 20, 2008, which the State Historic Preservation Office approved on November 12, 2008.

Enclosed is a draft report providing the results of that survey for your review and comment in accordance with previous agreements with the Tribal Historic Preservation Office.

Please call me if you have any questions.

Sincerely,

Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development

Enclosure:

Cultural Resources Survey of the Lee Nuclear Station Utilities Project

cc: Ms. C. Wilson, SC State Historic Preservation Office (w/o enclosure)



526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC09D / P.O. Box 1006  
Charlotte, NC 28201-1006  
704382-5917

April 22, 2009

Ms. Dawn Hutchins  
Compliance Review Supervisor  
Seminole Tribe of Florida  
Tribal Historic Preservation Office  
Ah-Tah-Thi-Ki Museum  
HC 61, Box 21-A  
Clewiston, FL 33440

Subject: Duke Energy, William S. Lee III Nuclear Station  
Onsite Utility Corridor Cultural Resources Survey  
THPO Project No. 08-CC0116

Dear Ms. Hutchins,

In 2008, Duke Energy submitted *Cultural Resources Survey of the Proposed Lee Nuclear Station, Cherokee County, South Carolina* to the Seminole Tribe of Florida, Tribal Historic Preservation Office for information. At that time we had not completed location of several onsite utility corridors. Subsequently, once we identified the corridors, we submitted a cultural resource survey plan to the South Carolina State Historic Preservation Office on October 20, 2008, which the State Historic Preservation Office approved on November 12, 2008.

Enclosed is a draft report providing the results of that survey for your review and comment in accordance with previous agreements with the Tribal Historic Preservation Office.

Please call me if you have any questions.

Sincerely,

Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development

Enclosure:

Cultural Resources Survey of the Lee Nuclear Station Utilities Project

cc: Ms. C. Wilson, SC State Historic Preservation Office (w/o enclosure)



July 13, 2009

Mr. Tyler Howe  
Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
P. O. Box 455  
Cherokee, North Carolina 28719


Re: Study Plan for the Cultural Resources Survey of the Proposed London Creek Reservoir  
SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, and Spoils Areas,  
Cherokee County, South Carolina.

Dear Mr. Howe:

Mr. Ted Bowling of Duke Energy asked that I contact you to keep you apprised of proposed ongoing cultural resources investigations associated with the proposed London Creek Reservoir (Make-Up Pond C). Enclosed with this letter is the July 9, 2009 correspondence from Brockington and Associates, Inc. to Ms. Caroline Wilson of the South Carolina Department of Archives and History (SCDAH), including our study plan for the cultural resources survey of the proposed London Creek Reservoir SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, and Spoils Areas. Please also note the attached letter/scope of work for the geomorphology investigation of the proposed railroad culvert submitted by Keith C. Seramur, P.G. The study plan is an extension of the study plan for the cultural resources survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, and Transmission Line previously approved by the SCDAH on April 21, 2009. The previous study plan was verbally agreed upon by you and Mr. Ted Bowling in a telephone conversation on April 29, 2009.

Once the survey is complete and a report drafted, a copy will be forwarded to you for your review. If you have any questions or need additional information, please feel free to call me at 843-881-3128 or email me at [joshfletcher@brockington.org](mailto:joshfletcher@brockington.org).

Sincerely,



Josh Fletcher  
Senior Archaeologist

Cc: Mr. Ted Bowling, Duke Energy Carolinas, LLC



Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
P.O. Box 455  
Cherokee, NC 28719  
Ph: 828-554-6852 Fax 828-488-2462

DATE: October 1, 2009

TO: Duke Energy  
Attn: Theodore J. Bowling  
Environmental Project Manager  
EC09D/PO Box 1006  
Charlotte, NC 28201-1006

**PROJECT(s): Comments regarding Cultural Resources Survey of the Proposed William States Lee III Nuclear Station 230kV and 525kV Transmission Lines in Cherokee and Union Counties, SC.**

The Tribal Historic Preservation Office of the Eastern Band of Cherokee Indians would like to thank you for the opportunity to comment on this proposed Section 106 activity under 36 C.F.R. 800.

The EBCI THPO concurs with the archeologist's recommendations that no archeological sites eligible for inclusion on the National Register of Historic Places were encountered during the recent phase I archeological field survey and we understand that site 38CK172 is protected under federal and state burial laws. As such, the EBCI THPO believes that the proposed project may proceed as planned. In the event that project plans change, or cultural resources or human remains are discovered, all work should cease, and this office should be contacted to continue government to government consultation as defined under Section 106 of the National Historic Preservation Act of 1966, as amended.

If we can be of further service, or if you have any comments or questions, please feel free to contact me at (828) 554-6852.

Sincerely,

Tyler Howe  
Tribal Historic Preservation Specialist  
Eastern Band of Cherokee Indians



526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC09D/ P.O. Box 1006  
Charlotte, NC 28201-1006  
704-382-5917

December 17, 2009

Mr. Tyler Howe  
Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
Post Office Box 455  
Cherokee, North Carolina 28719

Dear Mr. Howe,

Subject: William S. Lee III Nuclear Station  
Supplemental Water Source – Cultural Resource Report

On March 26, 2009, I forwarded a copy of our study plan for cultural resource evaluation of a supplemental water source for the W.S. Lee III Nuclear Station. Because of the schedule for acquisition of property, the study is conducted in two phases. Enclosed is the report for the first phase of the study.

If you have any questions please call me at 704-382-5917.

Theodore J. Bowling  
Nuclear Plant Development  
Environmental Project Manager

Enclosure: Cultural Resources Survey of the Proposed London Creek  
Reservoir (Make-up Pond C), Water Pipeline

cc: (without enclosure)  
Ms. C. Wilson (SC Dept. of Archives and History)



526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC09D/P.O. Box 1006  
Charlotte, NC 28201-1006  
704382-5917

December 17, 2009

Ms. Dawn Hutchins  
Compliance Review Supervisor  
Seminole Tribe of Florida  
Tribal Historic Preservation Office  
Ah-Tah-Thi-Ki Museum  
HC 61, Box 21-A  
Clewiston, FL 33440

Dear Ms. Hutchins,

Subject: William S. Lee III Nuclear Station  
Supplemental Water Source  
Reference THPO-002494

On February 6, 2009, I wrote to inform you that Duke Energy planned to construct a supplemental water source for the W.S. Lee III Nuclear Station. On April 8, 2009 you replied requesting a copy of the cultural resources report once it was completed. Because of the schedule for acquisition of property, the study is conducted in two phases. Enclosed is the report for the first phase of the study.

If you have any questions please call me at 704-382-5917.

Theodore J. Bowling  
Environmental Project Manager

Enclosure: Cultural Resources Survey of the Proposed London Creek  
Reservoir (Make-up Pond C) and Water Pipeline

cc: (without enclosure)  
Ms. C. Wilson (SC Dept. of Archives and History)

Ms. Dawn Hutchins  
December 17, 2009  
Page 2 of 2

xc: Ralph Bailey (Brockington Associates/wo enclosure)  
WL 4000.35-05 (w enclosure)



Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
P.O. Box 455  
Cherokee, NC 28719  
Ph: 828-554-6852 Fax: 828-488-2462

DATE: February 12, 2010

TO: Duke Energy  
Mr. Theodore J. Bowling  
Nuclear Plant Development  
Environmental Project Manager  
EC09D/PO Box 4006  
Charlotte, NC 28201-1006

**PROJECT(s):** Comments regarding William S. Lee Nuclear Station Supplemental Water Source-Cultural Resource Survey of the proposed London Creek Reservoir (Make-up Pond C) and Water Pipeline, Cherokee County, SC.

The Tribal Historic Preservation Office of the Eastern Band of Cherokee Indians would like to thank you for the opportunity to comment on this proposed Section 106 activity under 36 C.F.R. 800.

The EBCI THPO concurs with the archeologist's recommendations that no archeological sites eligible for inclusion on the National Register of Historic Places were encountered during the recent phase I archeological field survey. This office recognizes that sites 38CK37-1, 38CK37-2, 38CK37-3 and 38CK42 are potentially eligible, but are outside of the APE, and they should not be impacted. As such, the EBCI THPO believes that the proposed project may proceed as planned. In the event that project plans change, or cultural resources or human remains are discovered, all work should cease, and this office should be contacted to continue government to government consultation as defined under Section 106 of the National Historic Preservation Act of 1966, as amended.

If we can be of further service, or if you have any comments or questions, please feel free to contact me at (828) 554-6852.

Sincerely,

Tyler Howe  
Tribal Historical Preservation Specialist  
Eastern Band of Cherokee Indians

April 14, 2010

Mr. Tyler Howe  
Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
P. O. Box 455  
Cherokee, North Carolina 28719

Re: *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, Railroad Corridor, Transmission Line, SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, Spoils Areas, and Road Widening, Cherokee County, South Carolina. Draft Report.*

Dear Mr. Howe:

Mr. Ted Bowling of Duke Energy asked that we send you one bound copy of the *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, Railroad Corridor, Transmission Line, SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, Spoils Areas, and Road Widening, Cherokee County, South Carolina. Draft Report* for your review. If you have any questions or need additional information, please feel free to call me or Ralph Bailey at 843-881-3128 or email me at [joshfletcher@brockington.org](mailto:joshfletcher@brockington.org). Thank you very much for your assistance with this project.

Sincerely,



Josh Fletcher  
Senior Archaeologist

Encl: -Draft Report: 1 bound copy

Cc: Mr. Ted Bowling, Duke Energy Carolinas, LLC (1 report copy on disk)

April 14, 2010

Ms. Dawn Hutchins  
Compliance Review Supervisor  
Seminole Tribe of Florida  
Tribal Historic Preservation Office  
Ah-Tah-Thi-Ki Museum  
HC 61, Box 21-A  
Clewiston, Florida 33440

Re: *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, Railroad Corridor, Transmission Line, SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, Spoils Areas, and Road Widening, Cherokee County, South Carolina. Draft Report.*

Dear Ms. Hutchins:

Mr. Ted Bowling of Duke Energy asked that we send you one bound copy of the *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, Railroad Corridor, Transmission Line, SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, Spoils Areas, and Road Widening, Cherokee County, South Carolina Draft Report* for your review. If you have any questions or need additional information, please feel free to call me or Ralph Bailey at 843-881-3128 or email me at [joshfletcher@brockington.org](mailto:joshfletcher@brockington.org). Thank you very much for your assistance with this project.

Sincerely,



Josh Fletcher  
Senior Archaeologist

Encl: Draft Report: 1 bound copy

Cc: Mr. Ted Bowling, Duke Energy Carolinas, LLC (1 report copy on disk)



SEMINOLE TRIBE OF FLORIDA  
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC  
PRESERVATION OFFICE  
SEMINOLE TRIBE OF FLORIDA  
AH-TAH-THI-KI MUSEUM  
HC-61, BOX 21-A  
CLEWISTON, FL 33440  
PHONE: (863) 983-6549  
FAX: (863) 902-1117



TRIBAL OFFICERS:  
CHAIRMAN  
MITCHELL CYPRESS  
VICE CHAIRMAN  
RICHARD BOWERS, JR.  
SECRETARY  
PRISCILLA D. SAYEN  
TREASURER  
MICHAEL D. TIGER

Duke Energy  
EC09D/ P.O. Box 1006  
Charlotte, NC 28201-1006  
Attn: Theodore J. Bowling,  
Environmental Project Manager

THPO: 005711

April 29, 2010

**Subject:** Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C)...Draft Report,  
Cherokee County, South Carolina

To Whom It May Concern:

The Seminole Tribe of Florida Tribal Historic Preservation Office (STOF-THPO) has received **Duke Energy's** correspondence concerning the aforementioned project. The STOF-THPO has no objection to your findings at this time. However, the STOF-THPO would like to be informed if cultural resources that are potentially ancestral or historically relevant to the Seminole Tribe of Florida are inadvertently discovered during the construction process. We thank you for the opportunity to review the information that has been sent to date regarding this project. Please reference to **THPO-005711** for any related issues.

We look forward to working with you in the future.

Sincerely,

*Direct routine inquiries to:*

Willard Steele,  
Tribal Historic Preservation Officer  
Seminole Tribe of Florida

Anne Mullins  
Compliance Review Supervisor  
annemullins@semtribe.com

Ah-Tah-Thi-Ki Museum, HC-61, Box 21-A, Clewiston, Florida 33440  
Phone: (863) 902-1113 ♦ Fax: (863) 902-1117



Eastern Band of Cherokee Indians  
Tribal Historic Preservation Office  
P.O. Box 455  
Cherokee, NC 28719  
Ph: 828-554-6852 Fax 828-488-2462

DATE: May 10, 2010

TO: Duke Energy Carolinas, LLC  
Attn: Mr. Ted Bowling  
EC12Y/ PO Box 1006  
Charlotte, NC 28201-1006

**PROJECT(s): Comments regarding Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, Railroad Corridor, Transmission Line, SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, Spoils Areas, and Road Widening, Cherokee County, SC.**

The Tribal Historic Preservation Office of the Eastern Band of Cherokee Indians (EBCI THPO) would like to thank you for the opportunity to comment on this proposed section 106 activity under §36 C.F.R. 800.

The EBCI THPO concurs with the archeologist's recommendations that no sites eligible for inclusion on the National Register of Historic Places were encountered during the recent phase I archaeological field survey. As such, the EBCI THPO believes that the proposed project may proceed as planned. In the event that project plans change, or cultural resources or human remains are discovered, all work should cease, and this office should be contacted to continue government-to-government consultation as defined under Section 106 of the National Historic Preservation Act of 1966, as amended.

If we can be of further service, or if you have any comments or questions, please feel free to contact me at (828) 554-6852.

Sincerely,

Tyler Howe  
Tribal Historical Preservation Specialist  
Eastern Band of Cherokee Indians

Enclosure 2  
Duke Letter Dated: July 9, 2010

**Attachment 135-02**  
**Correspondence with the SC SHPO**

6 February 2009

Chuck Cantley  
South Carolina Department of Archives and History  
8301 Parklane Road  
Columbia, South Carolina 29223

RE: Assessment of the Proposed Wastewater Line, Lee Nuclear Station, Cherokee County,  
South Carolina

Dear Chuck:

As part of the construction of the Lee Nuclear Station, Duke Energy, Carolinas is proposing to build a wastewater line that will extend from the location of the nuclear plant and will discharge along the Ninety-Nine Islands Dam (Resource 0042.01). As part of the Scope of Work we presented to the South Carolina Department of Archives and History for the larger project, we recommended an assessment of the effects of the new wastewater line that will be constructed along the back of the Ninety-Nine Islands Dam (Resource 0042.01). Figure 1 shows the existing dam (left) and proposed discharge facility (right). While this assessment will be formally presented in Brockington's Cultural Resources Report for the project, we wanted to present this information to the South Carolina State Historic Preservation Office (SHPO) early in the process for comment to ensure that we have performed a satisfactory level of effort for the assessment, and if more work is required we can do that before submitting of the report for review. We are requesting that you please review the information below, and provide us any comments on our methodology or assumptions for the assessment of effect for the proposed wastewater line.

In review, Brockington conducted an intensive architectural survey of the Gaston Shoals and Ninety-Nine Islands hydroelectric plants in Cherokee County, South Carolina, in August 2000, and the SHPO determined the site to be eligible for the National Register of Historic Places (NRHP) (Harvey 2001). Because the Ninety-Nine Islands Dam is NRHP eligible, Brockington assessed the effects of the proposed wastewater facility on the resource.

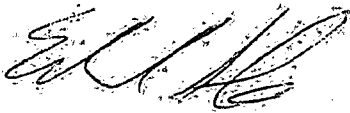
Part of the current proposed undertaking includes the construction of a 36-inch high-density polyethylene (HDPE) wastewater pipe running across the property that will terminate approximately 100 feet south of the dam (see Figure 1). This area was surveyed as a separate part of this cultural resources survey. A 20-by-12-by-8-foot tie-in vault will transfer the wastewater down to a 36-inch HDPE underwater discharge pipe that will be submerged five feet below full pond level and extend along the upriver (west) side of the dam. The pipe will be fastened to the concrete of the existing dam. Figure 2 presents proposed drawings showing how the discharge pipe will be attached to the dam. The construction of the pipeline will occur on the submerged side of the dam and will not affect its integrity. The accumulated silt behind the dam will be dredged as needed prior to installation of the submerged discharge pipe. Figure 1 (right map) shows a temporary cofferdam near the new pipeline. The construction of this dam was planned as a temporary structure to aid in the laying of the pipe in the water; however, the cofferdam will likely not be necessary. Duke Energy is considering the use of divers and a barge to construct the underwater pipeline. If

the cofferdam is used, it is only temporary and will be removed after the pipe is installed. The construction of the cofferdam will not affect Resource 0042.

The pipe will be located under the full pond level, and therefore it will not be visible during normal use. Figure 3 provides a current view of the dam showing the back of the dam at full pond level. Because the proposed pipe will not be visible, we recommend that the construction of the discharge pipe will not have an effect on the Ninety-Nine Islands Dam's integrity of location, design, setting, materials, workmanship, feeling, or association. The Ninety-Nine Islands Hydro-electric Station license requirements stipulate that the water level cannot be more than one foot below full pond, except for conducting maintenance on the dam. It is possible that during maintenance periods the pipe will be visible, but only temporarily.

Again, this information will be formally submitted as part of a larger cultural resources report. If you have any questions, please contact me, and I will assist you in any manner I can. Again, thank you for your comments on this small part of the project.

Sincerely,

A handwritten signature in dark ink, appearing to read 'E. Salo', with a stylized flourish at the end.

Edward Salo  
Project Manager

### Reference Cited

Harvey, Bruce

2001. *An Intensive Architectural Survey of the Gaston Shoals Plant and Ninety-Nine Islands Plant, Cherokee County, South Carolina*. Prepared for Duke Power Company. Brockington and Associates, Inc., Mt. Pleasant, South Carolina.

Figure 1. Plan of the wastewater discharge at Ninety Nine Islands Dam.

Figure 2. Detail plan showing the attachment of the discharge pipe to the dam.

Figure 3. View of the reservoir side of Ninety Nine Islands Dam.



Figure 1. View of the reservoir side of Ninety Nine Islands Dam.

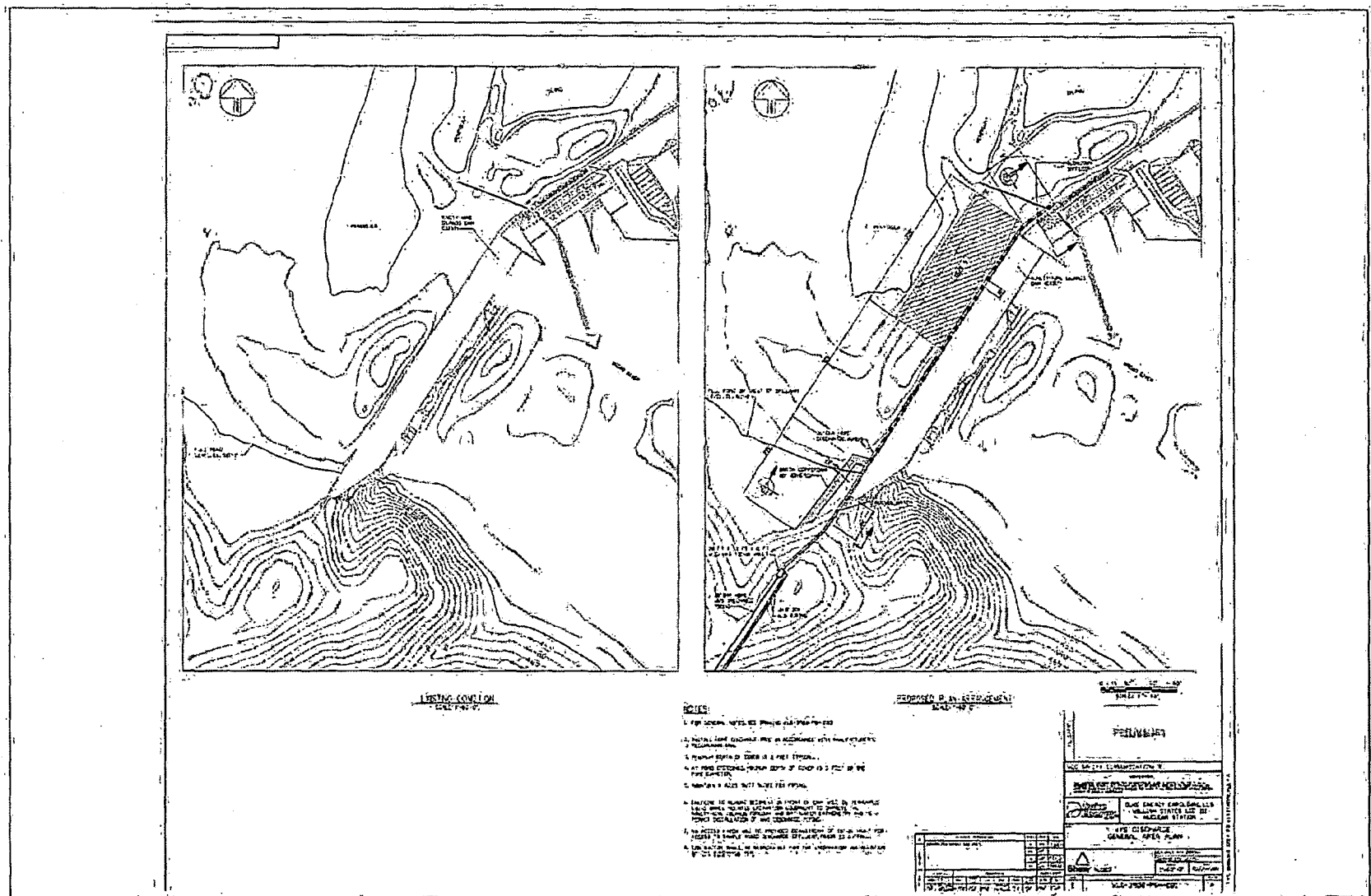


Figure 2. Plan of the waste water discharges at Ninety Nine Islands Dam.



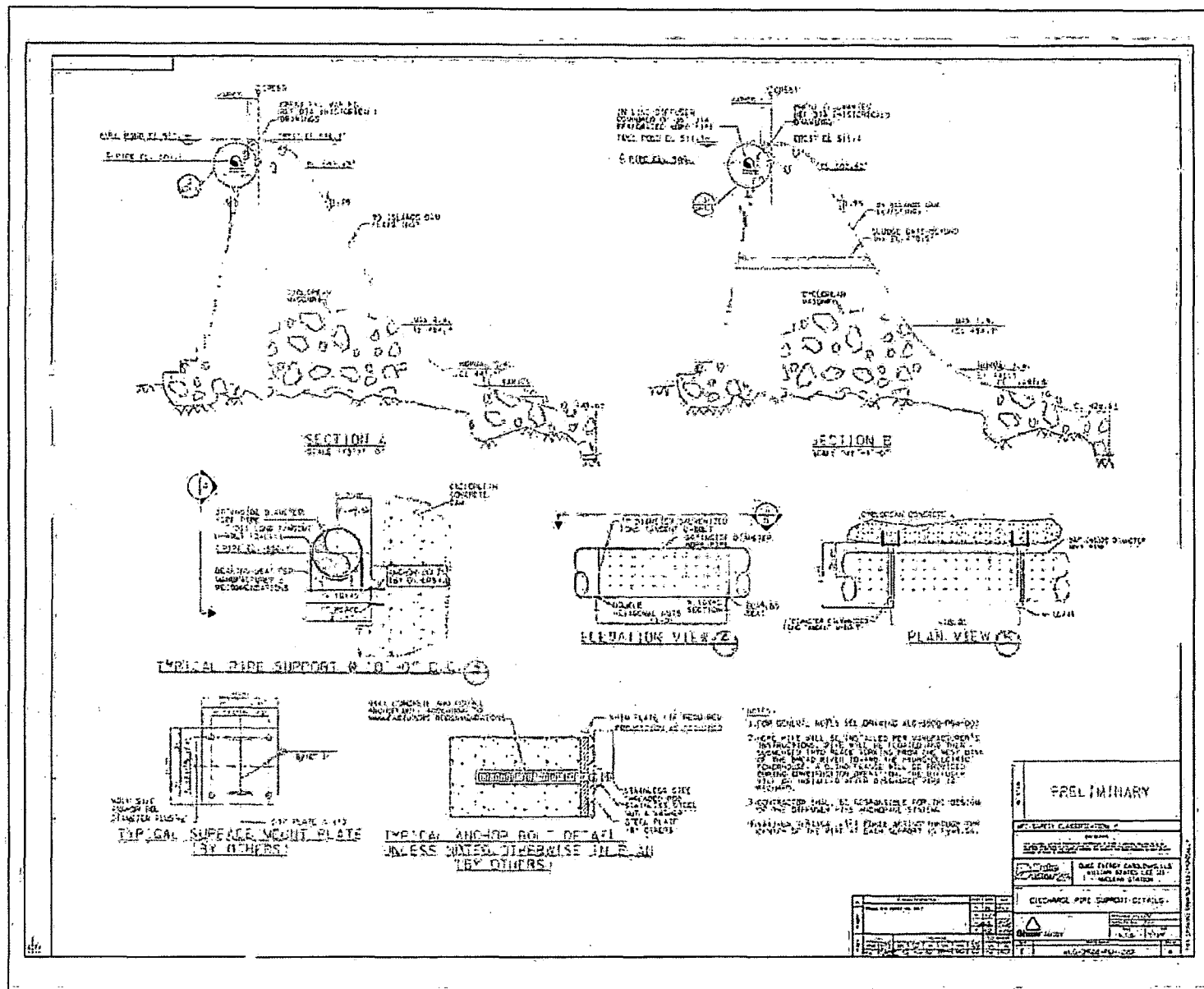


Figure 3: Detail plan showing the attachment of the discharge pipe to the dam..

March 6, 2009



Edward Salo  
Brockington Consulting  
498 Wando Park Boulevard, Suite 700  
Mt. Pleasant, South Carolina 29464

Re: Lee Nuclear Station Proposed Wastewater Line, Cherokee County, SC  
SHPO #: 09CW0091

Dear Mr Salo:

Thank you for your letter of February 6, which we received on February 9, regarding the above referenced project. We also received specifications and photos as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to Federal Energy Regulatory Commission pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800.

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 no properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project.

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



526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC09D/P.O. Box 1006  
Charlotte, NC 28201-1006  
704382-5817

April 22, 2009

Ms. Dawn Hutchins  
Compliance Review Supervisor  
Seminole Tribe of Florida  
Tribal Historic Preservation Office  
Ah-Tah-Thi-Ki Museum  
HC 61, Box 21-A  
Clewiston, FL 33440

Subject: Duke Energy, William S. Lee, III Nuclear Station  
Onsite Utility Corridor Cultural Resources Survey  
THPO Project No. 08-CC0116

Dear Ms. Wilson:

In 2008, Duke Energy submitted *Cultural Resources Survey of the Proposed Lee Nuclear Station, Cherokee County, South Carolina* to the Seminole Tribe of Florida, Tribal Historic Preservation Office for information. At that time we had not completed location of several onsite utility corridors. Subsequently, once we identified the corridors, we submitted a cultural resource survey plan to the South Carolina State Historic Preservation Office on October 20, 2008, which the State Historic Preservation Office approved on November 12, 2008.

Enclosed is a draft report providing the results of that survey for your review and comment in accordance with previous agreements with the Tribal Historic Preservation Office.

Please call me if you have any questions.

Sincerely,

Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development

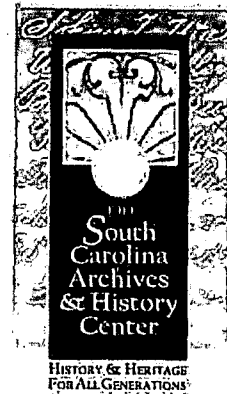
Enclosure

Cultural Resources Survey of the Lee Nuclear Station Utilities Project  
cc. Ms. C. Wilson, SC State Historic Preservation Office (w/o enclosure)

May 14, 2009

SHPO # 06-RD0163

Mr. Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development  
EC09D/PO Box 1006  
Charlotte, NC 28201-1006



Re: Cherokee Nuclear Facility/Lee Nuclear Plant, Cultural Resource Survey of the Lee Nuclear Station  
Utilities Project, Cherokee County, South Carolina

Dear Mr. Bowling:

Thank you for your letter of April 22, 2009, which we received on April 23, 2009, regarding the above-mentioned project. We also received a copy of Brockington and Associates' cultural resources report as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to Duke Energy pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800.

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 no newly discovered archaeological properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project. Also, SHPO concurs with the recommendation that the proposed wastewater line will not have an adverse effect on the Ninety-Nine Islands Dam that is listed in the National Register of Historic Places.

If archaeological materials are encountered during construction, the procedures codified at 36 CFR 800.13(b) will apply. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal and glass objects, and human skeletal materials. The federal agency or the applicant receiving federal assistance should contact our office immediately.

If you have any questions, please contact me at (803) 896-6181 or [ccantley@scdah.state.sc.us](mailto:ccantley@scdah.state.sc.us).

Sincerely,

Chuck Cantley, MA, RPA  
Staff Archaeologist/GIS Coordinator  
State Historic Preservation Office

cc: Ralph Bailey, Brockington and Associates

June 5, 2009

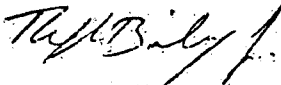
Caroline Wilson  
State Historic Preservation Office  
8301 Parklane Road  
Columbia, South Carolina 29223

Re: WS Lee Nuclear Station On Site Utilities Final Report

Dear Caroline:

I have enclosed 4 bound copies, 1 unbound copy, and 2 electronic copies of the final report for the Lee nuclear plant on site utilities survey in Cherokee County. Thank you for help assistance with this project. Please let me know if you need anything else.

Sincerely,



Ralph Bailey  
Project Manager

cc: Ted Bowling, Duke Energy

June 5, 2009

Ted Bowling  
Duke Energy  
526 S. Church Street  
Charlotte, North Carolina 28202

Re: WS Lee on site utilities cultural resources survey, final reports

Dear Ted:

I have enclosed six paper copies and one electronic copy of the Final Report for the on-site utilities survey. I assume that you will forward the necessary copies to the relevant agencies. If you need me to send additional copies anywhere, please let me know.

Sincerely,

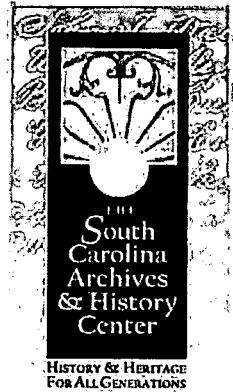


Ralph Bailey  
Project Manager

June 26, 2009

SHPO # 06-RD0163

Mr. Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development  
EC09D/PO Box 1006  
Charlotte, NC 28201-1006



Re: Cherokee Nuclear Facility/Lee Nuclear Plant, Cultural Resource Survey of the Lee Nuclear Station Utilities Project, Cherokee County, South Carolina

Dear Mr. Bowling:

We have received the four bound copies, one unbound copy, and two electronic copies for of the above-mentioned report. This satisfies the number of copies required for distribution. All stipulations regarding this project are completed. These comments are provided to assist you with your responsibility under pertinent state and federal laws. If you have any questions or comments, please contact me at (803) 896-6181 or [ccantley@scdah.state.sc.us](mailto:ccantley@scdah.state.sc.us).

Sincerely,

Chuck Cantley, MA, RPA  
Staff Archaeologist/GIS Coordinator  
State Historic Preservation Office

cc: Ralph Bailey, Brockington and Associates

July 9, 2009

Ms. Caroline Dover Wilson  
South Carolina Department of Archives and History  
State Historic Preservation Office  
8301 Parklane Road  
Columbia, South Carolina 29223

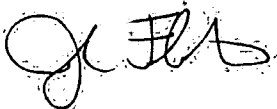
Re: Study Plan for the Cultural Resources Survey of the Proposed London Creek Reservoir  
SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, and Spoils Areas,  
Cherokee County, South Carolina.

Dear Ms. Wilson:

The enclosed study plan provides our approach to conducting the cultural resources survey of the Proposed London Creek Reservoir SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, and Spoils Areas. Please also note the attached letter/scope of work for the geomorphology investigation of the proposed railroad culvert submitted by Keith C. Seramur, P.G. The enclosed study plan is an extension of the previously approved study plan (by your office on April 21, 2009) for the cultural resources survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, and Transmission Line.

We are submitting the enclosed study plan for your review and approval. We are also submitting a copy of the study plan to Mr. Tyler Howe, Tribal Historic Preservation Office, Eastern Band of Cherokee Indians for comment in accordance with previous agreements with him. If you have any questions or need additional information, please feel free to call me at 843-881-3128 or email me at [joshfletcher@brockington.org](mailto:joshfletcher@brockington.org).

Sincerely,



Josh Fletcher  
Senior Archaeologist

Cc: Mr. Chuck Cantley, South Carolina Department of Archives and History  
Mr. Ted Bowling, Duke Energy Carolinas, LLC



July 22, 2009



Mr. Josh Fletcher  
Brockington and Associates  
498 Wando Park Boulevard, Suite 700  
Mt. Pleasant, South Carolina 29464

RE: Study Plan for the Cultural Resources Survey of the Proposed London Creek Reservoir SC 329  
Realignment, Railroad Culvert, Water Pipeline Additions, and Spoil Areas, Cherokee County, SC

Dear Mr. Fletcher:

I have reviewed the above referenced plan and find it acceptable.

These comments are being provided to you to assist you with your responsibilities under state and federal laws. I can be contacted at (803) 896-6181 if you have any questions.

Sincerely,

Chuck Cantley, MA, RPA  
Staff Archaeologist/GIS Coordinator  
State Historic Preservation Office



526 S. Church Street  
Charlotte, NC 28202

Mailing Address:  
EC090 / P.O. Box 1006  
Charlotte, NC 28201-1006

704382-5917

Theodore.Bowling@Duke-Energy.com

September 3, 2009

Ms. Caroline Dover Wilson  
South Carolina Department of Archives and History  
State Historic Preservation Office  
8301 Parklane Road  
Columbia, SC 29223

Subject: Duke Energy, William S. Lee, III Nuclear Station  
230 kV and 525 kV Transmission Line  
SHPO Project No. 09CW0247

Dear Ms. Wilson,

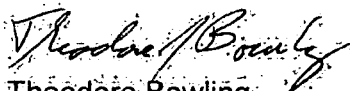
In 2007, Duke Energy submitted *Cultural Resources Survey of the Proposed Lee Nuclear Station, Cherokee County, South Carolina* to the SC Department of Archives and History, State Historic Preservation Office for review and approval. At that time we had not completed location of 230 kV and 525 kV transmission line corridors. Subsequently, once we identified the corridors, we submitted a cultural resource survey plan to the State Historic Preservation Office on March 30, 2009, which the State Historic Preservation Office approved on April 27, 2009.

Enclosed is a draft report providing the results of that survey for your review and comment. Also enclosed are the SCDAH historic properties reporting forms and photographs of the architectural features noted in the draft report.

I am also sending a copy of this report to Mr. Tyler Howe (Eastern Band Cherokee Indians) and Ms. Dawn Hutchins (Seminole Tribe of Florida) in accordance with previous agreements with these Tribal Historic Preservation Offices.

Please call me if you have any questions.

Sincerely,

  
Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development

cc: Mr. C. Cantley

September 3, 2009  
Ms. Caroline Dover Wilson  
Page 2 of 2

*Enclosure:*

1. Cultural Resources Survey of the Lee Nuclear Station 230 kV and 525 kV Transmission Line, Cherokee and Union Counties, South Carolina.
2. SCDAH Statewide Survey of Historic Properties Report forms and Architectural Photographs.



526 S. Church Street  
Charlotte, NC 28202

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

704382-5917

Theodore.Bowling@Duke-Energy.com

September 3, 2009

Ms. Caroline Dover Wilson  
South Carolina Department of Archives and History  
State Historic Preservation Office  
8301 Parklane Road  
Columbia, SC 29223

Subject: Duke Energy, William S. Lee III Nuclear Station  
Supplemental Water Pond

Dear Ms. Wilson,

On March 26, 2009, we submitted the study plan for a cultural resource survey of the area along London Creek that we plan to inundate for a supplemental water pond. The SC Department of Archives and History, State Historic Preservation Office approved the study plan April 21, 2009. As described in the study plan, the survey is being conducted in two phases. We have completed the first phase.

Enclosed is a draft report providing the results of that survey for your review and comment. I am also sending a copy of this report to Mr. Tyler Howe (Eastern Band Cherokee Indians) and Ms. Dawn Hutchins (Seminole Tribe of Florida) in accordance with previous agreements with these Tribal Historic Preservation Offices.

Please call me if you have any questions.

Sincerely,

Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development

Enclosure:

Fletcher, J.N., et al., 2009, *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, and Transmission Line, Cherokee County, South Carolina* [Draft for review]

cc: Mr. C. Cantley

September 23, 2009

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



Re: Duke Energy, William S. Lee III Nuclear Station 230 kV and 525 kV Transmission Line  
SHPO Project # 09-CW0247

Dear Mr. Bowling:

Thank you for your letter of September 3, 2009, which we received on September 4, 2009, regarding the above-referenced undertaking. We also received the cultural resources survey prepared by Archaeological Consultants of the Carolinas, Inc. as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to Duke Energy pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800.

#### *Architectural Survey*

During this survey, two above ground properties were identified. The Reid-Walker-Johnson Farm was identified during this survey and was recommended for listing on the National Register of Historic Places under Criterion C (architecture). Our office concurs with this recommendation. We do believe that the house in its current state is representative of the early twentieth century, and not the mid-nineteenth century as noted in the report. We would like to see additional photos of the property, including the fields behind the house. After reviewing aerial photos, we observed terracing in these areas which is an indication of agricultural cultivation. If terracing is evident, the property boundary would need to be re-drawn to include the fields.

The Reid-Walker-Johnson Farm, along with Smith's Ford Farm, which was previously determined eligible for inclusion on the National Register of Historic Places, are located along Route O. We believe that an adverse effect would be caused to both of these properties if transmission lines were placed along Route O. We understand that there is another proposed route (Route K) that may be used in lieu of Route O. We recommend that Route K be used so that an adverse effect to the Reid-Walker-Johnson Farm and the Smith's Ford Farm will be avoided. Should avoidance not be pursued, we would have to discuss ways to either minimize the effect of this project on the properties, or enter into mitigation.

#### *Archaeological Survey*

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 report's recommendation that no properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project.

While SHPO concurs with the site recommendations, it would like to clarify the concepts of national register criteria and integrity. Properties are determined significant *within their historic*

context for their association with important events (Criterion A) or person (Criterion B), for their importance in design or construction (Criterion C), or for their information potential (Criterion D). They are not determined significant by their integrity. *Integrity is based on significance*: why, where, when, and how a property is important, not vice versa. Only after significance is fully established can one proceed to the issue of integrity. On page four of the report as well as many of the site recommendations, it appears that the authors have elevated integrity to the level of National Register criterion. This is clearly demonstrated in the site evaluations when the authors repeatedly state the sites are not significant based on the amount of post-depositional disturbance that has occurred and the absence of cultural features, instead of arguing that the datasets represented on these sites do not meet the requirements set forth by the four significance criteria. In cases such as these, integrity is not an issue.

SHPO does not automatically exclude sites for inclusion to the National Register based on low density or diversity of artifacts; absence of cultural features; absence of intact soil deposits; namely disturbed by agricultural or forestry related activities; or small site size. If an appropriate level of investigation is performed on a site and the investigation indicates that the site contains datasets capable of contributing important new information at the local or regional level within a historic context, then the site is deemed significant regardless of its content, size, or intactness of soils (see National Register Bulletin *How to Apply the National Register Criteria for Evaluation* (1998) and Bulletin No 36 *Guidelines for Evaluating and Registering Archeological Properties* (2000)). The fact that a site has been plowed or planted in pine trees is not necessarily related to a site's potential to contribute to research (i.e. National Register Criterion D). While it may well be that a particular site can be demonstrated to have little or no research value that decision can legitimately be reached only after two conditions have been met. First, appropriate historic contexts have been developed that allow the assessment of site data within the current body of knowledge. Second, a sufficient amount of fieldwork has been conducted to collect the quantities and kinds of data needed to evaluate the site's research potential within those historic contexts. The authors may want to reconsider the wording used in their recommendations at the end of their site descriptions and make them conform more to the National Park Service Bulletins guidelines mentioned above.

One additional clarification on page four of the report, SHPO does not make determinations of site significance under Section 106 of the NHPA. SHPO recommends to the lead federal agency its assessment of eligibility for districts, sites, buildings, structures, or objects, which can concur with or take exception to, SHPO's recommendation. If the agency concurs with SHPO's recommendation, then the resource is determined eligible by consensus. If the agency and SHPO disagree, then a final determination is made by the Keeper of the National Register.

If you have any questions about archaeology, please contact me at (803) 896-6181 or [ccantley@scdah.state.sc.us](mailto:ccantley@scdah.state.sc.us).

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

Sincerely,

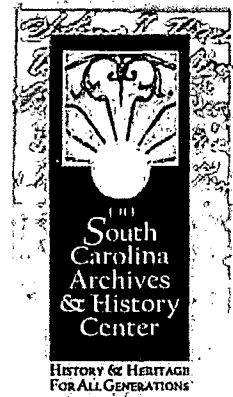


Caroline Wilson  
Review & Compliance Coordinator  
State Historic Preservation Office

September 29, 2009

SHPO #09-CW0462

Mr. Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development  
EC09D/PO Box 1006  
Charlotte, NC 28201-1006



Re: Proposed London Creek Reservoir SC 329 Realignment, Phase I (Lee Nuclear Plant) Cherokee County, South Carolina

Dear Mr. Bowling:

Thank you for your letter of September 3, 2009, which we received on September 4, 2009, regarding the above-mentioned project. We also received a copy of Brockington and Associates' cultural resources report as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to Duke Energy pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800.

Based on the description of the Area of Potential Effect (APE) for Phase I of this project and the identification of historic properties within the Phase I APE, SHPO concurs with the assessment that no archaeological or architectural properties listed in or eligible for listing in the National Register of Historic Places will be adversely affected by this project within the Phase I APE. Also, SHPO concurs with the recommendation for the plans to relocate the Service Family Cemetery (38CK142). SHPO will provide an assessment of effects for all cultural resources occurring within the proposed London Creek Reservoir upon the submittal and review of the Phase II report concerning the geoarchaeological investigation of the London Creek bottomlands, a proposed transmission line corridor, and individual parcels excluded from the Phase I APE.

To successfully conclude the Phase I consultation, SHPO requires hardcopies of the architectural survey cards (on cardstock w/ actual photos). The draft report sent only photocopies. Contact Ms. Caroline Wilson, the Review and Compliance Coordinator, if there are any questions pertaining to the architectural reporting requirements.

If you have any other questions, please contact me at (803) 896-6181 or ccantley@scdah.state.sc.us.

Sincerely,

Chuck Cantley, MA, RPA  
Staff Archaeologist/GIS Coordinator  
State Historic Preservation Office

cc: Ralph Bailey, Brockington and Associates

October 8, 2009

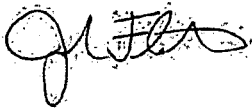
Chuck Cantley  
South Carolina Department of Archives and History  
8301 Parklane Road  
Columbia, South Carolina 29223

Re: *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C) and Water Pipeline, Cherokee County, South Carolina. Final Report.*

Dear Mr. Cantley:

Enclosed are four bound copies, one unbound copy, and two copies on disk of the *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C) and Water Pipeline, Cherokee County, South Carolina. Final Report*, as well as the architectural survey cards for this project. If you have any questions or need information at any time, please feel free to contact me or Ralph Bailey at 843-881-3128. Thank you very much for your assistance with this project.

Sincerely,



Josh Fletcher  
Senior Archaeologist

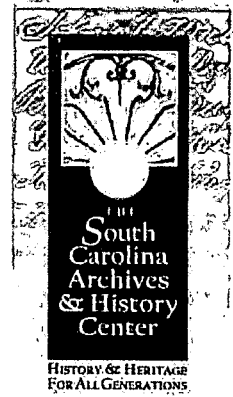
Encl: Final Report: four bound copies, one unbound copy, and two copies on disk  
Architectural survey cards

Cc: Mr. Ted Bowling, Duke Energy Carolinas, LLC



October 20, 2009

SHPO # 09-CW0462



Mr. Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development  
EC09D/PO Box 1006  
Charlotte, NC 28201-1006

Re: Phase I (Interim Report) on the Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C) and Water Pipeline, Cherokee County, South Carolina

Dear Mr. Bowling:

We have received the architectural survey cards, four bound copies, one unbound copy, and two electronic copies for of the above-mentioned report. This satisfies the number of copies required for distribution. SHPO looks forward to the Phase II report which will include the remainder of the land within the proposed reservoir and a proposed transmission line, as well as the results of the geomorphological investigations of the floodplain and terraces along London Creek.

These comments are provided to assist you with your responsibility under pertinent state and federal laws. If you have any questions or comments, please contact me at (803) 896-6181 or [ccantley@scdah.state.sc.us](mailto:ccantley@scdah.state.sc.us).

Sincerely,

A handwritten signature in cursive script that reads "Chuck Cantley".

Chuck Cantley, MA, RPA  
Staff Archaeologist/GIS Coordinator  
State Historic Preservation Office

cc: Josh Fletcher, Brockington and Associates

April 14, 2010

Chuck Cantley  
South Carolina Department of Archives and History  
8301 Parklane Road  
Columbia, South Carolina 29223

Re: *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, Railroad Corridor, Transmission Line, SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, Spoils Areas, and Road Widening, Cherokee County, South Carolina. Draft Report.*

Dear Mr. Cantley:

Enclosed are two bound copies of the *Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C), Water Pipeline, Railroad Corridor, Transmission Line, SC 329 Realignment, Railroad Culvert, Water Pipeline Additions, Spoils Areas, and Road Widening, Cherokee County, South Carolina* Draft Report for your review. If you have any questions or need information at any time, please feel free to contact me or Ralph Bailey at 843-881-3128. Thank you very much for your assistance with this project.

Sincerely,



Josh Fletcher  
Senior Archaeologist

Encl: -Draft Report: 2 bound copies

Cc: Mr. Ted Bowling, Duke Energy Carolinas, LLC (1 report copy on disk)



526 S. Church Street  
Charlotte, NC 28202

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

704382-5917

Theodore.Bowling@Duke-Energy.com

April 29, 2010

Ms. Caroline Dover Wilson  
South Carolina Department of Archives and History  
State Historic Preservation Office  
8301 Parklane Road  
Columbia, SC 29223

Subject: Duke Energy, William S. Lee III Nuclear Station  
230 kV and 525 kV Transmission Line  
Visual Effects Evaluation  
SHPO Project No. 09-CW0247

Dear Ms. Wilson,

On September 3, 2009 Duke Energy submitted *Cultural Resources Survey of the Lee Nuclear Station 230 kV and 525 kV Transmission Line, Cherokee and Union Counties, South Carolina* to the SC Department of Archives and History, State Historic Preservation Office for review and approval. In your comments to that report (September 23, 2009 letter from C. Wilson to T. Bowling) you indicated concerns over potential visual effects of the transmission line on two properties eligible for listing in the NRHP. In response to those concerns, we met with you on November 2, 2009 to discuss a proposed study to evaluate the potential for visual impacts from the transmission line.

Enclosed is a draft report providing the results of that evaluation for your review and comment. We would be happy to meet with you at your offices to answer any questions or discuss any further concerns.

Please call me if you have any questions.

Sincerely,

Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development

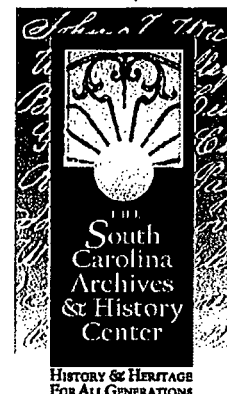
cc. Mr. C. Cantley

April 29, 2010  
Ms. Caroline Dover Wilson  
Page 2 of 2

Enclosure:

*Probable Visual Effects Analysis associated with the W.S. Lee 230 kV and 525 kV Fold-In Lines within the viewsheds of the Reid-Walker-Johnson Farm and Smith's Ford Farm*

May 18, 2010



Josh Fletcher  
Brockington & Associates  
498 Wando Park Boulevard, Suite 700  
Mt. Pleasant, South Carolina 29464

Re: Cultural Resources Survey of the Proposed London Creek Reservoir (Make-up Pond C),  
Water Pipeline, Railroad Corridor, Transmission Line, SC 329 Realignment, Railroad  
Culvert, Water Pipeline Additions, Spoil Areas, and Road Widening  
Cherokee County, SC  
SHPO #: 09CW0462

Dear Mr. Fletcher:

Thank you for the draft report which we received on April 15, regarding the above referenced project. 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.

Based on the description of the Area of Potential Effect (APE) for the project and the identification of historic properties within the APE, SHPO concurs with the assessment that no historical properties listed in or eligible for listing in the National Register of Historic Places will be adversely affected by this project. Also, SHPO concurs with the recommendation for the plans to relocate the Service Family Cemetery (38CK142).

Our office is reviewed the eligibility of the Cherokee Falls Mill Village, as proposed in the survey. We have determined that the village is not eligible for listing on the National Register of Historic Places.

If archaeological materials are encountered during construction, the procedures codified at 36 CFR 800.13(b) will apply. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal and glass objects, and human skeletal materials. The federal agency or the applicant receiving federal assistance should contact our office immediately.

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 138, Cultural Resources**

**NRC RAI:**

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.

**Duke Energy Response:**

Page 101 of Archaeological Consultants of the Carolinas' Cultural Resource Survey (response to RAI-119 Supplement B dated September 23, 2009, ML092710471) documents that visibility of the proposed transmission lines from the Ninety-Nine Islands Hydro Plant and Dam will not affect the historic resources of the Plant and Dam. By letter dated September 23, 2009 (Attachment 138-1), the South Carolina State Historic Preservation Office (SC SHPO) took no exception to the above conclusion regarding the Ninety- Nine Islands Hydro Plant and Dam. SC SHPO, in the same letter, did express concern about visual impacts of the transmission line on the Reid-Walker-Johnson Farm and the Smith's Ford Farm. As such, Duke Energy conducted a visual assessment of the transmission line as would be seen from the Reid-Walker-Johnson Farm and the Smith's Ford Farm (Attachments 138-2 and 138-3). The SC SHPO concurred that the assessment demonstrated there would be no adverse effect from the transmission line on the Reid-Walker-Johnson and Smith's Ford Farms (Attachment 138-4).

The transmission line would span 38CK172 and there would be no ground disturbance to the site.

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

None

**Attachments:**

- Attachment 138-1 Wilson, C.D. letter to T. Bowling, Duke Energy, William S. Lee III Nuclear Station 230 kV and 525 kV Transmission Line, SHPO Project # 09-CW0247, September 23, 2009.
- Attachment 138-2 Bowling, T. letter to C. Wilson, Duke Energy, William S. Lee III Nuclear Station 230 kV and 525 kV Transmission Line Visual Effects Evaluation, SHPO Project No. 09-CW0247, April 29, 2010.
- Attachment 138-3 Pike Electric, 2010, Probable Visual Effects Analysis Associated with the W.S. Lee 230 kV and 525 kV Fold-in Lines Within the Viewsheds of the Reid-Walker-Johnson Farm and Smith's Ford Farm, March 2010.
- Attachment 138-4 Wilson, C.D. letter to T. Bowling, Lee Nuclear Transmission Line Visual Survey, Cherokee County, SC, SHPO #: 09-CW0247, May 27, 2010.

Enclosure 3

Duke Letter Dated: July 9, 2010

**Attachment 138-1**

**Wilson, C.D. letter to T. Bowling, Duke Energy, William S. Lee III Nuclear Station 230 kV  
and 525 kV Transmission Line, SHPO Project # 09-CW0247, September 23, 2009**

September 23, 2009

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



Re: Duke Energy, William S. Lee III Nuclear Station 230 kV and 525 kV Transmission Line  
SHPO Project # 09-CW0247

Dear Mr. Bowling:

Thank you for your letter of September 3, 2009, which we received on September 4, 2009, regarding the above-referenced undertaking. We also received the cultural resources survey prepared by Archaeological Consultants of the Carolinas, Inc. as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to Duke Energy pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800.

*Architectural Survey*

During this survey, two above ground properties were identified. The Reid-Walker-Johnson Farm was identified during this survey and was recommended for listing on the National Register of Historic Places under Criterion C (architecture). Our office concurs with this recommendation. We do believe that the house in its current state is representative of the early twentieth century, and not the mid-nineteenth century as noted in the report. We would like to see additional photos of the property, including the fields behind the house. After reviewing aerial photos, we observed terracing in these areas which is an indication of agricultural cultivation. If terracing is evident, the property boundary would need to be re-drawn to include the fields.

The Reid-Walker-Johnson Farm, along with Smith's Ford Farm, which was previously determined eligible for inclusion on the National Register of Historic Places, are located along Route O. We believe that an **adverse effect** would be caused to both of these properties if transmission lines were placed along Route O. We understand that there is another proposed route (Route K) that may be used in lieu of Route O. We recommend that Route K be used so that an adverse effect to the Reid-Walker-Johnson Farm and the Smith's Ford Farm will be avoided. Should avoidance not be pursued, we would have to discuss ways to either minimize the effect of this project on the properties, or enter into mitigation.

*Archaeological Survey*

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 report's recommendation that no properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project.

While SHPO concurs with the site recommendations, it would like to clarify the concepts of national register criteria and integrity. Properties are determined significant *within their historic*



context for their association with important events (Criterion A) or person (Criterion B), for their importance in design or construction (Criterion C), or for their information potential (Criterion D). They are not determined significant by their integrity. *Integrity is based on significance:* why, where, when, and how a property is important, not vice versa. Only after significance is fully established can one proceed to the issue of integrity. On page four of the report as well as many of the site recommendations; it appears that the authors have elevated integrity to the level of National Register criterion. This is clearly demonstrated in the site evaluations when the authors repeatedly state the sites are not significant based on the amount of post-depositional disturbance that has occurred and the absence of cultural features, instead of arguing that the datasets represented on these sites do not meet the requirements set forth by the four significance criteria. In cases such as these, integrity is not an issue.

SHPO does not automatically exclude sites for inclusion to the National Register based on low density or diversity of artifacts; absence of cultural features; absence of intact soil deposits, namely disturbed by agricultural or forestry related activities; or small site size. If an appropriate level of investigation is performed on a site and the investigation indicates that the site contains datasets capable of contributing important new information at the local or regional level within a historic context, then the site is deemed significant regardless of its content, size, or intactness of soils (see National Register Bulletin *How to Apply the National Register Criteria for Evaluation* (1998) and Bulletin No 36 *Guidelines for Evaluating and Registering Archeological Properties* (2000)). The fact that a site has been plowed or planted in pine trees is not necessarily related to a site's potential to contribute to research (i.e. National Register Criterion D). While it may well be that a particular site can be demonstrated to have little or no research value that decision can legitimately be reached only after two conditions have been met. First, appropriate historic contexts have been developed that allow the assessment of site data within the current body of knowledge. Second, a sufficient amount of fieldwork has been conducted to collect the quantities and kinds of data needed to evaluate the site's research potential within those historic contexts. The authors may want to reconsider the wording used in their recommendations at the end of their site descriptions and make them conform more to the National Park Service Bulletins guidelines mentioned above.

One additional clarification on page four of the report, SHPO does not make determinations of site significance under Section 106 of the NHPA. SHPO recommends to the lead federal agency its assessment of eligibility for districts, sites, buildings, structures, or objects, which can concur with or take exception to, SHPO's recommendation. If the agency concurs with SHPO's recommendation, then the resource is determined eligible by consensus. If the agency and SHPO disagree, then a final determination is made by the Keeper of the National Register.

If you have any questions about archaeology, please contact me at (803) 896-6181 or [ccantley@scdah.state.sc.us](mailto:ccantley@scdah.state.sc.us).

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

Sincerely,



Caroline Wilson  
Review & Compliance Coordinator  
State Historic Preservation Office

Enclosure 3  
Duke Letter Dated: July 9, 2010

**Attachment 138-2**

**Bowling, T. letter to C. Wilson, Duke Energy, William S. Lee III Nuclear Station 230 kV  
and 525 kV Transmission Line Visual Effects Evaluation, SHPO Project No. 09-CW0247,  
April 29, 2010**



526 S. Church Street  
Charlotte, NC 28202

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

704382-5917

Theodore.Bowling@Duke-Energy.com

April 29, 2010

Ms. Caroline Dover Wilson  
South Carolina Department of Archives and History  
State Historic Preservation Office  
8301 Parklane Road  
Columbia, SC 29223

Subject: Duke Energy, William S. Lee III Nuclear Station  
230 kV and 525 kV Transmission Line  
Visual Effects Evaluation  
SHPO Project No. 09-CW0247

Dear Ms. Wilson,

On September 3, 2009 Duke Energy submitted *Cultural Resources Survey of the Lee Nuclear Station 230 kV and 525 kV Transmission Line, Cherokee and Union Counties, South Carolina* to the SC Department of Archives and History, State Historic Preservation Office for review and approval. In your comments to that report (September 23, 2009 letter from C. Wilson to T. Bowling) you indicated concerns over potential visual effects of the transmission line on two properties eligible for listing in the NRHP. In response to those concerns, we met with you on November 2, 2009 to discuss a proposed study to evaluate the potential for visual impacts from the transmission line.

Enclosed is a draft report providing the results of that evaluation for your review and comment. We would be happy to meet with you at your offices to answer any questions or discuss any further concerns.

Please call me if you have any questions.

Sincerely,

Theodore Bowling  
Environmental Project Manager  
Nuclear Plant Development

cc. Mr. C. Cantley

April 29, 2010

Ms. Caroline Dover-Wilson

Page 2 of 2

Enclosure:

*Probable Visual Effects Analysis associated with the W.S. Lee 230 kV and 525 kV Fold-In Lines within the viewsheds of the Reid-Walker-Johnson Farm and Smith's Ford Farm*

Enclosure 3  
Duke Letter Dated: July 9, 2010

**Attachment 138-3**

**Pike Electric, 2010, Probable Visual Effects Analysis Associated with the W.S. Lee 230 kV  
and 525 kV Fold-in Lines Within the Viewsheds of the Reid-Walker-Johnson Farm and  
Smith's Ford Farm, March 2010**



---

***Probable Visual Effects Analysis***  
*associated with the*  
***W.S. Lee 230 kV and 525 kV Fold-In Lines***  
*within the viewsheds of the*  
***Reid-Walker-Johnson Farm and Smith's Ford Farm***

*March 2010*

*Prepared By*  
***PIKE ELECTRIC, INC.***  
***Facilities Planning & Siting Division***  
***10101 Claude Freeman Dr***  
***Suite 100-W***  
***Charlotte, NC 28262***  
***704.510.3156***

## **Table of Contents**

### **Executive Summary**

#### **Section 1: Introduction and Background Information**

#### **Section 2: Consideration of Cultural Resources When Siting the W.S. Lee Fold-In Lines**

#### **Section 3: Intensive Cultural Resource Investigation Along the Selected Routes**

#### **Section 4: Completion of a Probable Visual Effects Analysis**

##### **4.1 Initial Field Investigation**

##### **4.1.1 Reid-Walker-Johnson Farm Investigation Findings**

##### **4.1.2 Smith's Ford Farm Investigation Findings**

##### **4.2 Development of a Seen Area Analysis Model**

##### **4.3 Second Field Investigation Using the Seen Area Analysis Model to Identify Viewpoints**

##### **4.4 Preparation of Computer Generated Terrain Models**

##### **4.5 Development of Photographic Simulations**

#### **Section 5: Conclusions**

#### **Section 6: An Explanation Regarding the Correct View Distance To Figures and Photographs Included in Appendix A**

### **Appendix A: Figures**

A-1 W.S. Lee 525 kV Fold-In Line Selected Route O Proximity to the Reid-Walker-Johnson Farm

A-2 W.S. Lee 230 kV and 525 kV Fold-In Lines Selected Route O Proximity to the Smith's Ford Farm

A-3 Seen Area Analysis Model: Reid-Walker-Johnson Farm

A-4.1 Existing Conditions Photograph  
Viewpoint 1: Reid-Walker-Johnson Farm

A-4.2 Computer Generated Terrain Model  
Viewpoint 1: Reid-Walker-Johnson Farm

A-5.1 Existing Conditions Photograph  
Viewpoint 2: Reid-Walker-Johnson Farm

A-5.2 Computer Generated Terrain Model  
Viewpoint 2: Reid-Walker-Johnson Farm

A-6.1 Existing Conditions Photograph  
Viewpoint 3: Reid-Walker-Johnson Farm

- A-6.2 Computer Generated Terrain Model  
Viewpoint 3: Reid-Walker-Johnson Farm
- A-7.1 Exiting Conditions Photograph  
Viewpoint 4: Reid-Walker-Johnson Farm
- A-7.2 Computer Generated Terrain Model  
Viewpoint 4: Reid-Walker-Johnson Farm
- A-8.1 Exiting Conditions Photograph  
Viewpoint 5: Reid-Walker-Johnson Farm
- A-8.2 Computer Generated Terrain Model  
Viewpoint 5: Reid-Walker-Johnson Farm
- A-8.3 Photographic Simulation  
Viewpoint 5: Reid-Walker-Johnson Farm
- A-9.1 Exiting Conditions Photograph  
Viewpoint 6: Reid-Walker-Johnson Farm
- A-9.2 Computer Generated Terrain Model  
Viewpoint 6: Reid-Walker-Johnson Farm
- A-10.1 Exiting Conditions Photograph  
Viewpoint 7: Reid-Walker-Johnson Farm
- A-10.2 Computer Generated Terrain Model  
Viewpoint 7: Reid-Walker-Johnson Farm
- A-10.3 Photographic Simulation  
Viewpoint 7: Reid-Walker-Johnson Farm
- A-11.1 Exiting Conditions Photograph  
Viewpoint 8: Reid-Walker-Johnson Farm
- A-11.2 Computer Generated Terrain Model  
Viewpoint 8: Reid-Walker-Johnson Farm
- A-12.1 Exiting Conditions Photograph  
Viewpoint 9: Smith's Ford Farm
- A-12.2 Computer Generated Terrain Model  
Viewpoint 9: Smith's Ford Farm



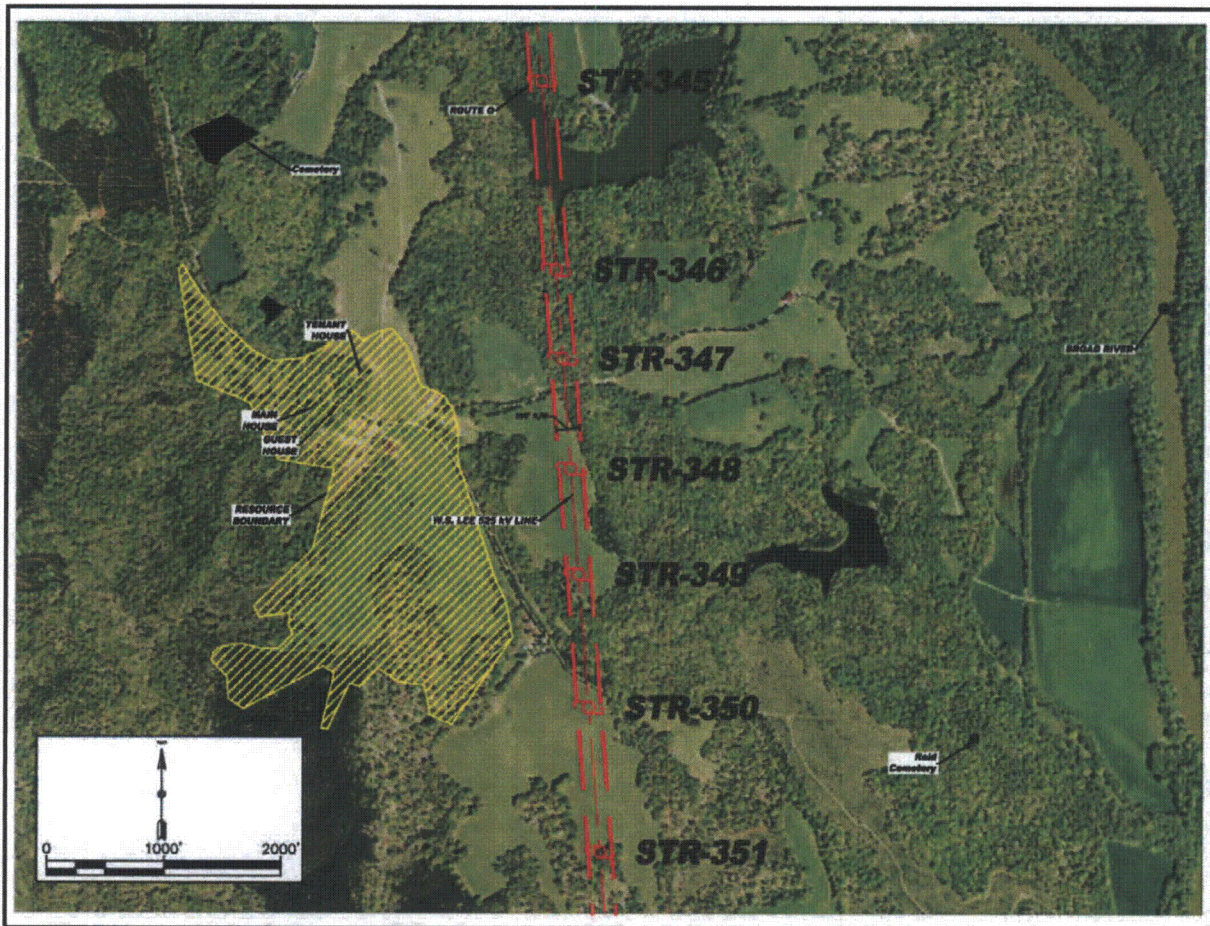
**Duke Energy Carolinas, LLC**  
**Probable Visual Effects Analysis**  
*associated with the*  
**W.S. Lee 230 kV and 525 kV Fold-In Lines**  
*within the viewsheds of the*  
**Reid-Walker-Johnson Farm and Smith's Ford Farm**

**Executive Summary**

During an intensive cultural resources investigation along the surveyed line routes, selected Routes K and O, for the future W.S. Lee 230 kV and 525 kV Lines in Union and Cherokee Counties, SC, Archaeological Consultants of the Carolinas, Inc. ("ACC"), on behalf of Duke Energy Carolinas, LLC, identified two previously recorded resources classified as "Eligible" for the National Register of Historic Places ("NRHP") within the Area of Potential Effects ("APE") associated with the future transmission lines, which is a one-mile wide corridor surrounding the future transmission lines. The two resources are the Ninety-Nine Islands Hydro Plant and Dam and the Smith's Ford Farm (ACC 2009).

Additionally, ACC completed an architectural survey within the APE of the two selected routes and identified two (2) additional resources they deemed to be Eligible for the NRHP. These two resources include the Reid-Walker-Johnson Farm and the associated Pleasant Grove Cemetery along Route O. ACC also cited an "Eligible" historic resource beyond the APE, the Reid Cemetery, which is on the Reid-Walker-Johnson Farm property. ACC defined the farm resource to include three residential structures and associated ancillary buildings (barns, sheds, and other farm buildings), all of which reside within a "*proposed historic boundary*" ACC delineated to include the viewshed and terraced fields adjacent to the area where the structures reside. The two cemeteries on the Reid-Walker-Johnson Farm property are located in wooded areas and not within the proposed historic boundary. ACC concluded that the three resources associated with the Reid-Walker-Johnson Farm will not be directly affected by the W.S. Lee 525 kV Line along Route O (the W.S. Lee 230 kV Fold-In Line does not cross the property) and that indirect impacts (i.e., viewshed modifications) will be unlikely due to screening of the future line that will be afforded by existing stands of trees. Selected Route K is not in the vicinity of the Reid-Walker-Johnson Farm (ACC 2009).

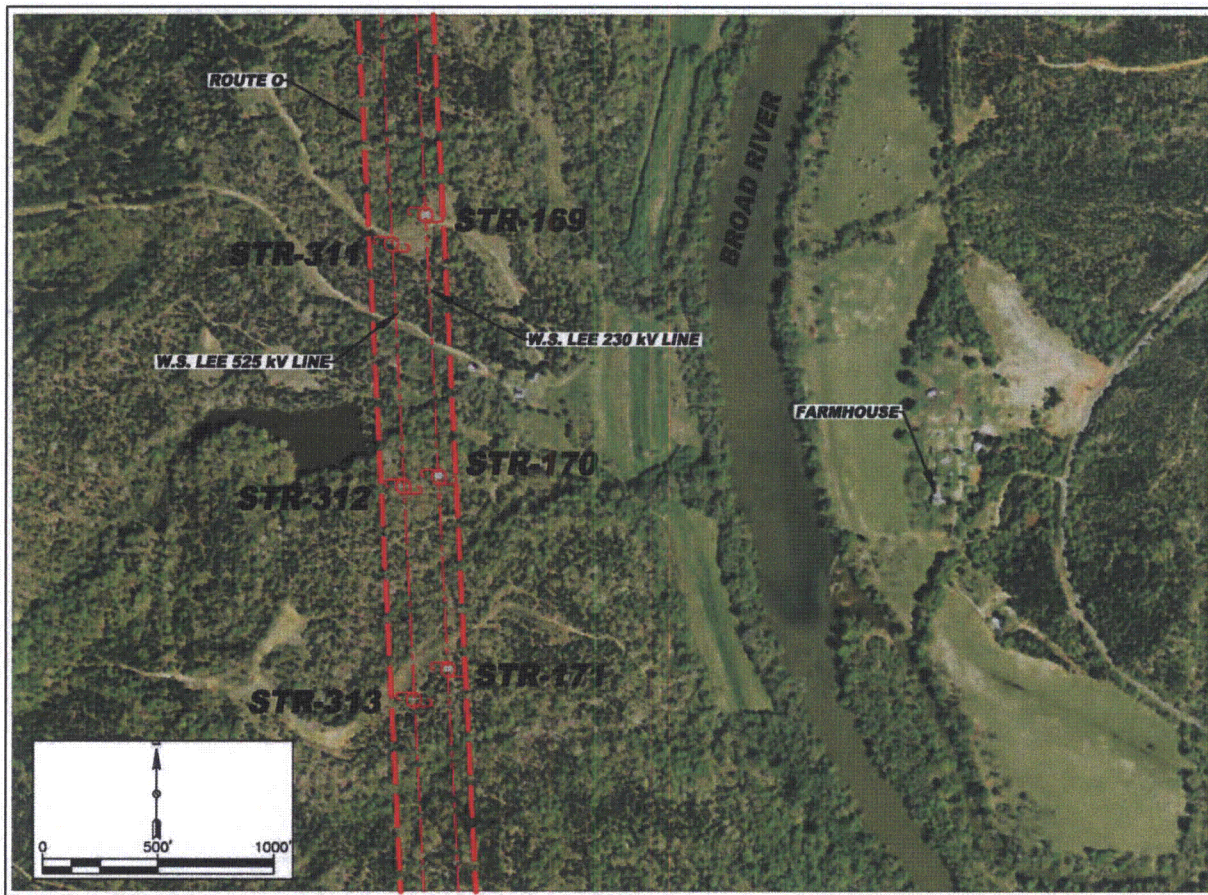
Figure ES 1 shows the Reid-Walker-Johnson Farm (the proposed historic boundary and two cemeteries) in relation to Route O.



**Figure ES 1: Reid-Walker-Johnson Farm in Relation to Route O**

With regard to the Smith's Ford Farm, ACC determined that careful placement of transmission structures associated with the W.S. Lee 230 kV and 525 kV Fold-In Lines would result in a finding of "No Adverse Effect" with regard to viewshed modifications in a western direction toward the future transmission lines. The line route does not cross the farm property, which is located on the opposite side of the Broad River from Routes K and O, and the 230 kV and 525 kV line structures on Route O will be approximately 2,500' from the historic house at their closest point. Figure ES-2 shows the Smith's Ford Farm in relation to the W.S. Lee 230 kV and 525 kV Lines on Route O (ACC 2009).





**Figure ES 2: Smith's Ford Farm in Relation to Route O**

ACC concluded that the future W.S. Lee 230 kV and 525 kV Lines will have no effect on the Ninety-Nine Islands Hydro Plant and Dam (ACC 2009).

In consultation with the South Carolina State Historic Preservation Office ("SHPO") regarding the Reid-Walker-Johnson Farm and the Smith's Ford Farm, the SHPO indicated a desire for additional evidence to support the "No Adverse Effect" findings, particularly with respect to visual modifications in their respective viewsheds by the addition of the proposed transmission lines along Route O. Pursuant to the SHPO desire for corroborating evidence to support the findings, Duke Energy contracted with Pike Electric, Inc., Facilities Planning & Siting Division ("FPS"), to conduct a "Probable Visual Effects Analysis" to precisely determine the likely visual effects, if any, the W.S. Lee 230 kV and 525 kV Fold-In Lines constructed along Route O will have on the Reid-Walker-Johnson Farm (including the associated Pleasant Grove and Reid Cemeteries) and Smith's Ford Farm. FPS concluded that the addition the planned

transmission lines will have no adverse effects on either resource. This report describes the process FPS applied to reach that conclusion.

## **Section 1: Introduction and Background Information**

Duke Energy Carolinas, LLC ("Duke Energy"), a subsidiary of Duke Energy Corporation, supplies electrical energy to more than 2 million customers in the piedmont and mountain regions of North and South Carolina. Extending north to the Virginia border and south to Georgia, Duke Energy's service territory covers 22,000-square miles in one of the fastest growing regions in the United States. To maintain an adequate supply of reliable electrical energy to serve the projected future demand in its service territory, Duke Energy is planning to construct a new nuclear generating station, which has been named the William States Lee III Nuclear Station ("Lee Nuclear Station" or "Plant").

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

## **Section 2: Consideration of Cultural Resources When Siting the W.S. Lee Fold-In Lines**

Duke Energy conducted a comprehensive siting study to determine the path of the two separate routes that will extend from the Lee Nuclear Station switchyard to the existing Pacolet Tie-Catawba 230 kV Line and Oconee-Newport 525 kV Line. Twenty-one alternate routes were developed within a 283.47-square mile siting study area, identified as alternate Routes A through U, and the combination of alternate Routes K and O was selected as the two preferred routes for the four future transmission lines. The siting study confirms that alternate Routes K and O are superior to other alternate route combinations evaluated and will minimize overall effects to the broadest range of factors that were considered in the line siting process that included environmental resource factors, land use factors, cultural resource factors and visual factors (FPS 2007).

Duke Energy's transmission line siting consultant, Facilities Planning & Siting, PLLC (now the Facilities Planning & Siting Division of Pike Electric, Inc.) engaged Brockington and Associates, Inc. ("Brockington") to assist in collecting cultural resource data within the siting study area. In September 2006, Brockington conducted background research to determine previously recorded architectural and archaeological resources in the 283.47-square mile siting study area. Records were reviewed at the South Carolina Department of Archives and History ("SCDAH"), including the SCDAH Finding Aid, to determine recorded architectural resources in the siting study area. The Finding Aid is a printed document that lists all cultural resources projects that have occurred in a given county. Brockington also searched the records of the South Carolina Institute of Anthropology and Archaeology ("SCIAA") to determine the locations of recorded archaeological sites in the siting study area. Each recorded architectural and archaeological site was added to the siting study database (Cultural Resource layer in the Geographic Information System) and applied in the siting study. Chart 2.1 displays the cultural resource data that were included in the siting study database (recorded resources) as a result of the records search at the SCDAH and SCIAA (FPS 2007).

**Chart 2.1: Previously Recorded Cultural Resources (FPS 2007)**

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

These data were mapped and given constraint weights in the siting study data base according to their sensitivity to the addition of transmission lines and considered when developing alternate routes and evaluating them before selecting alternate Routes K and O.

In addition to the records search, Brockington conducted a "windshield reconnaissance" level survey throughout the 283.47-square mile siting study area and identified the Reid-Walker-Johnson Farm as "potentially eligible for the NRHP. Chart 2.2 displays the resources that were identified within the 283.47-square mile siting study area during the windshield reconnaissance level survey that were not previously recorded by the SCDAH or SCIAA.

**Chart 2.2: Windshield Reconnaissance Level Survey Results (FPS 2007)**

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

These data were added to the siting study data base and considered when developing alternate routes and evaluating them before selecting alternate Routes K and O.

### **Section 3: Intensive Cultural Resource Investigation along the Selected Routes**

Following the selection of alternate Routes K and O as the future routes for the W.S. Lee 230 kV and 525 kV Fold-In Lines, Duke Energy engaged Archaeological Consultants of the Carolinas, Inc. ("ACC") to conduct an intensive cultural resources survey along selected line routes. The investigation included an intensive archaeological survey of the selected routes right-of-way and an architectural survey within the area of potential effects ("APE") along each route. A records review revealed seventeen (17) previously recorded historic properties within the "Area of Potential Effects" ("APE") of the two selected routes (ACC 2009). Of this total number, fifteen (15) have been classified as "Ineligible" for the National Register of Historic Places ("NRHP") and two (the Ninety-Nine Islands Hydro plant and Dam and the Smith's Ford Farm) are classified as "Eligible" for the NRHP (ACC 2009).

Additionally, ACC completed an architectural survey within the APE of the two selected routes (i.e., within a one-mile wide corridor surrounding the proposed transmission lines) and documented an additional twenty-two (22) historic resources not previously recorded, two (2) of which ACC determined to be "Eligible" for the NRHP. These are the Reid-Walker-Johnson Farm and the associated Pleasant Grove Cemetery, which are located along Route O (Route K is not in the vicinity of the Reid-Walker-Johnson Farm). ACC also cited an "Eligible" historic resource beyond the APE, the Reid Cemetery (approximately 3,250' from the proposed 525 kV line), that is on the Reid-Walker-Johnson Farm property. ACC defined the farm resource to include three residential structures and associated ancillary buildings (barns, sheds, and other farm buildings), all of which reside within a "*proposed historic boundary*" ACC delineated to include the viewshed and terraced fields adjacent to the area where the structures reside. The two cemeteries on the Reid-Walker-Johnson Farm property (the Reid Cemetery and Pleasant Grove Cemetery) are in wooded areas remote from the farm buildings and not within the proposed historic boundary. ACC concluded that the three (3) resources associated with the

Reid-Walker-Johnson Farm will not be directly affected by the W.S. Lee 525 kV Line along Route O (the W.S. Lee 230 kV Fold-In Line does not cross the property) and that indirect impacts (i.e., viewshed modifications) will be unlikely due to screening of the future line that will be afforded by existing stands of trees; thus, ACC recommended a finding of "No Adverse Effect" with regard to the Reid-Walker-Johnson Farm and two associated cemetery resources (ACC 2009).

Additionally, ACC evaluated the potential impacts the future transmission lines may have to two (2) previously recorded NRHP Eligible properties, which include the Ninety-Nine Islands Hydro Plant and Dam and the Smith's Ford Farm. ACC concluded encroachment [resulting from construction of the W.S. Lee Fold-In Lines] on the viewsheds of the Ninety-Nine Islands Hydro Plant and Dam will not be adverse (ACC 2009).

With regard to the Smith's Ford Farm, the W.S. Lee 230 kV and 525 kV Fold-In Lines will not cross the property, which is located on the opposite side of the Broad River from Routes K and O. The 230 kV and 525 kV line structures on Route O at their nearest point to the house on the Smith's Ford Farm will be approximately 2,500' away. ACC noted that unimpeded views exist from the farm looking west over the Broad River in the direction of the future transmission lines. They also noted that Duke Energy will utilize "a viewshed model" to assist in tower placement to eliminate or minimize visibility of the future transmission lines, which should result in a finding of "No Adverse Effect" (ACC 2009).

#### **Section 4: Completion of a Probable Visual Effects Analysis**

To confirm conclusions reached by Brockington and ACC that the future W.S. Lee 230 kV and 525 kV Fold-In Lines along selected Route O will have "No Adverse Effect" to the viewsheds of the Reid-Walker-Johnson Farm and Smith's Ford Farm, Duke Energy engaged Pike Electric, Inc., Facilities Planning & Siting Division ("FPS"), formerly Facilities Planning & Siting, PLLC, to conduct a probable visual effects analysis.

As discussed earlier in this report, the W.S. Lee 230 and 525 kV Fold-In Lines will be comprised of four (4) transmission lines running in two separate corridors (Routes K and O). Within each corridor, a 525 kV line will run for its entire length, which will begin on the south end of the corridor at the existing Oconee-Newport 525 kV Line and extend northward to the W.S. Lee Nuclear Station Switchyard. From the point where each corridor intersects the existing



Pacolet Tie-Catawba 230 kV, a 230 kV Line will run parallel to each 525 kV Line in each of the corridors northward to the switchyard. Route K will not directly or indirectly affect the Reid-Walker-Johnson Farm or the Smith's Ford Farm; therefore, this Probable Visual Effects Analysis only focuses on the potential visual effects the future transmission lines along Route O will have of the two resources. The 525 kV line along Route O is the only one that will run across the Reid-Walker-Johnson Farm; the Smith's Ford Farm could potentially be indirectly affected (viewshed modifications) by a 525 kV Line and a 230 kV line as they run parallel along Route O, although the line route does not cross the Smith's Ford Farm property.

#### 4.1 Initial Field Investigation

FPS began the probable visual effects analysis by conducting a thorough field investigation on the Reid-Walker-Johnson Farm and Smith's Ford Farm. While on the properties of the two farms, FPS carefully inspected the three residential structures on the Reid-Walker-Johnson Farm and one on the Smith's Ford Farm with respect to their orientation in relation to the surveyed line route (Route O) and the vegetation in the immediate vicinity of each that will provide screening of future transmission line structures. FPS also visited the two cemeteries on the Reid-Walker-Johnson Farm and determined that neither will be directly or indirectly affected by the future W.S. Lee 525 kV Fold-In Line due to the dense, mature woodlands that surround each and their distances from Route O.

##### 4.1.1 Reid-Walker-Johnson Farm Investigation Findings

The front of the main house on the Reid-Walker-Johnson Farm faces northeast; the front of the guest house faces northwest; and the front of the tenant house faces southwest. The route of the future W.S. Lee 525 kV Fold-In Line lies to the east of the houses; thus none are oriented toward the future line. At the closest point, the future line will be approximately 2,200' from the main house, approximately 1,925' from the guest house, and approximately 1,650' away from the guest house.

The main house is heavily shrouded with mature trees in the landscape that virtually screen it from Walker Farm Road, which runs by the front of the house at a distance of approximately 220'. Views from the main house and yard are significantly limited by the vegetation and there will be no views of the proposed transmission line. Figure 4.1, 4.2, 4.3 and 4.4 show the main house and depict the heavily vegetated condition of the yard area.



**Figure 4.1: Main House: Reid-Walker-Johnson Farm**  
**Photograph of Front Entrance As Seen From Walker Farm Road**



**Figure 4.2: Main House: Reid-Walker-Johnson Farm**  
**Photograph Looking From the Front Entrance Toward the Future 525 kV Line Location**





**Figure 4.3: Main House: Reid-Walker-Johnson Farm**  
**Photograph Looking Toward the Southeast Side of the House**



**Figure 4.4: Main House: Reid-Walker-Johnson Farm**  
**Photograph Looking Toward the Northwest Side of the House**



The view from the main house toward the route of future W.S. Lee 525 kV Fold-In Line is represented in Appendix A by Figures A-5.1 and A-5.2.

A narrow, paved driveway to the rear area of the main house runs between the guest house and the main house on the Reid-Walker-Johnson Farm, and the front of the guest house faces the driveway. Thus, the orientation of the guest house is to the northwest and in the opposite direction from the position of the future W.S. Lee 525 kV Fold-In Line. The guest house has several large trees in the yard area, primarily on the north and west sides. Except for sparse occurrence of small to medium maturing trees, the yard area is generally open to the south and east. The guest house resides approximately 25' from Walker Road and, from the side yard area adjacent to Walker Farm Road, has a limited view toward the route of the future transmission line; however, the combination of landforms and existing trees in the mid-ground will totally screen the future line from view. Figures 4.5 and 4.6 show the guest house and depict the vegetated condition of the yard area around it.



**Figure 4.5: Guest House: Reid-Walker-Johnson Farm**  
**Photograph Looking Toward the Front of the House from the Paved Driveway**





**Figure 4.6: Guest House: Reid-Walker-Johnson Farm**  
**Photograph Looking Toward the Front on the House in the Direction of the**  
**Future W.S. Lee 525 kV Fold-In Line**

The view from the guest house toward the route of the future W.S. Lee 525 kV Line is represented in Appendix A by Figures A-4.1, A-4.2, A-6.1 and A-6.2.

The tenant house on the Reid-Walker-Johnson Farm is located across Walker Farm Road from the main house and guest house. It sets in a moderate-heavy grove of mature trees approximately 225' northeast of Walker Farm Road. From the rear yard area, views are open beneath the tree canopies across an open pasture in the general direction toward the future W.S. Lee 525 kV Fold-In Line; however, the combination of landforms and the presence of a heavily wooded area across the pasture from the tenant house will totally screen the future transmission line. Figures 4.7 and 4.8 show the tenant house and depict the vegetated condition of the yard area around it.





**Figure 4.7: Tenant House: Reid-Walker-Johnson Farm**  
**Photograph Looking Toward the Front of the House**



**Figure 4.8: Tenant House: Reid-Walker-Johnson Farm**  
**Photograph Looking Across the Backyard Toward the W.S. Lee 525 kV Fold-In Line Route**



The view from the backyard of the tenant house toward the route of future W.S. Lee 525 kV Fold-In Line is represented in Appendix A by Figures A-11.1 and A-11.2.

The Reid Cemetery on the Reid-Walker-Johnson Farm is located in a mature oak-hickory forest approximately 3,200' east of the future W.S. Lee 525 kV Fold-In Line. It resides on a knoll approximately 1,700' west of the Broad River. The cemetery is bordered by a low, deteriorating stacked stone wall that is about 50' square and has relatively young hardwood trees growing within the boundary of the rock wall. When FPS visited the site on December 28, 2009, the oldest grave observed displayed an 1820 date of death. Figure ES 1, hereinabove, shows the Reid Cemetery location in relation to the future transmission line; Figures 4.9 and 4.10 are photographs of the cemetery.



**Figure 4.9: Reid Cemetery: Reid-Walker-Johnson Farm**





**Figure 4.10: Reid Cemetery: Reid-Walker-Johnson Farm**

The Pleasant Grove Cemetery, which is located on the Reid-Walker-Johnson Farm adjacent to the unpaved Pleasant Grove Road, resides in a wooded area approximately 2,500' west of the future W.S. Lee 525 kV Line. The border of the cemetery is defined by a chain-link fence that is only partially standing; in most places, it is lying on the ground. Trees are growing throughout the cemetery and most tomb stones are askew. The future transmission line will not be visible from the Pleasant Grove Cemetery due to screening that is afforded by landforms and heavily wooded areas. Figure ES 1, hereinabove, shows the Pleasant Grove Cemetery location in relation to the future W.S. Lee 525 kV Fold-In Line along Route O; Figures 4.11 and 4.12 are photographs of the cemetery.





**Figure 4.11: Pleasant Grove Cemetery: Reid-Walker-Johnson Farm**



**Figure 4.12: Pleasant Grove Cemetery: Reid-Walker-Johnson Farm**



#### 4.1.2 Smith's Ford Farm Investigation Findings

The front of the historic house on the Smith's Ford Farm faces due south; the route of the future W.S. Lee 230 kV and 525 kV Fold-In Lines along Route O is west of the house, with the closet point along the line being approximately 2,500' from the house. Mature trees reside sporadically in the yard area surrounding the house and views to the west toward the line are significantly limited by the linear, riparian stand of mature trees along the Broad River, which is approximately 440' west of the house. No views of the future W.S. Lee 230 kV and 525 kV Fold-In Lines will exist from the house on the Smith's Ford Farm or the surrounding yard and nearby open areas. Figure 4.13 and 4.14 show the house and depict the condition of the yard area.



**Figure 4.13: House and Yard Area: Smith's Ford Farm  
Photograph Looking Toward the Front of the House**





**Figure 4.14: Yard Area View: Smith's Ford Farm**  
**Photograph Looking Across the Broad River Toward the Future W.S. Lee 230 kV and 525 kV Fold-In Lines (Route O)**

The view from the front yard area of the Smith's Ford Farm historic house looking toward the route of future W.S. Lee 230 kV and 525 kV Fold-In Lines is represented in Appendix A by Figures A-12.1 and A-12.2.

In addition to a careful inspection of the houses and cemeteries on Reid-Walker-Johnson Farm and the house on the Smith's Ford Farm, the initial field investigation included inspecting tree stands visible on the aerial photography associated with each farm to confirm that they had not been altered since the date of the aerial photography. Additionally, FPS estimated the average heights of the major stands or groups of trees that will likely serve to screen the future W.S. Lee 230 kV and 525 kV Fold-In Line from sensitive viewpoints on each farm.

#### 4.2 Development of a Seen Area Analysis Model

Following the initial field investigation, extensive computer modeling was completed to predict areas on the Reid-Walker-Johnson Farm where the proposed line may be visible from areas within the proposed historic boundary. Using U.S. Geologic Survey Digital Elevation Models and vegetation data digitized from aerial photography, a computer-generated "Seen Area Analysis Model" was created using Erdas Imagine software to predict where views of the 525 kV line along selected Route O will be most likely from viewpoint locations within the proposed historic boundary ACC delineated in association with the Reid-Walker-Johnson Farm (*Figure A-3*). The Seen Area Analysis Model was "built" by adding the engineered 525 kV line structures along Route O in the vicinity of the Reid-Walker-Johnson Farm to a "terrain surface" that was created by using the USGS Digital Elevation Models. Trees were added to the terrain surface based on their locations that were extracted from aerial photography at heights estimated by FPS during the

initial field investigation. Using the tops of the 525 kV structures (coordinate locations and elevations) as reference points, the Erdas Seen Area Analysis Model was completed to display areas on the terrain surface over a broad area, including the area within the proposed historic boundary, where views of the structure would be probable based on the elevation at the tops of structures. Using the structures top elevations was a conservative approach since it resulted in areas being designated as “seen areas” even if only the very top of any structure would be visible above terrain and / or vegetation.

FPS landscape architects determined that only one area on the Smith’s Ford Farm, the yard area surrounding the house, had any probability of future views of the future W.S. Lee 230 kV and 525 kV Fold-In Lines; therefore, seen area analysis modeling associated with the Smith’s Ford Farm was deemed unnecessary. The house and yard area are located on a knoll that is higher than nearby open field areas, which are largely within the Broad River floodplain, and it was apparent to the FPS landscape architects that any view of the future transmission lines would be limited to the higher area immediately surrounding the house. To accurately predict probable views from this area, it was decided that completion of computer generated terrain modeling from the yard area would be sufficient (see Section 4.4).

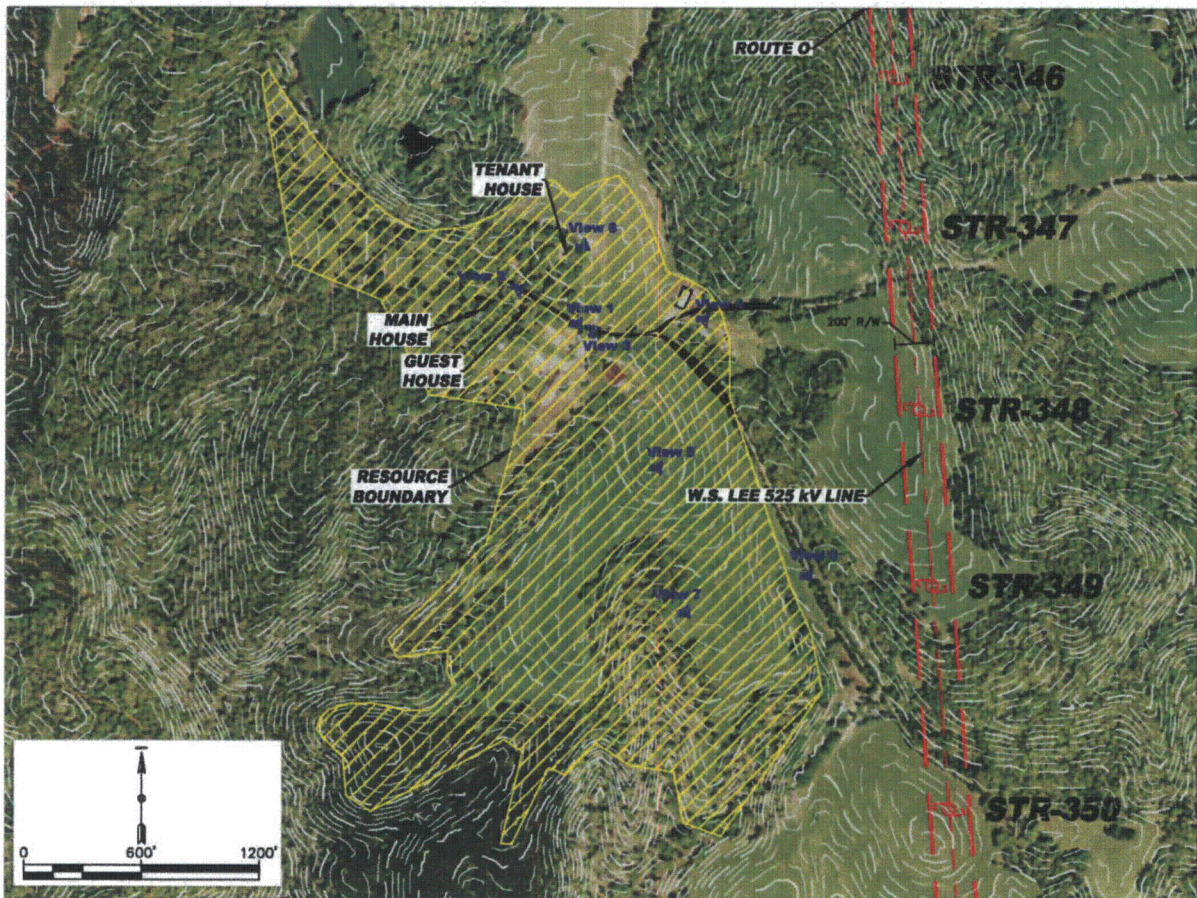
#### 4.3 Second Field Investigation Using the Seen Area Analysis Model to Identify Viewpoints

FPS conducted a second field investigation to inspect the areas in the field where possible visibility of the future structures, based on their top elevations, were predicted by the Seen Area Analysis Model associated with the Reid-Walker-Johnson Farm. This effort resulted in the identification of eight (8) “viewpoints” on the Reid-Walker-Johnson Farm (Viewpoints 1 through 8) in areas designated by the Seen Area Analysis Model as possibly having views of the future line. Photographs were taken from each viewpoint looking toward the potentially visible segment of the future line, and each viewpoint location was recorded using Global Positioning System equipment.

On the Smith’s Ford Farm, one (1) viewpoint was recorded (Viewpoint 9) in the front yard where FPS landscape architects believed future views of the W.S. Lee 230 kV and 525 kV Fold-In Lines along Route O, if any, would most likely occur.

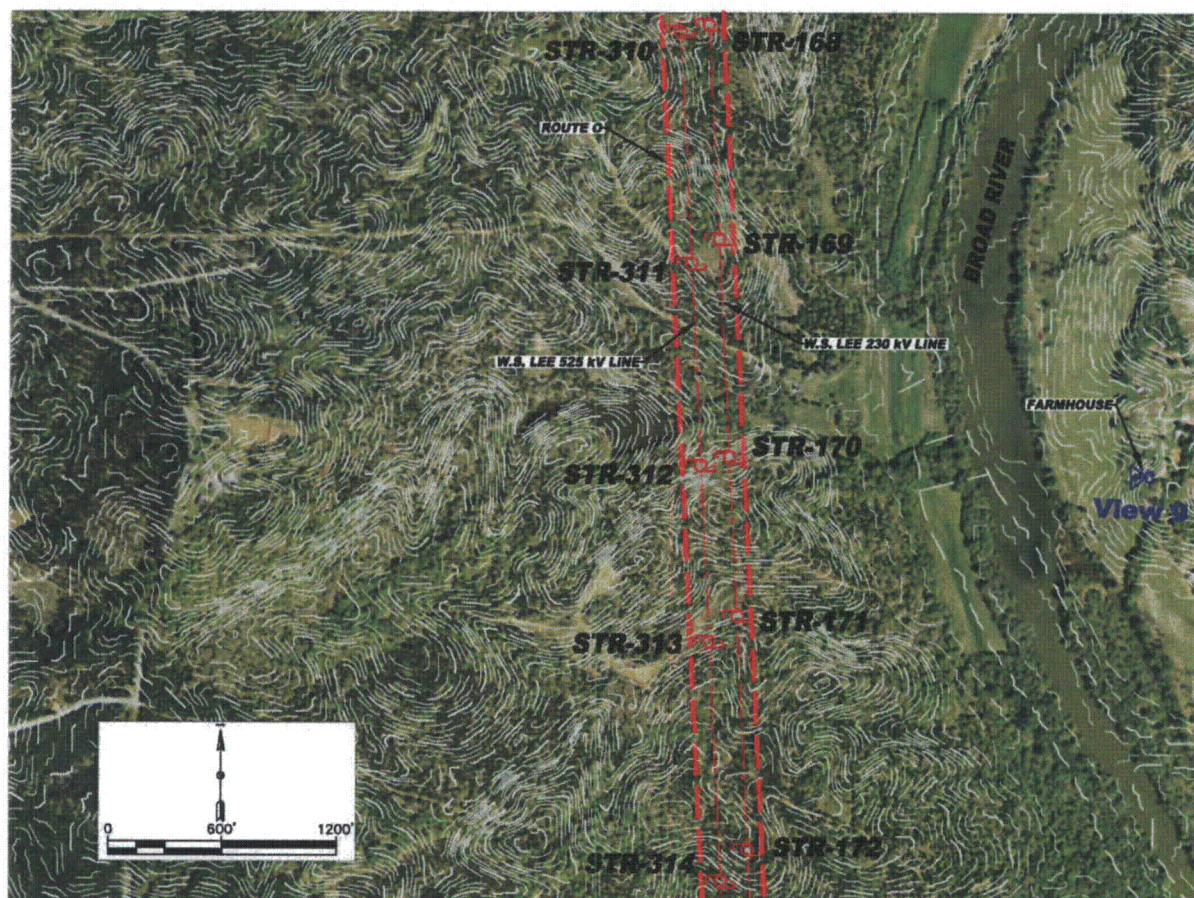


Figure 4.15 shows the proposed historic boundary and eight (8) viewpoints on the Reid-Walker-Johnson Farm in relation to the future transmission line; Figure 4.16 shows Viewpoint 9 location on the Smith's Ford Farm in relation to the future transmission line.



**Figure 4.15: Reid-Walker-Johnson Farm  
Viewpoint Locations, House Locations and Proposed Historic Boundary in  
Relation to Selected Route O**





**Figure 4.16: Smith's Ford Farm  
Viewpoint 9 Location and House Location in Relation to Selected Route O**

#### 4.4 Preparation of Computer Generated Terrain Models

After identifying the eight (8) viewpoints within the proposed historic boundary delineated by ACC on the Reid-Walker-Johnson Farm and one (1) viewpoint on the Smith's Ford Farm, FPS began a process to more accurately predict the degree to which any future line structures would be seen. This more detailed visual impact analysis process involved the preparation of computer generated terrain models with the future line structures added.

Digital topography of the "seen area" included in the photographs that were taken at each viewpoint was electronically imported into the Civil 3-D module of AutoCAD 2010 software and a terrain surface was created for each viewpoint that included the entire area visible in the corresponding photographs. Next, trees were added at their estimated heights onto the terrain surface at their correct locations as determined by aerial photography and field investigations.

Finally, the future transmission lines were completely modeled as three-dimensional elements based on line engineering data and placed on the terrain surface associated with each viewpoint (Viewpoints 1-8 on the Reid-Walker-Johnson Farm and Viewpoint 9 on the Smith's Ford Farm) in their precise, engineered location. In the case of the Smith's Ford Farm, the modeling of the transmission lines included the W.S. Lee 230 kV and 525 kV Fold-In Lines along Route O; only the 525 kV line is applicable to the Reid-Walker-Johnson Farm.

The process continued by importing the location coordinates of the viewpoints from which each of the nine (9) photographs were taken into Civil 3-D. An AutoCAD "camera" was created in Civil 3-D to match the lens angle that was used to take the photographs from each viewpoint, and a computer generated terrain model was built for each viewpoint that matches the photograph taken from the viewpoint. The terrain models provide an accurate perspective view from each viewpoint that includes terrain relief, trees at their correct location and heights, and the future transmission line wherever not screened by landforms and / or trees. The terrain models associated with Viewpoints 1-8 on the Reid-Walker-Johnson Farm are displayed in Appendix A, Figures A-4.2, A-5.2, A-6.2, A-7.2, A-8.2, A-9.2, A-10.2 and A-11.2; Viewpoint 9 on the Smith's Ford Farm is represented by Figure A-12.2.

#### 4.5 Development of Photographic Simulations

The terrain modeling procedure indicated that the future line will only be visible from Viewpoints 5 and 7 on the Reid-Walker-Johnson Farm, and photographic simulations were completed to depict how the future line will appear from these two viewpoints. To complete the photographic simulation from each of these viewpoints, the photographs showing the existing conditions that were taken from each viewpoint and terrain models for each viewpoint were imported into a computer program called Photoshop. The computer generated terrain models, which matched the photographs, were overlaid onto the existing condition photographs taken from Viewpoints 5 and 7. Using the computer generated terrain models to ensure accuracy, the photographs were modified in Photoshop by removing trees from the photograph in areas where trees will be removed, if any, and importing the completely modeled three-dimensional transmission line element into the photograph. These steps produced photographic simulations for Viewpoints 5 and 7 that accurately depict views of the future W.S. Lee 525 kV Fold-In Line as it will appear from the two viewpoints. The only step remaining was the selection of the color for the future transmission line H-Frame transmission line structures.

To ensure an accurate color representation of the steel that will be used to construct the W.S. Lee 525 kV Fold-In Line, an actual sample of the darkened steel that will be used to fabricate the W.S. Lee 525 kV H-Frame structures was photographed at close range and the image was imported in to Photoshop and used as the color for the simulated line structures in the photographic simulations.

This process was used to develop the two (2) photographic simulations that depict how the planned W.S. Lee 525 kV Fold-In Line along Route O will appear from Viewpoints 5 and 7 within the proposed historic boundary on the Reid-Walker-Johnson Farm (*Appendix A, Figures A-8.3 and A-10.3*); the computer generated terrain modeling process confirms that the W.S. Lee 230 and 525 kV Fold-In Lines along Route O will not be visible from the Smith's Ford Farm (*Appendix A, Figures A-12.1 and A-12.2*).

## **Section 5      Conclusions**

Based on the evidence developed during the probable visual effects analysis conducted on Duke Energy's behalf by FPS, it is believed the future presence of the W.S. Lee 525 kV Fold-In Line along Route O will have no adverse visual impact on the Reid-Walker-Johnson Farm; likewise, it is believed the presence of the W.S. Lee 230 and 525 kV Lines along Route O will have no adverse visual impact on the Smith's Ford Farm. As evidenced by the Seen Area Analysis Model, computer generated terrain models and photographic simulations, the future 525 kV line along selected Route O will only be slightly visible from two limited areas (Viewpoints 5 and 7) in a terraced field within the proposed historic boundary on the Reid-Walker-Johnson Farm. From Viewpoint 5, the photographic simulation indicates that a portion of one structure that is slightly visible above tree canopies on the computer generated terrain model will, in reality, not likely be visible or, in any event, not evident to casual viewers. From Viewpoint 7, only the top portion of one structure (approximately 15-20 vertical feet) will be visible above the canopies of nearby trees. The distance to the structure in question from Viewpoint 5 is 1,400'; from Viewpoint 7 the distance to the structure where the top few feet may be seen above tree canopies is 1,300'. Given the minor amount of each structure that will likely be visible from Viewpoints 5 and 7 and each structure's distance from the respective viewpoints, it appears there will be no adverse impact to the Reid-Walker-Johnson property (the proposed historic boundary area) as a result of the W.S. Lee 525 kV Fold-In Line, and no views of the future line will occur from either of the two cemeteries on the farm.



No view of the future W.S. Lee 230 kV and 525 kV Fold-In Lines constructed along Route O will be visible from any points on the Smith's Ford Farm, as was determined by the computer generated terrain model that was developed from Viewpoint 9.

#### **Section 6: An Explanation Regarding the Correct View Distance to Figures and Photographs Included in Appendix A**

When viewing the photographs and matching terrain models included in Appendix A, it is possible to replicate the view that would be experienced as if actually observed from the viewpoint itself by adjusting the distance from the eye to the photographs and terrain models. The view distance to replicate actual view conditions is calculated using the formula developed by Stephen Shepard (Shepard, Stephen R.J. 1989. Visual Simulation: A User's Guide for Architects, Engineers, and Planners, New York: Van Nostrand Reinhold, Page 185). The formula and "correct view distance" calculation for the photographs and terrain models included in Appendix A follows:

$$\begin{aligned} \text{Correct Viewing Distance (CVD) in Inches} &= \frac{\frac{1}{2} \text{ Simulation Width (Inches)}}{\tan (1/2 \text{ View Angle})} \\ \\ \text{CVD} &= \frac{7.0 \text{ Inches} / 2}{\tan (27 \text{ Degree View Angle} / 2)} \\ \\ \text{CVD} &= \frac{3.5}{0.2401} \\ \\ \text{CVD} &= 13.74'' \end{aligned}$$

## References Cited

Archaeological Consultants of the Carolinas, Inc. (ACC)

2009. *Cultural Resources Survey of the Proposed William States Lee III Nuclear Station  
230 kV and 525 kV Transmission Lines, Cherokee and Union Counties, SC.*

*Document submitted to Duke Energy Carolinas, LLC*

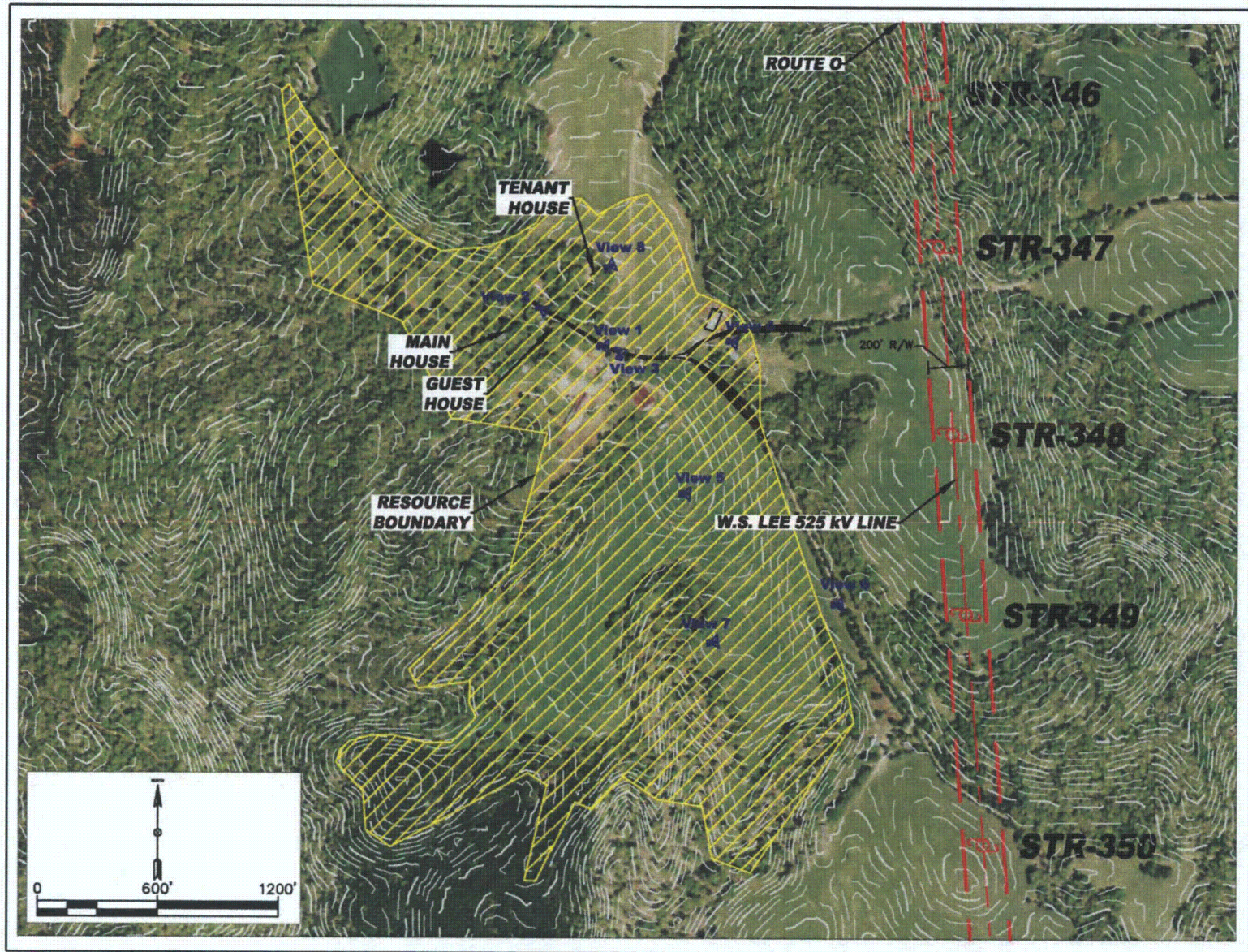
Facilities Planning & Siting, PLLC (FPS)

2007. *Siting and Environmental Report for the William States Lee III Nuclear Station  
230 kV and 525 kV Fold-In Lines, Union and Cherokee Counties, South Carolina.*

*Document submitted to Duke Energy.*

## **Appendix A: Figures**

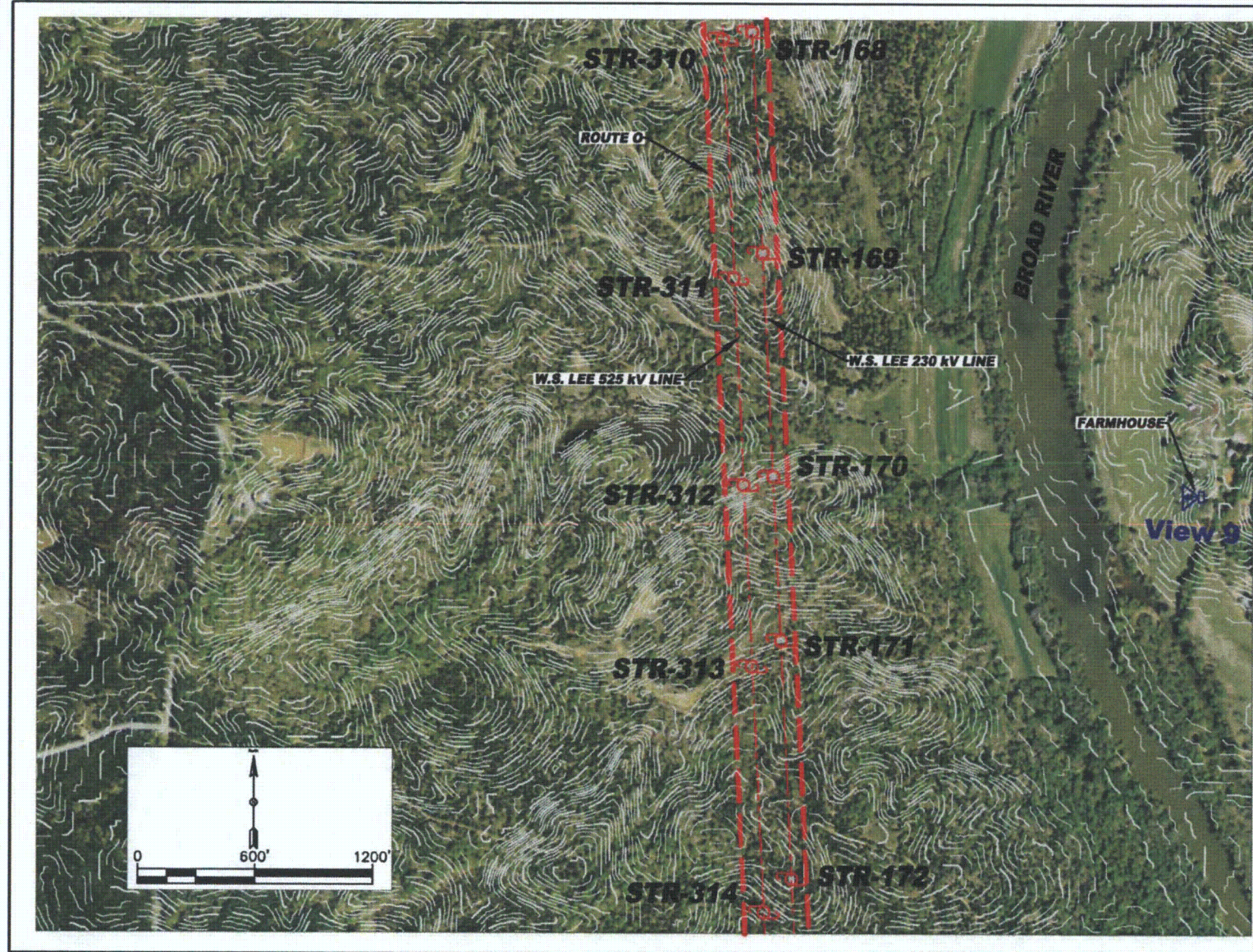




Reid-Walker-Johnson Farm



# Viewpoint Location

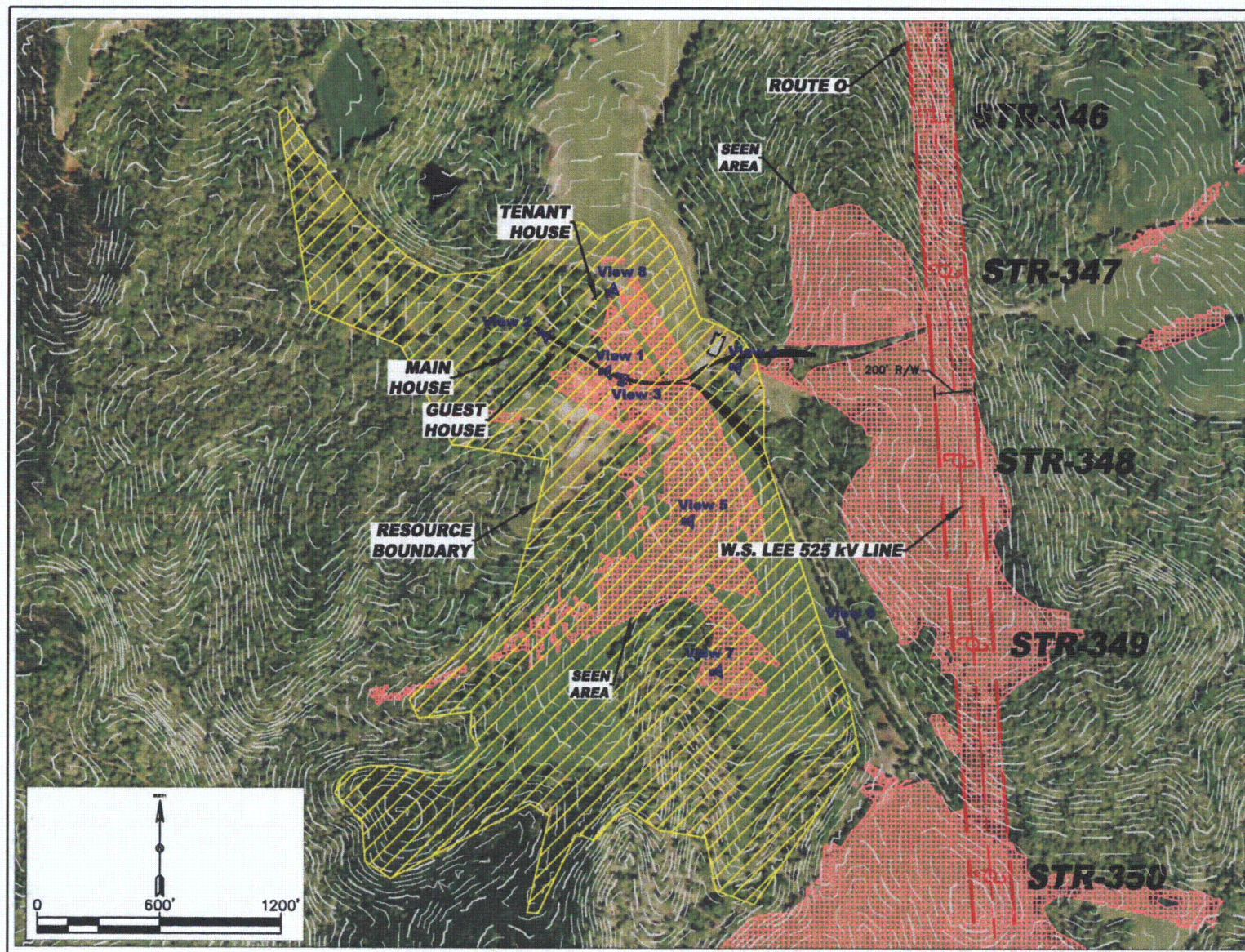


W.S. Lee 525 kV Fold-In Line

Smith's Ford Farm

Selected Route O Proximity to the Smith's Ford Farm





Reid-Walker-Johnson Farm



**Viewpoint 1 :**

**Walker Farm Road Near The End of Pavement  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 347 and 348**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Existing Condition Photograph**

A-4.1



**Viewpoint 1 :**

**Walker Farm Road Near End of Pavement  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 347 and 348**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Computer Generated Terrain Model With Existing Trees**

A-4.2



**Viewpoint 2 :**

**View From Walker Farm Road in Front of Main House  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 347, 348 and 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

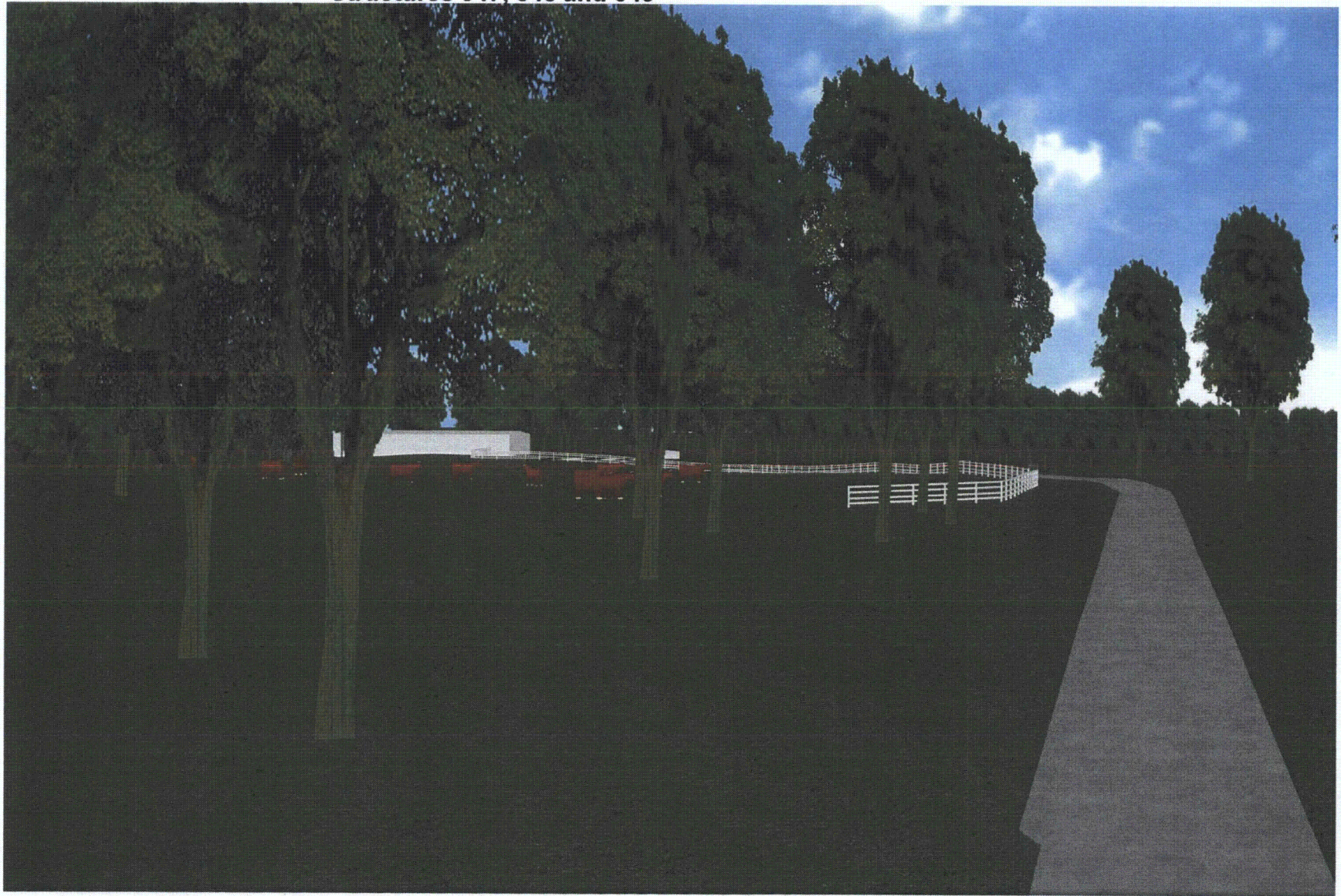
**Existing Conditions Photograph**

A-5.1



**Viewpoint 2 :**

**View From Walker Farm Road in Front of Main House  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 347, 348 and 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Computer Generated Terrain Model With Existing Trees**

A-5.2



**Viewpoint 3 :**

**View From Walker Farm Road Near Pasture Gate  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 342, 343, 344, 345 and 346**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Existing Conditions Photograph**

A-6.1



**Viewpoint 3 :**

**View From Walker Farm Road Near Pasture Gate  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 342, 343, 344, 345 and 346**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Computer Generated Terrain Model With Existing Trees**

A-6.2



**Viewpoint 4 :**

**View From Field Next to Sawmill  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structure 348**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

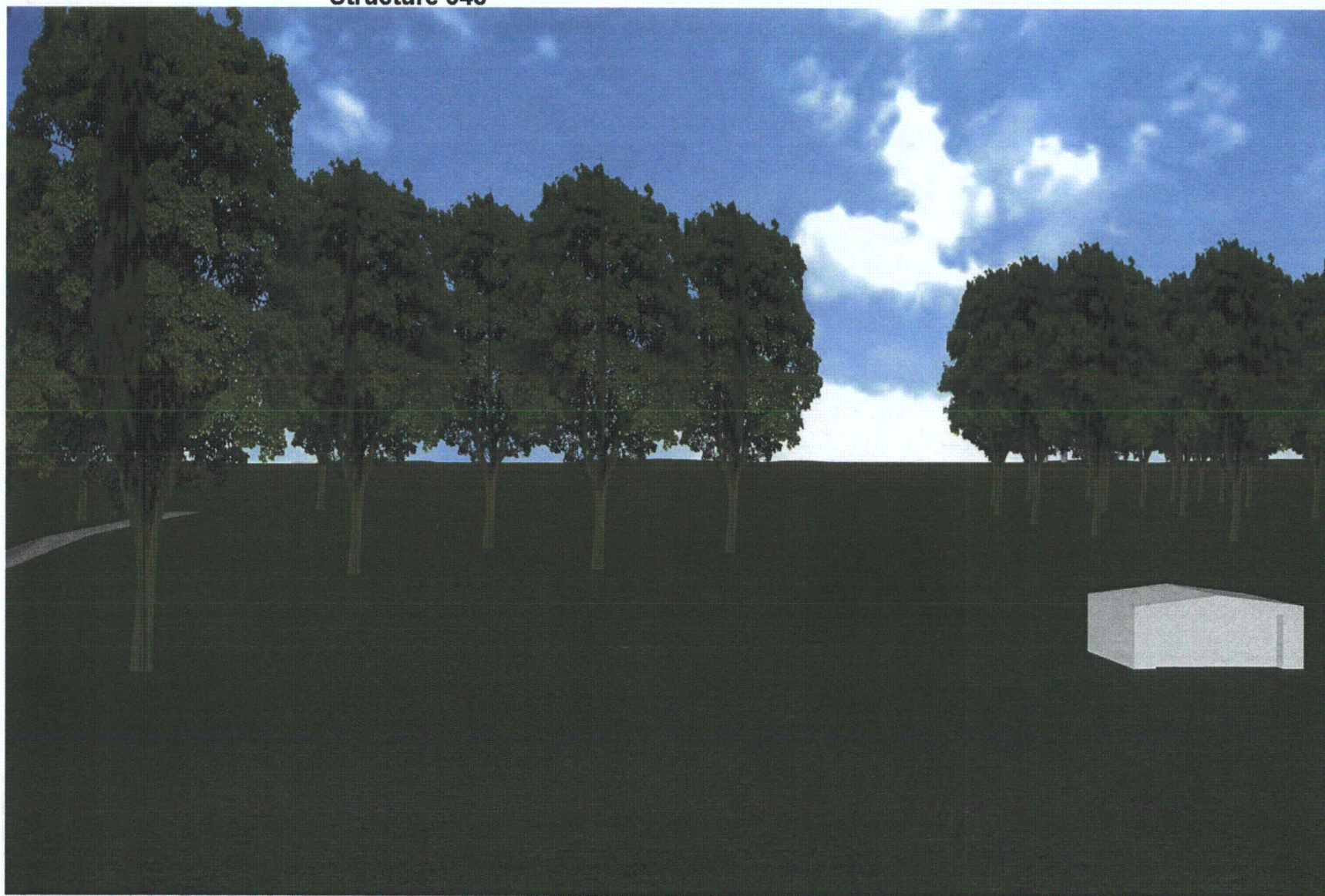
**Existing Conditions Photograph**

A-7.1



**Viewpoint 4 :**

**View From Field Next to Sawmill  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structure 348**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Computer Generated Terrain Model With Existing Trees**

A-7.2



**Viewpoint 5 :**

**View From High Point in Pasture Behind Silo  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 348 and 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Existing Conditions Photograph**

A-8.1



**Viewpoint 5 :**

**View From High Point in Pasture Behind Silo  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 348 and 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

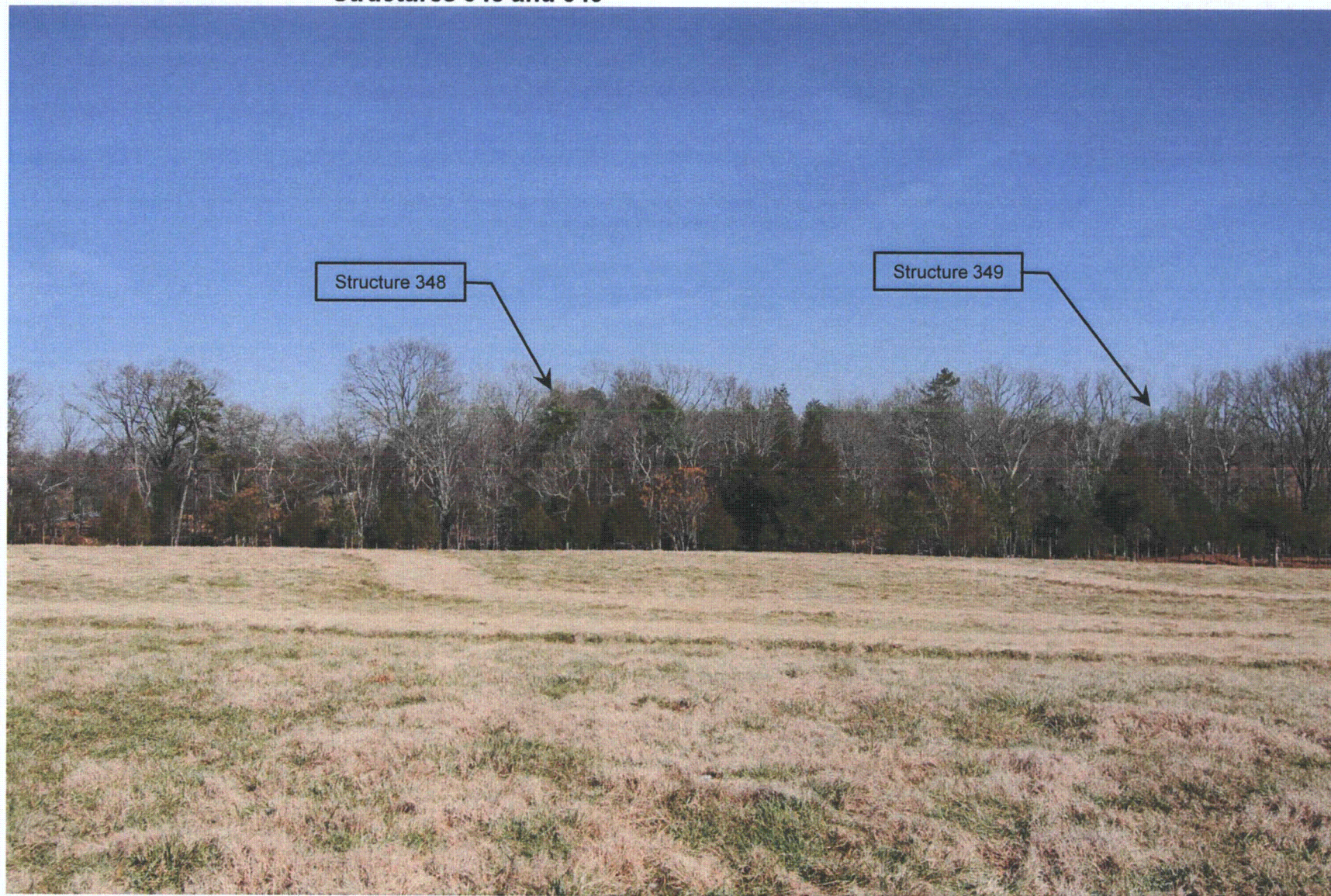
**Computer Generated Terrain Model With Existing Trees**

A-8.2



**Viewpoint 5 :**

**View From High Point in Pasture Behind Silo  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 348 and 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Photographic Simulation**

A-8.3



**Viewpoint 6 :**

**View From Farm Road Just Outside Resource Boundary  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structure 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

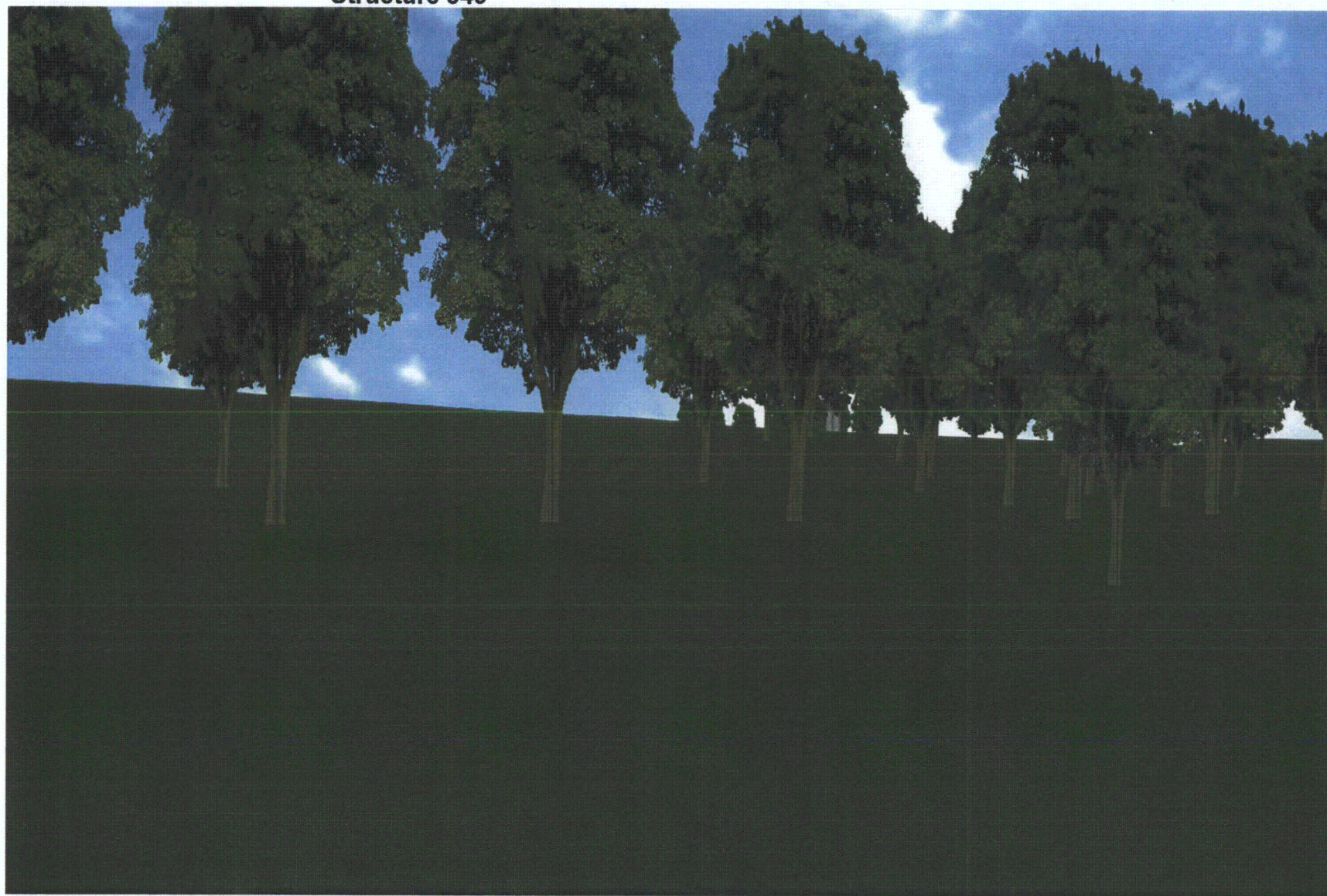
**Existing Conditions Photograph**

A-9.1



**Viewpoint 6 :**

**View From Farm Road Just Outside Resource Boundary  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structure 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Computer Generated Terrain Model With Existing Trees**

A-9.2



**Viewpoint 7 :**

**View From Pasture  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 348 and 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Existing Conditions Photograph**

A-10.1



**Viewpoint 7 :**

**View From Pasture  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 348 and 349**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Computer Generated Terrain Model With Existing Trees**

A-10.2



**Viewpoint 7 :**

**View From Pasture  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 348 and 349**



Structure 348

Structure 349

Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

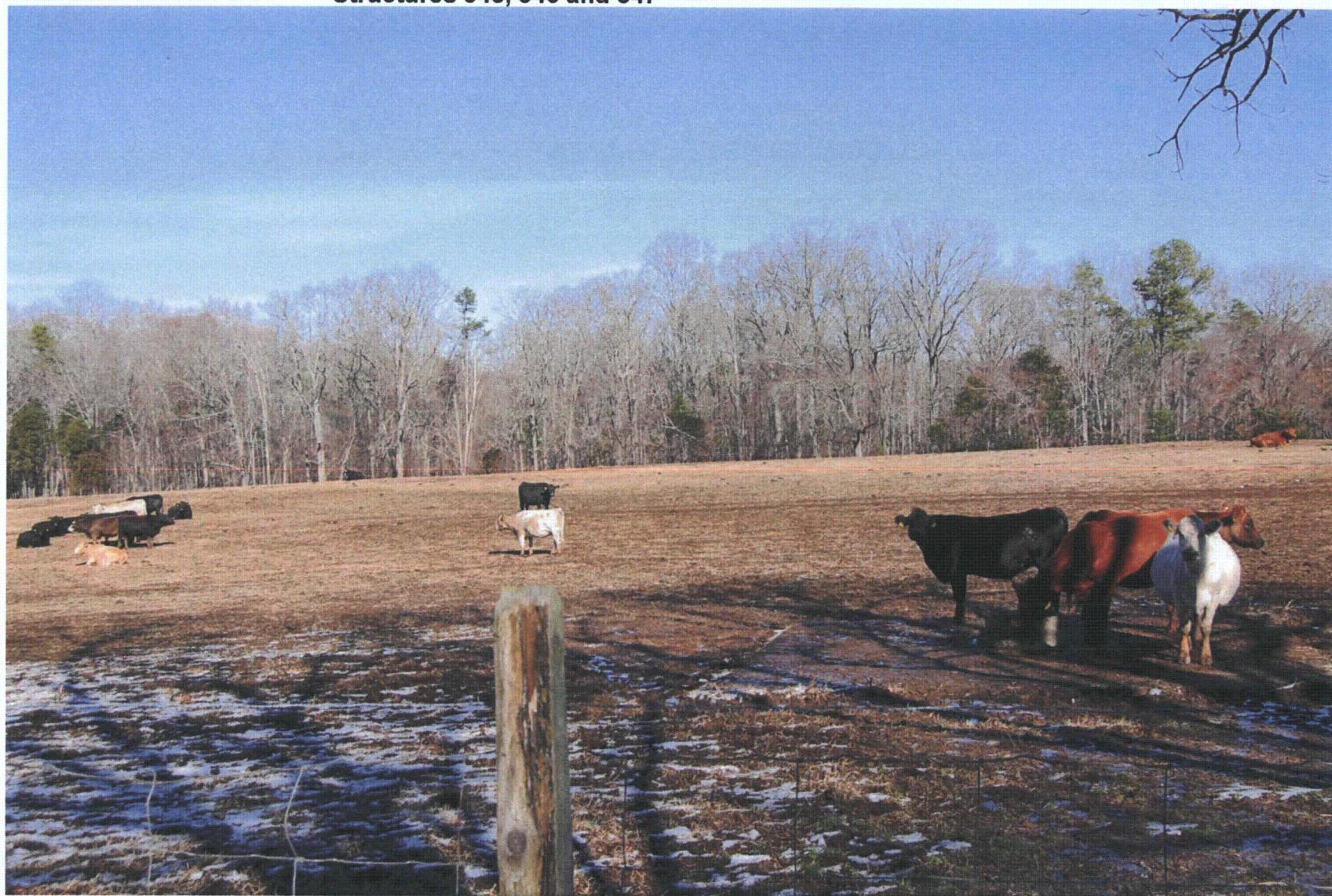
**Photographic Simulation**

A-10.3



**Viewpoint 8 :**

**View From Behind Tenant House  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 345, 346 and 347**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Existing Conditions Photograph**

A-11.1



**Viewpoint 8 :**

**View From Behind Tenant House  
Looking Toward W.S. Lee 525 kV Fold-In Line  
Structures 345, 346 and 347**



Reid-Walker-Johnson Farm

W.S. Lee 525 kV Fold-In Line

**Computer Generated Terrain Model With Existing Trees**

A-11.2



**Viewpoint 9 :**

**View From Smith's Ford Farm**

**Looking Toward W.S. Lee 230 kV and 525 kV Fold-In Line:**

**(230 kV Structures 169, 170, 171, and 172)**

**(525 kV Structures 310, 311, 312, 313, and 314)**





**Viewpoint 9 :**

**View From Smith's Ford Farm**

**Looking Toward W.S. Lee 230 kV and 525 kV Fold-In Line:**

**(230 kV Structures 169, 170, 171, and 172)**

**(525 kV Structures 310, 311, 312, 313, and 314)**



Enclosure 3  
Duke Letter Dated: July 9, 2010

**Attachment 138-4**

**Wilson, C.D. letter to T. Bowling, Lee Nuclear Transmission Line Visual Survey, Cherokee  
County, SC, SHPO #: 09-CW0247, May 27, 2010**