From: "Williams, Dana M." <X2DANAWI@southernco.com>
To: "Mark Notich" <mdn@nrc.gov>
Date: 5/14/2007 3:30:45 PM
Subject: AR-07-0924_Follow up responses
cc: "James T. Davis" <JTDAVIS@southernco.com>,"Tom C. Moorer" <TCMOORER@southernco.com>

Mark:

Per your request, attached is the cover letter for AR-07-0924.

<<AR-07-0924_Response to RAI 4_20_07.pdf>>
Thanks,

Dana Williams
Southern Nuclear Operating Company
Nuclear Development
P 205.992.5934
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Hearing Identifier: Vogtle_Non_Public
Email Number: 4548

Mail Envelope Properties (46604BEF.HQGWDO01.TWGWPO04.200.200000C.1.C0420.1)

Subject: AR-07-0924_Follow up responses
Creation Date: 5/14/2007 3:30:45 PM
From: "Williams, Dana M." <X2DANAWI@southernco.com>

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Post Office	**Route**
TWGWPO04.HQGWDO01	nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	246	5/14/2007 3:30:45 PM
AR-07-0924_Response to RAI 4_20_07.pdf	1254852	6/1/2007 4:40:15 PM
Mime.822	1758499	6/1/2007 4:40:15 PM

Options
Priority: Standard
Reply Requested: No
Return Notification: None
None

Concealed Subject: No
Security: Standard

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SOUTHERN COMPANY
Energy to Serve Your World℠

MAY 10 2007

Docket No.: 52-011

AR-07-0924

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

Southern Nuclear Operating Company
Vogtle Early Site Permit Application
Response to Followup Requests for Additional Information on Environmental Report

Ladies and Gentlemen:

By letter dated December 29, 2006, the U.S. Nuclear Regulatory Commission (NRC) provided Southern Nuclear Operating Company (SNC) with Requests for Additional Information (RAIs) pertaining to the Part 3, *Environmental Report* (ER), portion of the Vogtle Early Site Permit (ESP) Application. By letter dated January 31, 2007, SNC submitted responses to the ER RAIs. Based upon subsequent discussions with the NRC, additional clarification was requested on several of the RAI responses. The NRC provided SNC with clarification RAIs in a letter dated April 20, 2007. SNC's response to the NRC's clarification RAIs is provided in the enclosures to this letter.

If you have any questions or require additional information regarding this matter, please contact T. C. Moorer at 205-992-5807 or J. T. Davis at (205) 992-7692.

Mr. David H. Jones states he is a Vice President of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

David H. Jones

Sworn to and subscripted before me this 10th *day of* May, *2007*

Notary Public

My commission expires: July 5, 2010

DHJ/BJS/dmw

Enclosures:

1. Response to Followup RAIs on the Vogtle ESP Application Environmental Report
2. Miscellaneous Documents in Support of Responses to Followup ER RAIs

cc: Southern Nuclear Operating Company
Mr. J. B. Beasley, Jr., President and CEO (w/o enclosures)
Mr. J. T. Gasser, Executive Vice President, Nuclear Operations (w/o enclosures)
Mr. J.A. (Buzz) Miller, Senior Vice President, Nuclear Development (w/o enclosures)
Mr. T. E. Tynan, Vice President - Vogtle (w/o enclosures)
Mr. D. M. Lloyd, Vogtle Deployment Director (w/o enclosures)
Mr. C. R. Pierce, Vogtle Development Licensing Manager (w/o enclosures)
Document Services RTYPE: AR01
File AR.01.01.06

Nuclear Regulatory Commission
Mr. R. W. Borchardt, Director of Office of Nuclear Regulation (w/o enclosures)
Mr. W. D. Travers, Region II Administrator (w/o enclosures)
Mr. D. B. Matthews, Director of New Reactors (w/o enclosures)
Ms. S. M. Coffin, AP1000 Manager of New Reactors (w/o enclosures)
Mr. C. J. Araguas, Project Manager of New Reactors
Mr. W.F. Burton, Chief – Environmental Technical Support (w/o enclosures)
Mr. M. D. Notich, Environmental Project Manager
Mr. G. J. McCoy, Senior Resident Inspector of VEGP (w/o enclosures)

Georgia Power Company
Mr. O. C. Harper, Vice President, Resource Planning and Nuclear Development (w/o enclosure)

Oglethorpe Power Corporation
Mr. M. W. Price, Chief Operating Officer (w/o enclosure)

Municipal Electric Authority of Georgia
Mr. C. B. Manning, Senior Vice President and Chief Operating Officer (w/o enclosure)

Dalton Utilities
Mr. D. Cope, President and Chief Executive Officer (w/o enclosure)

Bechtel Power Corporation
Mr. J. S. Prebula, Project Engineer (w/o enclosures)
Mr. R. W. Prunty, Licensing Engineer (w/o enclosures)

Tetra Tech NUS, Inc.
Ms. K. K. Patterson, Project Manager (w/o enclosures)

Southern Nuclear Operating Company

AR-07-0924

Enclosure 1

Response to Followup RAIs

on the

Vogtle ESP Application

Environmental Report

Section 2.3 Hydrology

E2.3-2 Section 2.3.1.2 Groundwater Resources, Section 2.3.1.2.2 Local Hydrogeology, Section 2.3.1.2.4 Hydrogeologic Properties

a. Provide the Georgia Power (1985) document referenced in the RAI response.

Response:

a. The reference Georgia Power (1985) - Ground Water Supplement, Vogtle Electric Plant Unit 1 and Unit 2, March, is included in Enclosure 2.

b. Elaborate on the RAI response that summarizes Summerour et al. (1998) as stating "none of the faults identified in their seismic surveys appear to have disrupted the Gordon aquitard (Blue Bluff Marl), which isolates the unconfined aquifer from underlying confined aquifers." In fact, this summary statement by the applicant contradicts the following statements of Summerour et al. (1998, page 51), contained in the same document:

1. "Whether the Pen Branch fault cuts the Gordon aquitard in the study area, remains uncertain."

2. "It is unclear whether the fractures also cut the Gordon aquitard. The large number of fractures and the fact that they appear to cut most of the aquitards in the stratigraphic sequence suggests that there may be leakage between aquifers near the Pen Branch fault. Therefore, both the Pen Branch fault and the associated fracture system may provide pathways...from the Upper Three Runs aquifer into deeper, normally confined aquifers."

Response:

b. As stated in the April 16, 2007 Letter #6 (AR-07-0639) response to safety related RAIs, Summerour et al. (1998) does not present evidence in their discussion on the seismic reflection data collected and interpreted by Waddell et al. (1995) that would indicate communication between Water Table and Tertiary aquifers through fractures or faults in the Blue Bluff Marl (BBM) associated with the Pen Branch fault.

As part of an investigation of tritium in the Gordon (Tertiary aquifer) and other aquifers in Burke County, Georgia, Summerour et al. (1998) reported seismic reflection data collected and interpreted by Waddell et al. (1995). The seismic reflection survey extended over 7,000 ft in the vicinity of Hancock Landing and was intended to trace the extension of the Pen Branch fault into Georgia. The results of the survey identified three fault zones that cut the basement rock and extended into the lower Dublin aquifer, the upper Midville aquitard, the lower Midville aquitard, and the basal Appleton aquitard. However, there is no evidence to suggest that the fault zones extended into the Gordon aquitard (BBM). Summerour et al. state the following: "Whether the Pen Branch fault cuts the Gordon aquitard in the study area remains uncertain". In addition, Waddell et al. identify a large number of short fractures within the Cretaceous and Tertiary age sediments associated with these fault zones. These short fractures are interpreted to cut the Dublin aquitard, upper Midville aquitard, the lower Midville aquitard and possibly the upper Dublin and Millers Pond aquitards. However, there is no evidence to suggest that these short fractures extend into the Gordon aquitard (BBM). Summerour et al. state the following: "It is unclear whether the fractures also cut the Gordon aquitard."

The validity of the interpretation of the seismic profile by Waddell et al. is drawn into question by the apparent misinterpretation of a series of depositional anomalies identified on the seismic profile. Waddell et al. interpret the depositional anomalies to be unconformities or channel features stacked vertically on top of one another. However, soil cores retrieved from a boring drilled over the deepest part of one of these channels revealed a normal stratigraphic sequence without any evidence of channel scour or fill. Summerour et al. state the following: "The disparity between the seismic line and the core data remains unresolved. The existence of the channel features (and their effects on local groundwater flow patterns) remains unresolved."

Finally, the seismic reflection and refraction data collected at the VEGP site as part of the ESP application subsurface investigation program and reported by Bechtel Power Corporation (2006) projects the location of the Pen Branch fault at the top of basement rock further to the south than Waddell et al.'s (1995) projected location. As a result, the seismic reflection data collected by Waddell et al. do not traverse the Pen Branch fault and are not appropriate for use in determining the presence of fissures or fractures in the BBM. Based on the information available there is no indication that communication exists between the Water Table aquifer and the confined aquifers through the BBM on the VEGP site. The location of Waddell et al.'s seismic reflection survey is shown on SSAR Figure 2.5.1-34.

References:

Bechtel Power Corporation, 2006, Geologic Interpretation of Seismic Reflection Data at Vogtle Plant Site, Report Number 25144-006-V14-CY06-00008-001, August.

Summerour, J.H., Shapiro, E.A., and Huddlestun, P.F., 1998, An Investigation of Tritium in the Gordon and Other Aquifers in Burke County, Georgia, Phase II: Georgia Geologic Survey Information Circular 102, 72 p.

Waddell, M.G., Keith, J.F., and Domoracki, W. J., 1995, High resolution seismic characterization GGS-1, Burk county, GA; University of South Carolina Project Report to Georgia Geologic Survey, ESRI Technical Report 95-F129-1, 20 p., 2pl.

*The above references were previously provided in response to RAIs on the SSAR.

Section 2.4 Ecology

E2.4-1b Sections 2.4.1 Terrestrial Ecology, 4.3.1 Terrestrial Ecosystems The following questions pertain to the wetland delineation report submitted with the RAI responses:

a. Provide the methodology for determining which areas onsite were surveyed for wetlands. For example, it appears the small stream that flows into Mallard Pond from the spring originating in Utley Cave was not surveyed. Will this stream be impacted by dewatering? In addition, the disturbance area figure provided in the RAI response delineates several small basins near the southern temporary construction area (between retention ponds 1 and 2), but these are not depicted on any of the wetlands maps. Please explain if these areas were included in the wetlands survey, i.e., were they evaluated and determined to be nonjurisdictional?

Response:

a. The entire VEGP site was surveyed for wetlands. Forms were submitted to the US Army Corps of Engineers (USACE), Savannah District for jurisdictional determination. Any areas with the potential to contain wetlands were included in the survey.

No perennial surface streams flow into Mallard Pond. The Utley Cave is a limestone solution cavity located at the south end of Mallard Pond that provides groundwater discharge directly to the pond. The cave is submerged beneath the water surface of Mallard Pond at normal pond water levels and no surface flow is associated with Utley Cave.

The areas indicated as basins between retention ponds 1 and 2 in the disturbance area figure provided in the 1/30/07 RAI response (Letter AR-07-0061) were evaluated during the survey and are believed to be non-jurisdictional.

b. Mallard Pond is included in the jurisdictional waters GIS data included in Enclosure 3, but it is not identified as a jurisdictional wetland, or even mentioned in the wetland delineation report. Was Mallard Pond evaluated for jurisdictional status, and if so, what was the result of that evaluation?

Response:

b. Mallard Pond was evaluated during the wetland delineation survey and was identified as a Jurisdictional Water of the United States, in accordance with 33 CFR 328. Jurisdictional Determination request forms have been submitted to the Savannah District USACE to support identification of jurisdictional wetlands on the VEGP site. Mallard Pond does not meet the technical criteria for wetland determination as required by the 1987 Corps Wetland Delineation Manual.

c. The wetlands delineation "GIS" data provided in Enclosure 3 was output from a CAD system rather than a GIS system; are these data geo-referenced, and if so, what is the coordinate system, datum, etc.?

Response:

c. The UTM 17 coordinate system should be used to geo-reference the wetland delineation data provided in Enclosure 3 of the 1/30/07 RAI response (Letter AR-07-0061).

E2.4-2g Section 2.4.1 – Terrestrial Ecology and 4.3 Terrestrial Ecosystems Provide a copy of the referenced report (2000 GPC Transmission line T&E survey report).

Response:

A copy of the requested report was provided by Georgia Power Company personnel as a follow up to the site audit. A duplicate copy is provided in Enclosure 2.

E2.4-2h Section 2.4.1 – Terrestrial Ecology and 4.3 Terrestrial Ecosystems Provide a copy of the red-cockaded woodpecker safe harbor agreement application as soon as it is finalized.

Response:

The Safe Harbor Agreement is currently under final review with the U. S. Fish and Wildlife Service. This is the last external approval required and it is expected to be completed in the next three weeks. Once the Safe Harbor agreement is finalized a copy will be forwarded to the NRC. All areas expected to be impacted by Units 3 & 4 construction activities were excluded from the Safe Harbor Agreement.

E2.4-3 Section 2.4.2 – Aquatic Ecology Provide copies of the following reports:

• Matthews, R.A., and C.F. Muska. 1983. Shortnose and Atlantic sturgeon in the Savannah River. DPST-83-753. E. I. du Pont de Nemours and Company, Aiken, South Carolina.

• Paller, M.H., B. M. Saul, and D.V. Osteen. 1986. Distribution and Abundance of Ichthyoplankton in the Mid-Reaches of the Savannah River and Selected Tributaries. Prepared by Environmental and Chemical Sciences, Inc., for Savannah River Laboratory, E. I. du Pont de Nemours and Co., Aiken, S.C.

• Wiltz, J. 1981. Savannah River Fish Population Study and Impingement Prediction for Plant Vogtle, Burke County, Georgia. Report to Georgia Power Co.

Response:

The original Muska et al. reference was cited in error. The actual document used was:

Muska, C.F., and R.A.Matthews. 1983. Biological Assessment for the Shortnose Sturgeon, Acipenser Brevirostrum Lesueur 1818 The Savannah River Plant. DPST-83-754. E. I. du Pont de Nemours and Company, Aiken, South Carolina.

Muska, et al. 1983 (corrected reference) is provided in Enclosure 2

Paller, et al. 1986 is provided in Enclosure 2

*Wiltz 1981 was cited in the RAI's as additional sources on the Savannah River.

* There are a number of reports produced by Georgia Power biologist J. Wiltz and others related to the Savannah River aquatic community. These reports are on the Docket for Vogtle Unit 1 and Unit 2 supporting the Environmental Report for licensing of those units. Copies of these reports are provided in Enclosure 2.

Section 2.5.3 Historic Properties

E2.5-3 **Section 2.5.3 Historic Properties, Section 4.1.3 Historic Properties, and Section 5.1.3 Historic Properties and Cultural Resources In response to RAI E2.5-2, SNC stated that further documentation from the Georgia SHPO has been delayed pending resolution of COL-related issues. What new issues have arisen? With respect to the proposed intake structure, what new modifications have been proposed? A change in SNC's project plan could significantly affect the staff's impact assessment in the Vogtle ESP environmental impact statement.**

Please provide any and all correspondence to or from the Georgia SHPO pertaining to the protection of significant cultural resources at the Vogtle site not previously provided to the NRC. In particular, please provide the SNC response to the Georgia SHPO committing SNC to address the recommendations in the SHPO October 4, 2006, letter and committing to protective measures for 9BK416 and 9BK423.

Response:

Based on the recent design alternatives to the intake structure (part of the COL), the intake piping route will traverse west southwest from the river to Units 3 & 4, instead of following the road to the proposed intake. This routing will result in a significantly shorter and more direct route to Units 3 & 4. However, SNC believes that this route has potential to impact the archeological site 9BK416. The route will produce a disturbance consisting of an approximately 70-foot wide by 15-foot deep trench that will house the intake piping and electrical conduit. Site 9BK416 is located in an area that was previously disturbed by many years of farming. SNC has scheduled a meeting with the Georgia SHPO in May 2007 to discuss the proposed route.

Archeological site 9BK423 will not be impacted by the proposed routing of the intake piping. Protective measures discussed with the Georgia SHPO regarding this site will be confirmed during the May 2007 meeting and SNC will provide a letter to the Georgia SHPO documenting all commitments associated with the protection of the archeological sites.

Section 3.9 Pre-Construction and Construction Activities

E3.9-3 **Section 3.9.2.7 Clearing, Grubbing, and Grading The borrow areas for this project are not identified either on the disturbance footprint figure referenced in this response, or in the GIS data included in Enclosure 3. In addition, the borrow areas are not included in the 500 acre estimate for disturbance (E4.3-1c).**

Please clarify.

Response:

Borrow material will be obtained from Unit 3 & 4 powerblock excavation and switchyard lowering activities. Both the powerblock and switchyard areas are identified in the 1/30/07 RAI response (Letter AR-07-0061) on the Disturbed Areas figure and included in the E4.3-1c disturbance area estimates. SNC believes that adequate borrow material is available from excavation of the powerblock and switchyard areas, such that disturbance of other site areas to obtain borrow material is unlikely.

E3.9-4 & 3.9-5

Sections 3.9.2.9 Docking and Unloading Facilities Installation and 3.9.2.10 Intake/Discharge Coffer Dams and Piling Installation and other portions of 3.9.2 The response for E3.9-4 suggests that 300 cubic yards of sediment will be dredged to construct the barge slip, intake structure, and discharge structure.

The response to E3.9-5 states that there will be 300 cubic yards of dredge material from just the barge slip. Please clarify the total volume to be dredged, and indicate if any will come from the intake and discharge structures.

Response:

The reference to dredging 300 cubic yards of material applies only to the barge slip construction. At this time, no dredging is anticipated to support the intake structure or discharge structure work. Dredged material will be managed in an upland spoil area.

Section 4.2 Water-Related Impacts

E4.2-1 Section 4.2.2 Water Use Impacts (Construction)

a. Provide the Bush (1974) document referenced in the RAI response.

Response:

a. The reference **(Bush 1974)** Bush, R.Y. 1974, Alvin W. Vogtle Nuclear Plant – Excavation Dewatering, letter form R.Y Bush to J.D. Duff, is included in Enclosure 2.

b. The applicant states in the RAI response that the water surface elevation of the pond will not fall below the entrance elevation of the standpipe (i.e., water will never cease to be discharged from Mallard Pond). Please state what the minimum outflow discharge from Mallard Pond is expected to be during future construction activities.

Response:

b. The Bush 1974 letter indicates that the flow from Utley Cave into Mallard Pond (also referred to as Mathes Pond) was determined to be approximately 900 gallons per minute (gpm), calculated using rough measurements. This information was determined during excavation activities in 1974. In 1985 Bechtel conducted a study to determine the flow from Mallard Pond and the tributary to the west using actual field measured flow values. The flow rate from Mallard Pond was determined to be approximately 335 gpm (Bechtel 1985). This value is consistent with the flow rate of 300 gpm determined by Bush in 1972. SNC believes that the 1985 Bechtel study confirms an error in the 1974 Bush calculation of 900 gpm flow into Mallard Pond (Bechtel 1972). Bush acknowledges in his report that the 900 gpm was an estimated value subject to error. SNC compared the 335 gpm flow from Mallard Pond with the 300 gpm recharge potential determined by Bechtel and concludes that dewatering activities could produce up to an approximately 10 percent reduction in flow to Mallard Pond. A 10 percent reduction in flow is not anticipated to produce adverse impacts to the pond or the connected stream.

Additionally, the observations reported for the dewatering activities during backfilling of the excavated area for Units 1 & 2 indicated the drawdown influence was not exerted beyond 50-feet from the line of wellpoints (Bechtel 1980). Since Mallard pond is located approximately 2,000 feet from the proposed

excavation area for Units 3 & 4, dewatering activities during excavation and backfilling should not significantly impact the pond.

It is noted that the flow rate of 250 gpm presented in the response to the original RAI E4.2-1 is inaccurate. The actual flow rate was determined to be 335 gpm (Bechtel 1985).

Reference:

(Bechtel 1972) Bechtel Power Corporation, 1972, Aquifer Tests for Construction Dewatering, Vogtle 8.7.1

(Bechtel 1980) Bechtel Power Corporation and Georgia Power Company, 1980, Final Report on Dewatering and Repair of Erosion in Category I Backfill in Power Block Area, Vogtle 5.16

(Bechtel 1985) Bechtel Corporation, Flow Rate in Mathes Pond Stream & West Branch Stream, Calculation Number G-008, Vogtle Nuclear Power Plant, Job No. 9510-091, 1985

(Bush 1974) Bush, R.Y. 1974, Alvin W. Vogtle Nuclear Plant – Excavation Dewatering, letter form R.Y Bush to J.D. Duff

Section 4.3 Ecological Impacts

E4.3-1c Section 4.3.1 Terrestrial Ecosystems This response identifies 25.7 acres of habitat will be removed onsite for the new 500 KV transmission line. This acreage is not identified on the disturbance figure provided in the RAI response. Is the route onsite known? If so, provide information on the location and types of habitats that will be removed for this line onsite.

Response:

The 25.7 acre habitat designated for the new 500 kV transmission line in the table provided with the response to RAI E4.3-1c, represents only the onsite portion of the line. The entire line will impact approximately 1,029 acres offsite. The habitat types associated with the offsite portion of the line are documented in the January 2007 Corridor Study – Thomson – Vogtle 500 kV Transmission project **(Photoscience 2007).** The 25.7 acres of onsite habitat is located from the new switchyard west along the existing Vogtle-Scherer 500 kV corridor. The new line will begin in the new switchyard and is routed due West across the South end of Mallard Pond until it exits the site boundary just before crossing River Road. The right-of-way is 150 feet wide and the transmission towers will be strategically located to free span Mallard Pond and minimize any habitat impacts. The habitat impacted is primarily previously disturbed area consisting of planted loblolly pine, industrial areas, and open fields. The area around Mallard Pond that is crossed by the line is estimated at 1.4 acres with the majority of that area consisting of the pond and a small amount of bottomland hardwood habitat. The remaining 24.3 acres is a mixture of planted loblolly pine, previously disturbed industrial areas, and open fields. No significant amount of habitat will be "removed." The primary potential for impact associated with transmission lines is construction of the transmission tower structures. There will be six structures located on the Vogtle site associated with the new 500 kV line. The total acreage impacted by transmission structures is estimated at approximately 3 acres.

Reference:

(Photoscience 2007) Corridor Study – Thomson – Vogtle 500 kV Transmission, January 2007

Section 4.4 Socioeconomic Impacts

E4.4-3 Section 4.4.2 Social and Economic Impacts In the original RAI, the staff requested the Bechtel report associated with Table 4.4.2-1 of the Report ER. The response to this RAI from SNC contained data that may or may not have been from the Bechtel report, as it did not reference the Bechtel report. Provide the Bechtel report or the documents that were used to develop the information in Table 4.4.2-1 of the ER.

Response:

There is no Bechtel "report" associated with Table 4.4.2-1. The information contained in the table was developed by Bechtel and provided to Tetra-Tech for analysis and inclusion in Chapter 4. In addition, the Westinghouse DCD and Site Interface documents provide insight into the construction workforce. Bechtel has a tremendous amount of experience with large construction projects and relied on this experience to produce the information in the referenced table.

Section 4.5 Radiation Exposure to Construction Workers

E4.5.2-2 Sections 4.5.2.2 Gaseous Effluents and 4.5.2.3 Liquid Effluents In response to this question, SNC states that "Section 4.5 has been revised in January 2007 to report annual effluent release values for the year 2002." However, in the revised ER Section 4.5 (Attachment 1 to January 30, 2007 letter), SNC uses 2002 data for gaseous effluents and 2001 data for liquid effluents. Justify why SNC did not use liquid effluent data from 2002, as stated in response to this RAI question.

Response:

Section 4.5.2.2 of Revision 2 states that the 2002 gaseous effluent releases were selected because they resulted in the maximum exposure to the public between 2001 and 2004.

Section 4.5.2.3 of Revision 2 states that the 2001 liquid releases were selected because they resulted in the maximum exposure to the public between 2001 and 2004.

E4.5.3-1 Section 4.5.3.1 Direct Radiation In response to this question, SNC uses TLD data from the Farley ISFSI to project dose rates for the Vogtle ISFSI. SNC uses TLD data from the second half of 2005 to estimate an annual dose at 300 feet from the Vogtle ISFSI of 7.5 mrem from three casks. SNC then states that the expected annual dose from six casks would be double this number, or 15 mrem. In the response, SNC states that the initial loading date for the ISFSI may be advanced from the initial loading date of 2014 to 2012, and that, if this date is used, 12 casks would be placed in service by July 1, 2013, and 18 casks by July 1, 2015.

As such, there are additional uncertainties associated with these analyses, and the results may or may not be conservative. First, SNC raises the possibility that an alternative underground cask design may be utilized that would significantly reduce the projected direct doses to construction workers. Second, SNC raises the possibility that a potential alternative ISFSI location would add 1000 ft between the ISFSI location and the construction workers, also reducing the projected direct doses to construction workers. A third uncertainty is the construction initiation date that, as stated in ER Section 3.9, could be as early as 2010 or as late as 2032. ER Section 3.9 states that the ER is written broadly enough to be applicable over this range of construction initiation dates; however, this is not the case for construction worker direct doses resulting from

the ISFSI. Later construction initiation dates could result in a significantly greater cask load than projected in the analyses (i.e., 6 casks) or even as requested here (i.e., analyses for up to 18 or more casks). Because it appears that the Vogtle ISFSI may be loaded with more than six casks during the time period when site preparation workers are on site, provide an estimate of the ISFSI dose rate to these workers when the ISFSI is loaded with 12, 18, or more casks (the number of casks in the ISFSI would be dependent on the loading schedule for the ISFSI and the construction schedule for Units 3 and 4).

Response:

The use of the underground storage cask design and/or alternate ISFSI location would only reduce the projected direct dose to construction workers and should not be considered as an uncertainty when determining whether the calculation is conservative. Neither of the alternatives discussed above was assumed when determining the ISFSI dose to construction worker. As for the uncertainty associated with initiation of ISFSI construction; it was assumed in the 1/30/07 RAI response (Letter AR-07-0061) that construction would start in 2010 also making it a conservative assumption. At this time no construction initiation delays are anticipated for Units 3 & 4. If Units 3 & 4 construction initiation is delayed, SNC will evaluate the delay as potential New and Significant information during the COL process. Under a delayed Units 3 & 4 construction initiation scenario, the ISFSI would likely already be in service with site specific direct dose measurements available. The 1/30/07 RAI response (Letter AR-07-0061) uses the best available data and the most conservative assumptions. At this time, no details have been finalized regarding when and where the ISFSI will be built. Accurately estimating the dose to construction worker from the ISFSI is difficult due to the high number of variables in cask loading and the non-linear relationship between number of casks stored and dose. As was measured at the Farley ISFSI, a doubling of the casks stored increased the measured dose by only 2.4 mrem (12.9 mrem for 3 casks to 15.3 mrem for six casks). Regardless of when and where the ISFSI is constructed, and how many casks are stored, fencing will be placed around the ISFSI so that doses at the ISFSI boundary remain within the allowable limit of 0.1 rem per year (10CFR20.1301).

E4.5.3-2 Section 4.5.3.1 Direct Radiation In response to this question, SNC uses TLD data from 2003 to establish the estimated direct radiation dose to construction workers.

a. Using comparisons with other years for which this data is available, justify why SNC selected 2003 as the representative year to use for estimating direct radiation dose to construction workers.

Response:

a. TLD data from 2003 was used to calculate the estimated direct radiation dose to construction workers because it was the most complete and representative data set available at the time the ESP was submitted. Calculations using the most recent TLD data (2006) yield similar results.

For 2006, six Plant TLD stations (Stations G, H, I, J, K and L) along the VEGP Units 1 & 2 Protected Area Fence closest to the proposed construction site were selected to determine the average annual accumulated exposure dose estimate of 114.5 mrem year (at 89.04% capacity factor). Sixteen Environmental TLD stations surrounding the site (Stations 1-16) were used to determine the average annual background dose estimate of 52.4 mrem per year. Construction worker dose was estimated by subtracting the annual accumulated exposure dose estimate by the average annual background dose estimate and applying a conversion factor for a 2,000 hour work year (0.228). See 2006 values below:

114.5 mrem per year – 52.4 mrem per year = 62.1 mrem per year

62.1 mrem per year * 0.228 = 14.2 mrem per 2,000 hour work year

TLD Measurements Used to Determine Dose Estimate at Protected Area Fence			
	2006 Data		
Average Plant Capacity Factor	1st 6 Mo. 91.62%	2nd 6 Mo. 86.50%	Annual 89.04%
Station Locations	1st 6 Mo. Net Dose (mrem)	2nd 6 Mo. Net Dose (mrem)	2006 Net Dose (mrem)
Protected Area Fence Station G	57.1	62.8	119.9
Protected Area Fence Station H	50.5	56.9	107.4
Protected Area Fence Station I	55.2	56.0	111.2
Protected Area Fence Station J	54.9	59.4	114.3
Protected Area Fence Station K	57.9	61.1	119.0
Protected Area Fence Station L	56.8	58.4	115.2
Average Dose along Protected Area Fence Adjacent to Construction (Stations G,H,I,J,K & L)			114.5

TLD Measurements Used to Determine Background Dose Estimate					
	2006 Data				
Average	1st quarter	2nd quarter	3rd quarter	4th quarter	Annual
Plant Capacity Factor	87.79%	95.40%	88.89%	84.12%	89.04%
	Environmental TLD Data				
Environmental TLD Station Location	1st quarter Net Dose (mrem)	2nd quarter Net Dose (mrem)	3rd quarter Net Dose (mrem)	4th quarter Net Dose (mrem)	2006 Net Dose (mrem)
TDL Station 1	15.5	15.7	17.2	17.9	66.2
TDL Station 2	12.8	13.2	12.6	14.1	52.6
TDL Station 3	14.2	14.5	14.9	17.4	60.9
TDL Station 4	15.0	13.3	13.4	15.1	56.8
TDL Station 5	12.1	13.0	13.1	14.9	53.1
TDL Station 6	10.9	10.6	10.6	12.2	44.2
TDL Station 7	11.5	11.0	10.5	12.5	45.4
TDL Station 8	12.5	11.8	11.5	12.9	48.6
TDL Station 9	13.2	12.4	12.4	13.7	51.7
TDL Station 10	13.8	13.3	13.0	14.3	54.3
TDL Station 11	13.8	12.6	12.8	14.0	53.1
TDL Station 12	12.9	11.5	12.0	12.6	48.9
TDL Station 13	11.9	10.8	11.7	12.4	46.7
TDL Station 14	12.8	12.2	12.7	13.5	51.1
TDL Station 15	13.5	13.3	14.3	14.3	55.3
TDL Station 16	12.4	11.7	12.1	13.3	49.5
Average Background Dose Measurement					52.4

b. In the response, SNC provides a table of TLD readings from six TLDs for the first and second halves of 2003. Although the TLD readings for the first half of 2003 were made when Vogtle had an average capacity factor of 99.95 percent, the plant average capacity factor for the second half of 2003 was only 90.13 percent, for an average capacity factor of 95 percent for 2003. Provide the estimated annual direct dose contribution to construction workers based on a 100 percent plant capacity factor.

Response:

b. It is difficult to accurately adjust TLD readings to a 100 percent capacity factor. To estimate the annual direct dose contribution to construction workers based on 2003 data at a 100% plant capacity factor, the average annual dose measured along protected area fence adjacent to construction (115.9 mrem at 95.00% capacity) was multiplied by 1.05, resulting in an estimated annual dose of 121.7 mrem.

The calculation for the 2003 data at 100% capacity factor would thus read:

121.7 mrem per year – 49.0 mrem per year = 72.7 mrem per year

72.7 mrem per year * 0.228 = 16.6 mrem per 2,000 hour work year

To estimate the annual direct dose contribution to construction workers based on 2006 data at a 100% plant capacity factor, the average annual dose measured along protected area fence adjacent to construction (121.7 mrem at 89.04% capacity) was multiplied by 1.1096, resulting in an estimated annual dose of 127.0 mrem

The calculation for the 2006 data at 100% capacity factor would thus read:

127.0 mrem per year – 52.4 mrem per year = 74.6 mrem per year

74.6 mrem per year * 0.228 = 17.0 mrem per 2,000 hour work year

c. The occupational exposure time used in the Vogtle ER, Section 4.5.4, was reduced from 2080 hr/yr in ER Revision 0 to 2000 hr/yr in SNC's response to RAI's, Attachment 1, Revision to Environmental Report 4.5, dated January 30, 2007. An occupational exposure time of 2080 hr/yr was used in ESP applications for other sites and has been found appropriate for converting annual dose to expected annual worker dose. Please provide support for selecting an exposure time of 2000 hr/yr.

Response:

c. The occupational exposure time was reduced from 2,080 working hours per year to 2,000 working hours per year to be consistent with 10 CFR 20 and Vogtle standard reporting practices. See 10 CFR 20.1003, *working level month.*

E4.5.3-3. Section 4.5.3.1 Direct Radiation The SNC response assumes the direct radiation dose from Units 1 and 2 will be representative of the direct radiation dose from Unit 3 to the Unit 4 construction workers. Section 4.5 of the ESRP (NUREG-1555, p. 4.5-5) guides the reviewer to verify that radiation source strengths associated with adjacent nuclear facilities have been accurately predicted. Please provide support for this assumption, i.e., that the direct radiation dose from Units 1 and 2 is representative of the direct radiation dose from an operating Unit 3 to the Unit 4 construction workers. This support may include, but is not limited to, comparison to plant-specific design information (i.e., AP1000 design control document), comparison to data from plants with design similar to the proposed AP1000, or results of new calculations.

Response:

According to the Westinghouse DCD, Section 12.3 Radiation Protection Design Features, Rev. 15 (DCD Figure 12.3-1, Sheet 1 and 2 of 16), areas located outside the boundary of the operating unit fence line are classified as Zone 0 and have an associated dose rate of less than or equal to 0.05 mrem/hr. Actual dose rates measured at VEGP Unit 1 and 2 are considerably less than those referenced in the DCD. Both the existing VEGP Unit 1 and 2 reactors and the AP1000 design are pressurized water reactors (PWRs). Because no operational data are available for the AP1000, and data are available for the two existing PWRs at VEGP, it seems reasonable to use the Unit 1 and 2 doses as surrogates for the AP1000.

E4.5.4-1 Section 4.5.4.2 Gaseous Effluents In the revised version of ER Section 4.5 (Attachment 1 to January 30, 2007 letter), there are several places where "TBD" (to be determined) is listed in place of actual dose or dose rate values. Provide these values, or state when these missing values will be provided.

Response:

This information was included in Rev 2 of the ESP application and is recited below:

4.5.4.2 Gaseous Effluents

The annual gaseous effluent doses to a Unit 4 construction worker after Unit 3 is operating (Section 4.5.3.2), which accounts for an exposure time of 2,000 hours per year, are 0.077 mrem for the total body, and 0.16 mem for the critical organ (lung) from Units 1 and 2 gaseous effluent releases and 0.74 mrem for the total body, and 2.51 mrem (skin) for the critical organ from Unit 3 gaseous effluent releases. The total dose is 0.81 mrem total body and 2.60 mrem to the critical organ (skin).

E4.5.4-2 Section 4.5.4.4 Total Doses In the revised version of ER Section 4.5 (Attachment 1 to January 30, 2007 letter), there are several places where "TBD" (to be determined) is listed in place of actual dose or dose rate values. Provide these values, or state when these missing values will be provided.

Response:

This information was included in Rev 2 of the ESP application and is recited below:

4.5.4.4 Total Doses

The annual doses from all three pathways are summarized in Table 4.5-1 and compared to the public dose criteria in 10 CFR 20.1301 and 40 CFR 190 in Table 4.5-2 and Table 4.5-3, respectively. The unrestricted area dose rate in Table 4.5-2 was estimated from the annual TLD doses. Since the calculated doses (24.1 mrem per year and 0.012 mrem per hour) meet the public dose criteria of 10 CFR 20.1301 and 40 CFR 190, the workers will not need to be classified as radiation workers. Table 4.5-4 provides documentation confirming that the doses also meet the design objectives of 10 CFR 50, Appendix I, for gaseous and liquid effluents.

The maximum annual collective dose to the AP1000 construction work force (4,400 workers) is estimated to be 106 person-rem. The calculated doses are based on available dose rate measurements and calculations. It is possible that these dose rates will increase in the future as site conditions change. However, the VEGP site will be continually monitored during the construction period and appropriate actions will be taken as necessary to ensure that the construction workers are protected from radiation.

Table 4.5-1 Annual Construction Worker Doses

	Annual Dose (mrem)		
	Total Body	Critical Organ	Total Effective Dose Equivalent (TEDE)
Direct irradiation	22.9	NA	22.9
Gaseous effluents	0.81	2.6 (skin)	1.16
Liquid effluents	0.025	0.037 (GI-LLI)	0.034
Total	23.8	2.6 (skin)	24.1

Table 4.5-2 Comparison with 10 CFR 20.1301 Criteria for Doses to Members of the Public

Criterion	Dose Limit	Estimated Dose (TEDE)
Annual dose (millirem)	100	24.1
Unrestricted area dose rate (millirem/hour)	2	0.012

Table 4.5-3 Comparison with 40 CFR 190 Criteria for Doses to Members of the Public

Organ	Annual Dose (mrem)	
	Limit	Estimated
Total body	25	23.8
Thyroid	75	1.4
Other organ	25	2.6 (skin)

Table 4.5-4 Comparison with 10 CFR 50, Appendix I Criteria for Effluent Doses

	Annual dose (mrem)	
	Limit	Estimated
Total body dose from liquid effluents	3	0.025
Organ dose from liquid effluents	10	0.037 (GI-LLI)
Total body dose from gaseous effluents	5	0.81
Organ dose from radioactive iodine and radioactive particulates in gaseous effluents	15	0.81 (thyroid)

Section 5.2 Water-Related Impacts

E5.2-1 Section 5.2.2 Water Use Impacts (Station Operation), Section 5.2.2.2 Groundwater

a. Provide the Georgia Power (1974) and Aadland et al. (1995) documents referenced in the RAI response.

Response:

a. The references Georgia Power Company, Environmental Report, Alvin W. Vogtle Nuclear Plant, March 4 (Georgia Power 1974) and Aadland, Rolf K., Joseph A. Gellici, and Paul A. Thayer, 1995, Hydrogeologic Framework of West-Central South Carolina, State of South Carolina Department of Natural Resources, Water Resources Division, Report 5 (Aadland et al. 1995) are included in Enclosure 2.

b. The applicant states in the RAI response, "SNC (2005) notes that downstream of the site, the Savannah River cuts through the semi-confining unit separating the Cretaceous and Tertiary aquifers." Please confirm that the applicant meant "downstream" and not "upstream" per Clarke and West (1997, Figure 5).

Response:

b. The sentence should read as follows: From the fall line to a point a few miles south of the VEGP site, the Savannah River has downcut through the Blue Bluff marl confining layer and into the underlying Tertiary aquifer, thereby allowing the Tertiary and the semi-confined Cretaceous aquifer to discharge locally to the Savannah River.

c. There is an error or a typographical error in the last row and last column of Table 7 of this RAI response. The 8.8 ft drawdown appears to be incorrect. The only change in Case No. 6, as presented, is an extension of time; however, the prior presented cases (i.e., No. 1 through No. 5) illustrate a steady-state response of 1.9 ft drawdown has been reached. The applicant should review and comment accordingly.

Response:

c. The 8.8 for the drawdown value for Case #6 was indeed a typo. The value should be 1.9 feet as completed in the Table below.

Table 7
Confined Leaky Aquifer Equation
Current Operations

Case	1	2	3	4	5	6
Distance (FT)	5,700	5,700	5,700	5,700	5,700	5,700
Storage Coefficient	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031
Transmissivity (FT^2/day)	21,123	21,123	21,123	21,123	21,123	21,123
Time (Days)	3,650	7,300	10,950	14,600	18,250	21,900
Flow, Q (gpm)	730	730	730	730	730	730
Confining Unit b' (FT)	146	146	146	146	146	146
K' Ft/Day	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045
Drawdown at property boundary (feet)	1.9	1.9	1.9	1.9	1.9	1.9

d. Provide additional detail on the deep production wells, MU-1, MU-2A, and TW-1. The needed detail for each well includes location coordinates and datum, well log, screened interval(s) (state whether the interval is completely open, or define screened intervals if only selected intervals are open), and start of service dates.

Response:

d. SNC has conducted an exhaustive historical document search to locate the requested production well information. The research has yielded the majority of the requested information, including the well details for TW-1 and a proposed well detail for MU-2A, which are presented in the following table. Included in Enclosure 2 is the well schematic and boring log for TW-1 and the proposed well schematic for MU-2A. The remaining well MU-1 is believed to be similar in design to MU-2A.

Well I.D.	Well Coordinates N	Well Coordinates E	Installation (Yr)	In Service Date (YR)	Well Diameter (in)	Well Depth (ft)	Well Screen Details (intervals in feet)
MU-1	9425	10531	1977	1977*	26	197	N/A
MU-2A	8820	8400	1983	1983	26	225	Intervals** 485 – 525, 558 – 578, 645 – 655, 745 – 785, & 826 - 856
TW-1	7738	9984	1972	1999	28	219	Intervals – 505 – 535, 560 – 590, 695 – 705, 730 – 750, & 820 - 850

N/A – Not Available
* - MU-1 was initially used during construction.
** - Information based on the proposed well details

Section 5.3 Cooling System Impacts

E5.3-2 Section 5.3.1.2 – Aquatic Ecosystems Provide copies of screen operating records, including the frequency of rotating the screens.

Response:

Screen operating records are not maintained at VEGP; however, screen operations are governed under Procedure #13728-C Rev3.2 – Traveling Screen and Wash System. According to the procedure, a screen washing cycle is initiated once every eight hours or on a high screen differential of six inches of water. At high screen differentials greater than 12 inches the screens shift to high speed. Additionally, plant personnel inspect and run the screens every shift to verify proper operation.

E5.3-4 Section 5.3.3 (Heat Dissipation Systems), Section 5.8.1.3 (Visual Intrusions) Revision 1 of the ER contains updated results from the SACTI model using additional meteorological parameters. Please provide the Revision 1 meteorological data used in the SACTI analysis.

Response:

This information has been provided to the NRC by email and by letter AR-07-0857 dated April 20, 2007.

Section 5.11 Transportation of Radioactive Materials

The following question was inadvertently omitted from NRC's December 29, 2006 letter to SNC, therefore there is no applicable RAI reference number. The issue was discussed during a November 29, 2006 conference call, during which SNC indicated it would examine the issue.

In the first three ESP EISs, the irradiated fuel source term used in the transportation impact analyses was taken from INEEL 2003, Early Site Permit Environmental Report Sections and Supporting Documentation. The source term for the AP1000 in INEEL 2003 included the inventories of radioactive material associated with the fuel (i.e., fission products, actinides and daughters) but no information about activation products and "crud" (i.e., deposited radionuclides on the external surfaces of fuel rods and fuel hardware). For that reason, the NRC concluded in the three ESP EISs that "the impacts of crud and activation products on spent fuel transportation accident risks will need to be examined at the CP/COL stage." Since SNC has selected the AP1000 reactor design, please provide a complete listing of expected crud and activation product radionuclides and quantities for a typical AP1000 spent fuel assembly. Please provide the information in a form (Ci/MTU, Ci/assembly) that can be used to estimate the quantities of crud and activation product radionuclides in a single shipment.

Response:

This information is not currently available from Westinghouse for the AP-1000 design. However, used fuel shipments must meet DOT shipping requirements for dose, based on the 10 mrem per hour at 2 meters regulatory maximum dose. As such, the dose associated with crud is considered in determining the external dose for each cask. The cask would not be shipped until the fuel stored inside the cask decays sufficiently to meet the external cask dose rate limits. At this time, the information on quantities of crud and activation products source term is not available.

Section 6.5 Ecology

E.6.5-1 **Section 6.5.1.2 Ecological Monitoring – Aquatic Resources The last sentence of this response refers to studies conducted by GPC to confirm that the operation of the intake and discharge at VEGP do not significantly impact the aquatic community. Provide copies of these studies.**

Response:

These studies are part of the supporting information on the NRC docket for the Vogtle Unit 1 (NPF-68, Docket No. 50-424) and Unit 2 (NPF-81, Docket No.50-425) Environmental Report and should be available in ADAMS. In order to expedite the review of the ESP Environmental Report, and as a courtesy, SNC has provided duplicate copies of these studies in Enclosure 2.

Section 7.2 Severe Accidents

E7.2-2 **Section 7.2.3.2 Surface Water Pathways SNC did not provide information on surface water users outside of the Savannah River watershed but within a 50 mi radius of the Vogtle site, stating that "There is no available evidence indicating that any inter-basin transfer of surface water." The surface water pathway, as evaluated by the MACCS2 code, is an extension of the atmospheric pathway; it has no relationship to the Savannah River watershed. Please expand the ER listing of surface water users to include all major surface water users within 50 miles of the Vogtle site, to support the severe accident analysis.**

Response:

The MACCS analysis accounts for dose from drinking surface water within the 50-mile radius. Its understood that MACCS calculates the dose from drinking water considering the percent of the area

within a specified radius of any release point that is surface water (this in not provided as input by the user). Using that information and the release information, MACCS calculates a percent of dose attributable to drinking surface water. MACCS does not account for other methods of ingesting surface water.

Questions Regarding the Transmission Corridor Study

Note: there is no applicable RAI reference number for these questions.

1. What construction, operational and maintenance practices will be used in association with the new transmission facilities? Include information on Best Management Practices (BMPs), that will be followed during construction as well as operation and maintenance activities.

- **Describe the clearing methods; temporary and permanent erosion, runoff, and siltation control methods; dust suppression methods; and other construction practices for control or suppression specific to the transmission line corridor.**

- **Describe BMPs being considered to mitigate construction activities.**

- **Describe any and all maintenance practices, such as use of chemical herbicides, roadway maintenance, and mechanical clearing, that are anticipated to affect terrestrial biota.**

- **Describe any special maintenance practices used in important habitats (e.g., marshes, natural areas, and bogs), including those that result in unique beneficial effects on specific terrestrial biota.**

- **Provide the Georgia Power Maintenance Practices manual.**

Response:

Transmission Line siting in Georgia is regulated by Title 22 of the Georgia Code. Georgia Power maintains a Title 22 Compliance Requirements Manual (aka GPC Maintenance Practices Manual) that provides guidance on transmission siting and maintenance activities. This manual provides the necessary guidance to the personnel responsible for siting all the way through construction of the line. A copy of this manual was provided during the March 7, 2007 NRC site visit and is included in Enclosure 2. Best management practices are a major part of the controls utilized to ensure environmental impacts associated with transmission line activities are minimized. The Georgia Erosion and Sedimentation Control Act provides a guidance manual to support control of stormwater runoff. The use of herbicides is strictly controlled and special practices are in place to ensure sensitive areas such as wetlands are protected. Section 5.6 of the Environmental Report provides information about transmission line maintenance practices. The new 500 kV line will be maintained in a manner consistent with the existing lines.

2. Describe cumulative impacts on "important species or habitats" related to construction of the new 500 KV transmission line.

Response:

No cumulative impacts on important species or habitats are anticipated from construction of the proposed new 500 kV line. With the exception of the transmission towers, the environmental impact of transmission line construction is minimal. No significant impacts to species or habitats have been identified.

3. Provide information on the persons and/or entities that consulted with the stakeholder group. Specifically, were USFWS and/or Georgia DNR part of the stakeholder group?

Response:

See Appendix J of the EPRI-GTC Overhead Electric transmission Line Siting Methodology technical report (EPRI Report) for a list of stakeholder meeting invitees. Participants from the Georgia Department of Natural resources (DNR) included Nap Caldwell and Greg Krakow. Federal Agency participants included Lori Beckwith USACE; Gary Craig, USACE; and Chris Hoberg with EPA. USFWS was invited but did not participate. Bob Quigle, from the Rural Utilities Service (RUS) participated as an observer.

4. Provide EPRI-GTC Project Report 2006, including the appendices.

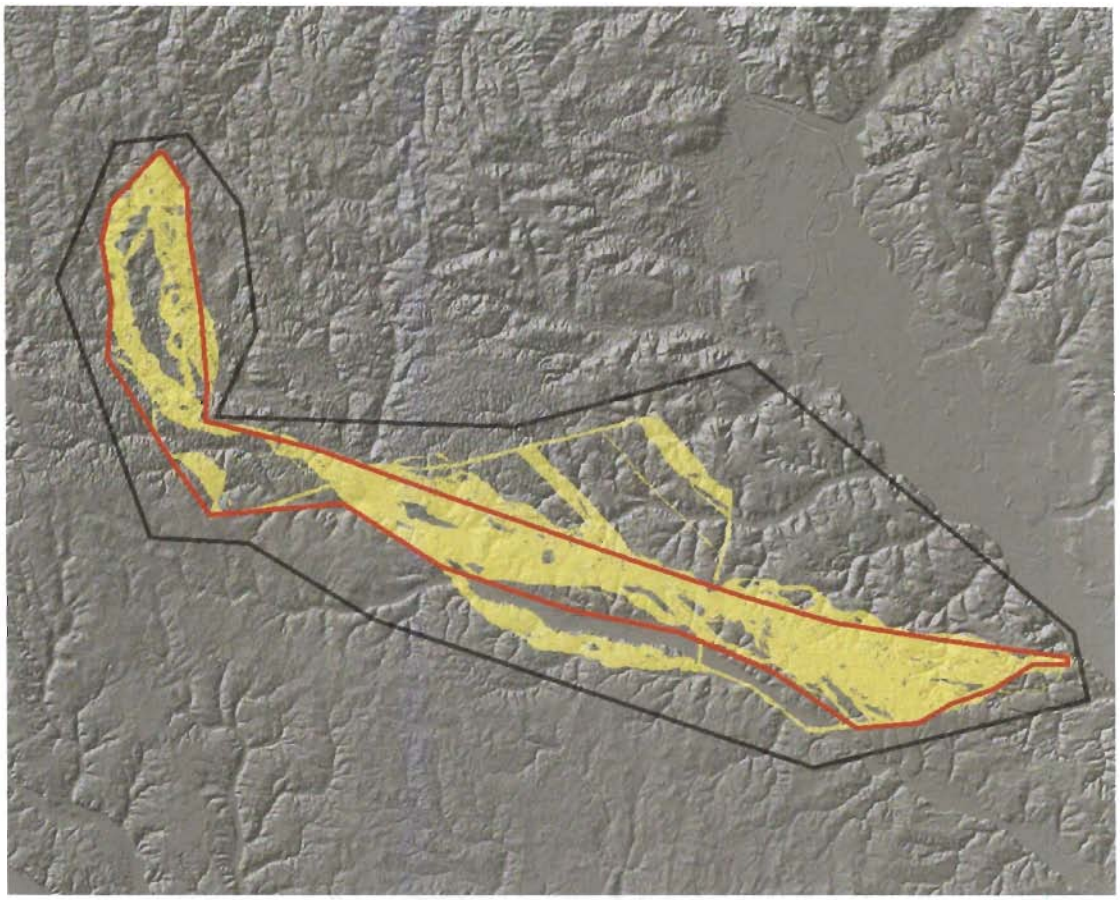
Response:

A copy of the report is provided in Enclosure 2.

5. Provide the total acreage for the Representative Delineated Corridor. In addition, provide acreage for each of the Land Uses. This information would be similar to the information provided in Table 15 of the Corridor Study, but include the entire Representative Delineated Corridor.

Response:

Statistics for the corridors generated from the EPRI Model are included in Table 14 on page 52 of the January 2007 Corridor study, Thomson – Vogtle 500 kV Transmission Project report. Statistics for the representative route (ROW) are included in Table 15 on page 54 of the same report. It is assumed that this request is for the Field Verified Corridor shown below. The statistics for the Field Verified Corridor are provided in the following table.



Land Use Acreage – Field Verified Corridor

Land Use	Acres	Percentage
Commercial/Industrial	175	*0.20%*
Forested	22959	*25.87%*
Open Land	13117	*14.78%*
Open Water	1360	*1.53%*
Pecan Orchard	45	*0.05%*
Planted Pine	29824	*33.61%*
Quarry Mine	650	*0.73%*
Recreational	0	*0.00%*
Residential	549	*0.62%*
Row Crop	13539	*15.26%*
Transportation	5328	*6.00%*
Utility	1185	*1.34%*
TOTAL	**88731**	*100%*

6. Table 15 is a hypothetical corridor based on a 150 ft ROW. This table depicts 91 acres of forested wetland being impacted by the hypothetical ROW. This amount seems high, especially when the Georgia Siting Model value for forested wetlands plus 30 ft buffer is "9". What considerations will be used in the final preferred route selection? Will the evaluation include a similar weighting approach? Please describe the final selection process.

Response:

The value in Table 15 was determined to be an error. A revised Table 15 was provided to the NRC during the March 7, 2007 site visit and the error was explained. The error resulted from use of different data sets for Table 14 and Table 15. The error has now been corrected and the tables are now consistent. The final selection process uses a similar approach to determine a number of alternative routes that are subsequently compared and evaluated to determine the best route. A copy of the revised table is also provided below for convenience.

Table 15: Land Use Acreage - 150' Representative Right-Of-Way

Land Use	Acres	Percentage
Commercial/Industrial	0	*0.00%*
Forested	239.8	*23.30%*
Open Land	157.6	*15.32%*
Open Water	6.4	*0.62%*
Pecan Orchard	0	*0.00%*
Planted Pine	329	*31.97%*
Quarry Mine	10.2	*0.99%*
Recreational	0	*0.00%*
Residential	4.7	*0.46%*
Row Crop	150.3	*14.61%*
Transportation	57.8	*5.62%*
Utility	73.2	*7.11%*
TOTAL	**1029**	*100%*

7. The ER (page 3.7-2) assumes a 200 ft wide ROW, but Table 15 of the Corridor Study assumes a 150 ft ROW. Please address this discrepancy.

Response:

The ER at page 3.7-2 refers to the original assessment for the new transmission line which estimated the required right-of-way at 200 feet. SNC conducted a detailed corridor study in January 2007 to provide the necessary NEPA information for the NRC to reach a decision on transmission lines. This study uses a 150 foot corridor, which is consistent with current GPC siting practices. The new 500 kV corridor right-of-way will be 150 feet wide.

Southern Nuclear Operating Company

AR-07-0924

Enclosure 2

Miscellaneous Documents in Support of Responses to Followup ER RAIs

Contact Person

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Document Components:

Miscellaneous documents in support of responses to followup ER RAIs are contained on one (1) CD-ROM. The CD-ROM is labeled "Miscellaneous Document Files in Support of Responses to Vogtle Followup ER RAIs" and contains a total of 37 files as follows:

File No.	File Title	No. of Kilo-Bytes	Publicly Available
001	Georgia Power 1985.pdf	20,185	Yes
002	GA Powerline TT Report Revised 1-06.pdf	11,713	Yes
003	Muska, et al. 1983	2,706	Yes
004	Paller, at el. 1986	1,790	Yes
005	Beaverdam Creek Anadromous Fish Study.pdf	180	Yes
006	Beaverdam Creek Resident Fish Study.pdf	341	Yes
007	Impact of Const on Macro Population.pdf	432	Yes
008	Macro Survey of Savannah River.pdf	838	Yes
009	Savannah River Adult Fish Study.pdf	674	Yes
010	Savannah River Larval Fish Study.pdf	296	Yes
011	Survey of Drifting Macro of Savannah River.pdf	143	Yes
012	Survey of Feeding Habits of Fishes.pdf	331	Yes
013	Survey of Plankton Community.pdf	289	Yes
014	Bush 1974.pdf	285	Yes

File No.	File Title	No. of Kilo-Bytes	Publicly Available
015	Bechtel 1972.pdf	1,737	Yes
016	Bechtel 1980.pdf	6,515	Yes
017	Bechtel 1985.pdf	949	Yes
018	Thomson_Vogtle Final Corridor report.pdf	10,038	Yes
019	Georgia Power 1974.pdf	1,041	Yes
020	Aadland et al 1995.pdf	787	Yes
021	TW-1 Well Log.pdf	145	Yes
022	MU-2A Proposed Well Design.pdf	86	Yes
023	1_Methods_Procedures_Executive Summary.pdf	3,990	Yes
024	2_ROW_Central Region of GA.pdf	1,486	Yes
025	3_ROW_ Coastal Region of GA.pdf	3,369	Yes
026	4_ROW_East Region of GA.pdf	1,295	Yes
027	5_ROW_Metro Region of GA.pdf	2,318	Yes
028	6_ROW_NE Region of GA.pdf	3,695	Yes
029	7_ROW_NW Region of GA.pdf	3,448	Yes
030	8_ROW_South Central Region of GA.pdf	2,332	Yes
031	9_ROW_SE Region of GA.pdf	3,449	Yes
032	10_ROW_SW Region of GA.pdf	3,368	Yes
033	11_ROW_West Region of GA.pdf	2,992	Yes
034	12_Maint. Recomm. for Pitcher Plants.pdf	1,569	Yes
035	13_Maint. Recomm. for Caves, Nests,Rookeries.pdf	1,818	Yes
036	14_Maint. Recomm. for Granite Outcrop.pdf	3,553	Yes
037	EPRI-GTC Transmission Line Siting Methodology.pdf	4,830	Yes