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NRC000033

October 14, 2008

MEMORANDUM TO: William Burton, Branch Chief  
Environmental Projects Branch 1  
Division of Site and Environmental Reviews  
Office of New Reactors

FROM: John Fringer, Project Manager */RA/*  
Environmental Projects Branch 1  
Division of Site and Environmental Reviews  
Office of New Reactors

SUBJECT: TRIP REPORT – VOGTLE COMBINED LICENSE APPLICATION  
ENVIRONMENTAL SITE AUDIT - AUGUST 2008

The enclosed report summarizes the activities of the site audit performed in response to Southern Nuclear Operating Company's (Southern's) combined license application (COLA) for Vogtle Nuclear Plant, Units 3 and 4. The audit took place on August 11, 2008 through August 12, 2008, at the Vogtle Electric Generating Plant Site (VEGP) near Augusta, GA. Because the Commission has not taken final action on the early site permit (ESP) application, issues addressed in the ESP review cannot be considered fully resolved. Therefore, NRC staff has determined that a full site audit, which would address unresolved issues identified in the ESP review and/or new and significant information (as described in NRC: SECY-06-0220), was not appropriate at this time. The scope of this audit was limited to an examination of Southern's process for identifying new and significant information in three specific areas: aquatic and terrestrial ecology, and hydrology. The audit included document reviews, staff discussions, and onsite observations. The latter included general site, boat, and walking tours of areas that could be affected by the project. The staff also met with Federal and state officials regarding the application and review process.

This report addresses the site audit activities and findings.

Docket Nos.: 52-025 and 52-026

Enclosure: As stated

CONTACT: John Fringer, NRO/DSER RAP1  
301-415-6208

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Distribution:

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OFFICE	PM:RAP1:DSER:NRO	RENV:DSER:NRO	LA:RAP1:DSER:NRO	OGC	BC:RAP1:DSER:NRO
NAME	*J. Fringer	M. Masnik	G. Hawkins	A. Hodgdon	W. Burton
DATE	09/08/08	09/ 23 /08	09/ 25 /08	10/09/08	10/ 10 /08

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Site Audit Trip Report  
Vogtle Electric Generating Plant, Units 3 and 4 COLA  
Southern Nuclear Operating Company

August 11, 2008 – August 13, 2008

The attached report summarizes the activities of the site audit performed in response to Southern Nuclear Operating Company's (Southern's) combined license application (COLA) for Vogtle Nuclear Plant, Units 3 and 4. The audit took place on August 11, 2008 through August 13, 2008, at the Vogtle Electric Generating Plant Site (VEGP) near Augusta, GA. Because the Commission has not taken final action on the early site permit (ESP) application, issues addressed in the ESP review cannot be considered fully resolved. Therefore, the NRC staff has determined that a full site audit, which would address unresolved issues identified in the ESP review or and/or and significant information (as described in NRC: SECY-06-0220), was not appropriate at this time. The scope of this audit was limited to an examination of Southern's process for identifying new and significant information in three specific areas: aquatic and terrestrial ecology, and hydrology. The audit included document reviews, staff discussions, and onsite observations. The latter included general site, boat, and walking tours of areas that could be affected by the project. The staff also met with Federal and state officials regarding the application and review process.

The NRC and Pacific Northwest National Laboratory (PNNL) personnel attending the Vogtle COLA environmental site audit are listed below along with each individual's role in the site audit. This report also includes a schedule of site audit activities occurring daily followed by a summary of those activities and a summary of concerns that arose during the site audit, including a summary of concerns by technical discipline. Table 1 in this report lists all site audit attendees and their affiliations.

NRC Team

John Fringer	Team Lead
Nancy Kuntzleman	Terrestrial Ecology
Mike Masnik	Aquatic Ecology
Jill Caverly	Water Use and Quality

PNNL Team

Mike Sackschewsky	Team Lead
Kim Leigh	Deputy Team Lead
Becky Krieg	Aquatic Ecology
Phil Meyer	Ground Water Use and Quality

## Schedule of Activities

<b>Sunday, August 10, 2008</b>		
<i>Time</i>	<i>Activity</i>	<i>Location</i>
All day	Travel	Airport
<b>Monday, August 11, 2008</b>		
8:00 AM	Arrive at Vogtle site/ Badging	Main Gate
8:30 – 8:45 AM	<u>Introductory meeting</u> : introductions, room logistics, review of schedule, etc	Visitor Center
8:45 – 9:30 AM	General discussion of new and significant process	Visitor Center
9:30 – 11:00 AM	<u>General Site Tour</u> :	Plant Vogtle
<i>Time</i>	<i>Activity</i>	<i>Location</i>
11:00 AM - Noon	<u>Boat tour</u> : Short tour of the Savannah River for NRC, PNNL, and Government agency staff, including existing and proposed new intake and discharge structures	Savannah River
12:10 – 1:00 PM	Lunch	Visitor Center
1:00 – 2:30 PM	<u>Government-to-Government Meeting</u> with State & Federal Agencies, NRC, PNNL	Visitor Center
2:30 – 3:30 PM	Debrief with Southern regarding government-to-government meeting and general question session	Training Center
3:30 – 4:00 PM	CWA Section 404 permitting discussion with USACE and Southern	Training Center
4:00- 4:30 PM	Examination of new and significant information identification process and documentation	Training Center
4:30 - 5:30 PM	<u>NRC/PNNL team debrief meeting</u> : Daily discussion of 1) what was accomplished; 2) status of information review; 3) issues or concerns	Training Center
5:30 – 6:00 PM	Brief daily close-out with NRC/PNNL team, Southern, government agencies	Training Center
<b>Tuesday, August 12, 2008</b>		
8:00 – 8:30 AM	<u>General meeting</u> : announcements, concerns, etc.	Training Center
8:30 to 9:30 AM	Impingement and entrainment monitoring demonstration	Vogtle Units 1&2 intake structure
9:30 – 11:30 AM	<u>Extended Boat tour</u> : SRS intakes, Beaverdam Creek, and ANSP sampling sites.	Savannah River
9:30 – 11:30 AM	<u>Walking tour for terrestrial/hydrology</u> : tour of the disturbance areas, including the new borrow area, proposed intake line, onsite portion of the new transmission line and surface hydrology features.	Vogtle Site
11:30 AM - Noon	Examination of new and significant information identification process and documentation	Training Center
12:00 – 1:00 PM	Lunch	Training Center
1:00 to 3:00 PM	Additional terrestrial ecology (pocket gopher habitats) and surface hydrology field / walking tours	Vogtle Site
1:00-4:00 PM	Examination of new and significant information identification process and documentation	Training Center
4:00 - 4:30 PM	NRC/PNNL team debrief meeting: Discussion of: 1) what was accomplished in breakout sessions; 2) discussion of new and significant information process, and 3) issues or concerns	Training Center
4:30 – 6:00 PM	Close-out with Southern and its contractors	Training Center
<b>Wednesday, August 13, 2008</b>		
All day	Travel	Airport

## **Daily Summary –**

**08/11/08 (Monday) – Morning**

### **Introductory Session**

Introductory remarks were provided by Tom Moorer of Southern and John Fringer, the NRC Environmental Project Manager. After introductions and the general information discussion, Tom Moorer presented a description of the process used by Southern to identify new and significant information, summarized in the following paragraphs.

In preparing the COLA, Southern states that because of the timing of the ESP environmental impact statement (EIS) schedule, it based its review of new and significant information on the ESP draft environmental impact statement (DEIS). Southern also states that it assumed the DEIS reached conclusions in all areas. New information (with respect to the DEIS) was provided to NRC in the form of comments on the DEIS that Southern submitted in December 2007. Some of the new information at that time was based on a better understanding of various aspects, such as peak employment, of the ESP application's Environmental Report; much was also based on expected changes to the Westinghouse AP1000 design certification document. Because this information was provided to the staff before the EIS was finalized, most of the information that was presented as new in the analysis that Southern presented at this site audit had already been considered in the FEIS. The FEIS did not become available until immediately before the site audit, and, in fact, was distributed at the audit.

### **Site Tours**

Following the introductory session, all of the meeting participants attended a general site tour that included the following steps:

- Existing cooling towers for Units 1 & 2
- Site of the barge slip along the Savannah River
- Units 1 & 2 intake structure
- Transmission line corridor that is being widened for the reroute of one of the on-site lines and where new towers are being installed
- Power block area for Units 3 & 4

During the site tour there was a discussion of downstream dredging needed to support barge deliveries of heavy components. The U.S. Army Corps of Engineers (USACE) has the responsibility and jurisdiction to do the dredging and has a 1970's era EIS to support it. The general feeling was that relatively little dredging would be required and would mainly be snag removal.

Following the general site tour, a boat tour on the Savannah River was provided for most of the government representatives and the PNNL/NRC technical staff. These participants visited:

- Discharge location
- Intake for existing Units 1 and 2
- Intake location for proposed Units 3 and 4

**08/11/08 (Monday) – Afternoon**

**Government-to-Government Meeting**

The NRC and PNNL staff met with State and Federal Agency staff to discuss their perspectives and expectations with regard to permits and the ecological and hydrological impacts of the proposed action.

Jeff King of the USACE expressed concerns about how the agency interactions and permitting would work. He was concerned that under the “Limited Work Authorization” rule, the applicant could start work without appropriate wetland delineations and determinations or other permits. NRC staff stated that the applicant would be required to comply with all applicable laws and regulations.

Jeff King was also concerned about timing issues. The USACE has 120 days to act after a Clean Water Act (CWA) 404 application is submitted. He expressed concern that if Southern submits an application for a CWA 404 permit, there will not be a NRC National Environmental Policy Act (NEPA) analysis or a National Marine Fishery Service (NMFS) concurrence on the shortnose sturgeon biological assessment (BA) available within the regulatory time limit.

Ramona McConney (U. S. EPA) also expressed concerns about the timing of permits and NEPA analyses.

**Government Meeting De-brief**

After the government-to-government meeting, the attendees moved to the Vogtle Site training center where John Fringer led a session to brief Southern on the government-to-government meeting and to allow the government agency staff to ask questions of both Southern and NRC.

Vivianne Vejdani of the South Carolina Department of Natural Resources (SCDNR) asked a number of questions including:

- Does the EIS analysis incorporate future growth rates in population and water use? Is the estimated consumptive use proportion of river flow based on current or future use?
- Do low flow conditions impact the modeling results and what flow rates were considered?
- Was there an analysis of downstream (as far as the harbor) dissolved oxygen concentrations at low flow rates?

Ms. Vejdani was also concerned about saltwater intrusion, well use, the loss of head pressure, and groundwater monitoring in the vicinity of the site.

John Fringer took the action to set up a teleconference between Ms. Vejdani, the SCDNR hydrologist, NRC, and PNNL hydrologists familiar with the site and the analyses performed for the ESP FEIS to address additional questions.

The general government agency question session was followed by a brief meeting between NRC, Southern, and Jeff King (Savannah District USACE Project Manager) to discuss CWA 404 permitting.

Before leaving the site, Bill Wikoff of the U. S. Fish and Wildlife Service indicated that he had been concerned about the potential for bird collisions but was satisfied with the analysis in the FEIS. He was also concerned about the potential for rare mussels in the Savannah River and he felt that a final mussel survey should be conducted on site prior to construction of any in-river features. He indicated that the same concern would apply to the dredging conducted by the USACE downstream from the site.

## **08/12/08 (Tuesday) – Morning**

### **Impingement and Entrainment Sampling**

Southern arranged to have one of its regular impingement sampling events occur during the site audit. The staff witnessed the collection of material that had been impinged on the intake screens in the previous 12 hours. Approximately 4 gallons of debris (mainly plant material) were collected. The staff observed how the impinged material was searched for fish - 3 were found, including one catfish, one bluegill, and one pirate perch. All three of the impinged fish were approximately 1 to 1.5 inches in length. NRC staff had the opportunity to discuss in detail the methods and results of the impingement sampling program with the responsible scientists.

Southern staff also demonstrated the entrainment sampling equipment and discussed the results that were collected during the actual sampling runs.

### **Specialized Tours**

#### *Second boat tour of the Savannah River*

The aquatic ecologists took a second boat tour on the Savannah River; stops included:

- Approximate location of the most upstream Academy of Natural Science, Philadelphia sampling point
- Savannah River Site (SRS) Pump House 5G (on river)
- SRS Pump House 3G (set back from shoreline)
- SRS Barge landing
- SRS Pump House 1G (set back from shoreline)
- Lower Three River Runs
- Beaverdam Creek (on the west side of the river)

The terrestrial ecologists and hydrologists toured selected areas on the VEGP Site to observe surface hydrological features and habitats in future designated construction and pre-construction areas. Stops included:

- The expected route of the intake pipeline
- The proposed new 31-acre borrow area that will be used if Southern is unable to obtain enough fill from the powerblock and switchyard areas. The area was dominated by a mixed community of pines and young hardwoods.
- Mallard Pond
- The proposed cooling tower location

## 08/12/08 (Tuesday) – Afternoon

NRC staff returned to the field to examine additional terrestrial features, including an unnamed arm of Daniels Branch on the western side of the VEGP Site, and habitats in the northern portion of the site. Pocket gopher mounds were observed in the northern areas. Staff examined the debris basins and surface hydrology features in the western portion of the site. The remaining members of the NRC/PNNL team examined the new and significant information matrix and notebooks.

Late Tuesday, Southern was briefed on the team's findings, with a focus on the new and significant information determination process. Major questions, findings, or recommendations included:

1. The new and significant information determinations should be based on the final EIS rather than the DEIS. Tom Moorer re-explained Southern's reasons for basing its analysis on the DEIS but agreed that the evaluation should be updated now that the FEIS is available. Overall, this should simplify the evaluations because much of the "new" information listed in the analysis matrix was already included in the FEIS.
2. The staff questioned why Southern did not include Chapters 2, 3, 8, 9 and 11 of the FEIS in the analysis of new and significant information. Tom Moorer indicated that Southern based its analysis on chapters where conclusions were reached and felt that any important changes to statements in Chapters 2 and 3 were picked up in the analysis of Chapters 4, 5, 6, and 7. In other words, key inputs in Chapters 4, 5, 6, and 7 would be based on information in Chapters 2 and 3, and changes to that base information was evaluated in relation to the conclusions in the later chapters; changes to anything in Chapters 2 or 3 that did not affect a key input in Chapters 4, 5, 6, or 7 would never meet the definition of significant.
3. Some items identified as key inputs in the main chapters were not included in the evaluation of Appendix J and vice versa. Additionally, Southern appeared to be selective in identifying which items from Table J2 were key inputs. The staff explained that Table J2 was included in the EIS to document the key facts and assumptions on which the staff based its conclusions, and, if an item was included in Table J2, the staff felt that it was important and thus should be considered in the new and significant information analysis. Southern indicated that it would look at this table again.
4. In many cases, there was very little information provided about the basis for determining that there was no new information. Southern indicated it had a longer and more detailed version of the matrix, which it could provide in the future.
5. In several areas, such as protected species lists, the matrix suggested that Southern had only examined publicly available websites to look for new and significant information, and there was no indication of direct contact or discussion with other agencies. Southern indicated that in many of these cases there were direct contacts, and that call logs and other records are available.
6. The basis for defining information as significant was not clear. There was a difference of opinion regarding what the NRC staff and Southern consider to be significant information. Southern's procedural definition of "significant" is that to be significant, the new information must be material to the issue and have the potential to affect the conclusion. In practice, however, Southern would designate new information as significant only if it thought that



information would change the conclusion. The staff, on the other hand, considers that any new information that causes an issue to be reevaluated or causes calculations or analyses to be re-run may be significant, whether or not the conclusion changes.

The meeting adjourned and the site audit was completed at approximately 6 pm.

### **Data Gathering**

No documents were taken from the site during the audit, and no items need to be docketed in ADAMS as a result of this site visit.

The staff discussed with Southern the possibility of making the full analysis matrix and supporting information available to NRC and PNNL subject matter experts, possibly at the Tetra Tech Office in Richland, WA. This would facilitate the staff's analysis, and might reduce or eliminate the need for a subsequent full-scale site audit. Southern was amenable to the idea.

**Table 1.** Southern and its contractor personnel, NRC and PNNL staff, and other agency representatives who attended the Vogtle COLA preliminary site audit held August 11, 2008 through August 12, 2008, at the Plant Vogtle Visitor Center and Training Center, Burke County, Georgia.

<b>Name</b>	<b>Affiliation</b>
John Fringer	NRC
Nancy Kuntzleman	NRC
Mike Masnik	NRC
Jill Caverly	NRC
Mike Sackscheswky	PNNL
Kim Leigh	PNNL
Becky Kreig	PNNL
Phil Meyer	PNNL
Jeffrey King	U.S. Army Corp of Engineers
Ted Jackson	Georgia Department of Natural Resources
Albert Frazier	Georgia Department of Natural Resources
Bill Wickoff	U.S. Fish and Wildlife Service
Romona McConney	U.S. Environmental Protection Agency
Vivianne Vejdani	South Carolina Department of Natural Resources
Tanji Paulin	South Carolina Department of Natural Resources
Tom Moorer	Southern Nuclear Company
Nicole Howell	Southern Nuclear Company
Elizabeth Thomas	Southern Nuclear Company
Dale Fulton	Southern Nuclear Company
Felicia Brown	Southern Nuclear Company
Jeff Chandler	Georgia Power Company
Mike Whitten	Tetra Tech
Gary Gunter	Tetra Tech
Karen Patterson	Tetra Tech