UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	**)**	**Docket No. 52-011-ESP**
	)	
Southern Nuclear Operating Company	**)**	**ASLBP No. 07-850-01-**
	)	**ESP-BD01**
	)	
(Early Site Permit for Vogtle ESP Site)	**)**	**January 9, 2009**

SOUTHERN NUCLEAR OPERATING COMPANY'S TESTIMONY OF THOMAS MOORER CONCERNING EC 6.0

Q1. **Please state your name and address.**

A1. My name is Thomas Claibourne Moorer. My business address is: 42 Inverness Center Parkway, Birmingham, AL 35242-4809.

Q2. **Please state your employer, position, and current responsibilities.**

A2. I am currently employed by Southern Nuclear Operating Company ("SNC") as the Project Manager-Environmental. In that capacity, I am responsible for all environmental support activities for new plant and license renewal work for SNC. I was responsible for developing the Environmental Report filed by SNC as part of the Early Site Permit application for Vogtle Units 3 and 4 and all supporting activities. *See* Exhibit SNC000014 (Thomas C. Moorer Curriculum Vitae).

Q3. **Please summarize your education and professional qualifications.**

A3. I earned a Bachelor of Science degree in Environmental Science from Auburn University and a Bachelor of Science in Civil/Environmental Engineering from the University of Alabama. I have over 30 years of experience in the environmental field, including 18+ years of experience in environmental engineering, licensing, and regulatory compliance

in nuclear power. I have over 15 years of experience working in NEPA matters, including the development of Environmental Reports for Environmental Impact Statements supporting NRC licensing actions. I am heavily involved in the work of various industry groups, including EPRI, EEI, and NEI, and have both authored and co-authored numerous technical publications in the environmental field.

Since 2005, I have been responsible for all environmental support for new plants and license renewals, including development of the Environmental Reports ("ERs") for the Vogtle Early Site Permit ("ESP"), Combined Construction and Operating License ("COL") and License Renewal applications to NRC. I am responsible for interface with NRC for review of the ERs and subsequent EIS development, site audits and public meetings and for coordination with state and Federal agencies regarding ESP, COL, and License Renewal activities. Prior to 2005, I worked as the SNC Environmental Services Supervisor for over 15 years and managed the technical and regulatory support for permitting and environmental compliance in the areas of water, air, solid/hazardous waste, mixed waste, chemistry and hazardous materials for all three SNC plants. I have extensive NEPA experience, including the management of environmental support for the Plant Farley and Plant Hatch license renewals, as well as EPRI and NEI work associated with development of the NEI License Renewal Guideline. I worked with NRC on the development of the Generic Environmental Impact Statement ("GEIS") for license renewal. I also provided project management for numerous major environmental projects including technical studies to resolve NPDES permitting issues, wetlands and endangered species work, US Army Corps of Engineers permitting, and studies related to license renewal.

Q4. **What is the purpose of your testimony?**

A4. I will testify regarding my understanding of the transportation of components to the Vogtle site, the possible need to dredge/maintain the Savannah River navigation channel, and Corps reservoir operations. I am providing separate testimony regarding EC 1.2 and EC 1.3.

Q5. **Have you been involved in the decision making process which led to the Westinghouse/Shaw Consortium's determination that delivery by barge was the optimal form of delivery of heavy components to the Vogtle 3 and 4 site?**

A5. Yes. I am aware of the Consortium's decision and have provided some information to them regarding the delivery by barge of heavy components when Units 1 and 2 were constructed. I coordinated support of NRC consultation with the U.S. Army Corps of Engineers (USACE) on matters involving the NRC Final Environmental Statement. I was also responsible for initiation of discussions with the USACE and Consortium regarding use of the Savannah River navigation channel for delivery of the heavy components for Vogtle 3 and 4.

Q6. **What components were delivered by barge for the construction of Vogtle 1 and 2?**

A6. Essentially all components the weight or size of which made delivery by road or rail difficult, including the reactor vessels, reactor heads, steam generators, condenser, and turbines. Although VEGP 1 and 2 did not involve the delivery of large construction modules to the site, the shipping program envisioned by the Consortium does not appear to be materially different from that utilized to construct Vogtle Units 1 and 2. The FEIS for Vogtle Units 1 and 2 concluded that impacts would be generally small. *See* Exhibit SNC000050 (1985 FEIS for VEGP Units 1 & 2).

Q7. **Are you familiar with the Army Corps of Engineers Environmental Impact Statement regarding the maintenance of the navigation channel for the Savannah River?**

A7. Yes.

Q8. **Does that EIS provide insight as to the methods that the Corps of Engineers might use to perform necessary maintenance of the navigation channel?**

A8. Yes. The Corps EIS focuses on two primary subject areas. *See* Exhibit SNC000047 (Corps 1976 EIS for Savannah River Navigation Project). First, the EIS addresses the environmental impacts associated with construction of certain cutoffs between major river bends. This section addresses the one-time impacts related to the construction activities and the one-time disposal of removed material. The second area is the Channel Maintenance Program developed by the Corps for periodic use in ensuring the authorized channel dimensions and depths are available. This area defines the process for dredging, removal of snags, and disposal of snags and dredge spoil. Dredge spoil material is essentially sand, which has numerous beneficial uses. The Corps used the program for several years until channel maintenance funding became limited. The program defined in the 1976 EIS is very similar to the current programs used by the Corps to maintain navigation channels. The only significant change in current common practices regards the management of dredge spoil. Whereas, the 1976 EIS indicates that "within bank" disposal methods would be used, it is my opinion that the Corps will instead use existing upland disposal areas or move the material to heavily eroded areas to replenish sand lost to hurricane or heavy wave damage. Within bank involves placing the material removed on the channel bank below the high water mark. During the winter and

spring high water events, the material is returned to the channel and transported downstream. This method is no longer used to any great extent by the Corps for river work and likely would not be used as a future disposal method. Based on my experience with South Atlantic Division Corps dredge spoil management practices, it is likely that the Corps would collect the removed material in hopper barges and manage the material in existing upland disposal areas. As an alternative, the material could be transported to sites where significant erosion has occurred and be used to replace eroded material. Either of these options would be available to the small amount of material requiring removal and should meet environmental expectations of the state resource agencies with disposal jurisdiction.

Q9. **Do you have personal experience with past Corps of Engineers dredging projects?**

A9. Yes.

Q10. **Based on that experience, do you have an understanding as to any other practices the Corps of Engineers employs?**

A10. Yes. I have over 20 years' experience with channel maintenance and site specific dredging operations. I was involved for a number of years with the Mobile District Corps of Engineers in developing a demonstration project for beneficial use of dredge spoil material removal in the Apalachicola River. This project demonstrated that as an alternative to within bank disposal, dredge spoil could be collected and transported to areas impacted by hurricane-induced erosion to replace lost material. The project demonstrated that this spoil management method could be implemented at an acceptable cost level for use in both ongoing channel maintenance and for restoration of old disposal

areas. It is anticipated that the Corps would rely on a similar approach for disposal of the material removed from the Savannah River.

Q11. **Do you have an opinion on how any necessary snag removal would be handled?**

A11. Yes. In my experience, the preference of the Corps and affected resource agencies is to relocate removed snags to areas of the river outside the navigation channel. This method preserves any habitat value associated with the snags while removing the hazard to navigation. I have meet with Georgia Department of Natural Resources representatives and my understanding from that meeting is that this method of managing snags, in order to maintain aquatic habitat, would be preferred by the State of Georgia.

Q12. **Is it possible at this time to provide precise and comprehensive information regarding the extent of dredging that might be performed by the Corps of Engineers on the Savannah River Navigation Channel and the environmental impacts of that dredging?**

A12. Not at this time. As an initial matter, SNC has made no formal request to the Corps of Engineers to conduct any dredging. SNC and the Consortium has met with the Corps and based on those meetings, it is my understanding that until the Corps receives a formal request to evaluate the proposed need and until funding is provided within the Corps, the Corps will not conduct any activities related to this project. A preliminary survey was conducted by the Consortium in the summer of 2008 and this information has been discussed with the Corps. *See* Exhibit SNC000046 (Savannah River Survey), and *see* Prefiled Written Testimony of Messrs. Neubert, Smith and Capt. Scott. The Corps indicated that the survey provided a useful preliminary assessment of the maintenance scope and that it could be used by the Corps in their scoping evaluation. They indicated

that additional confirmatory work would be required prior to conducting any dredging. Prior to performing any dredging, the Corps of Engineers would have to conduct additional surveys and analyses to define the final project scope, develop a NEPA assessment of the intended maintenance of the navigation channel, and obtain funding for implementation of the project. Until funding is obtained and the NEPA analysis is complete, we will not know whether any maintenance will be performed at all. In fact, the Corps has indicated it currently does not have funding for this project. *See* Exhibit SNC000049 (December 15, 2008 E-mail to Tom Moorer). Until the Corps of Engineers determines for itself the scope and extent of the intended dredging, the information provided by the testimony of Jeff Neubert, David Scott and Bos Smith, and the analysis by Dr. Coutant, represents the best information available regarding the scope, extent, and impact of dredging.

Q13. **Are you familiar with the Army Corps of Engineers Drought Management Plans and Water Control Plans for the Savannah River?**

A13. Yes.

Q14. **Do these plans provide releases specifically for navigation on the Savannah River?**

A14. The Drought Management Plan does not address navigation in any way. *See* SNC000018 (FONSI for Drought Contingency Plan Update (August 2006)). No releases are made for navigation during droughts or during normal flow periods. *See* Exhibit SNC000048 at 9 (Thurmond Dam Water Control Plan and Guide Curves). SNC does not plan to request any extra or special releases from upstream reservoirs to support navigation. Operations in accordance with existing Corps procedures is all that is expected. The Water Control Plan defines a series of reservoir rule curves, and associated releases from dams that are

used to ensure the system is operated in a balanced, equitable fashion to meet the needs of all stakeholders. No changes to releases already made under this plan would be requested to support navigation.

Q15. **Are each of the exhibits referenced in this pre-filed written testimony true, accurate and correct copies, and do they accurately portray the facts they purport to portray?**

A15. Yes.

Q16. **Does this conclude your testimony?**

A16. Yes.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 52-011-ESP
	)	
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01-ESP-BD01
	)	
(Early Site Permit for Vogtle ESP Site)	)	January 9, 2009

AFFIDAVIT OF THOMAS C. MOORER IN SUPPORT OF SOUTHERN NUCLEAR'S PRE-FILED TESTIMONY ON ENVIRONMENTAL CONTENTION 6.0

I, Thomas C. Moorer, do hereby state as follows:

1. I am employed by Southern Nuclear Operating Company as the Project Manager for Environmental Support. A statement of my professional qualifications is attached to the SNC pre-filed testimony to be submitted on January 9, 2009, in response to hearing issues identified by the Board.

2. I have read the foregoing prepared testimony regarding environmental matters at the Plant Vogtle Site.

3. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information and belief.

Thomas C. Moorer

Subscribed and sworn to before me
this 6th day of January, 2009.

Karen O. Fowler
Notary Public
My Commission expires
January 19, 2011