Nuclear Regulatory Commission
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)
	)
SOUTHERN NUCLEAR OPERATING COMPANY	) Docket No. 52-011-ESP
	)
(Early Site Permit – Vogtle Electric Generating Plant)	) ASLBP No. 07-850-01-ESP-BD01
	)

DECLARATION OF DONALD HAYES

I, Donald F. Hayes, do hereby declare as follows:

1. My name is Donald F. Hayes. I am the Director of the Institute for Coastal Ecology and Engineering and an Endowed Professor of Civil Engineering at the University of Louisiana at Lafayette. My office is located in Lafayette, Louisiana. My professional and educational experience is summarized in the curriculum vitae attached to this declaration.

2. I received a Bachelor of Science in Civil Engineering and a Masters of Science in Civil Engineering from Mississippi State University. I also hold a PhD in Civil Engineering with emphases in Environmental Engineering and Water Resources Planning and Management from Colorado State University. I am a registered Professional Engineer in the State of Mississippi and a Board Certified Environmental Engineer by the American Academy of Environmental Engineers. I am also on the Board of Directors of the Western Dredging Association.

3. I have 27 years experience as engineer, much of it related to dredging and associated environmental impacts.

4. I am familiar with the application of Southern Nuclear Operating Company ("SNC") for an early site permit (the "ESP") at the Vogtle Electric Generating Plant (the "VEGP") site. I

have reviewed excerpts of the Final Environmental Impact Statement for an Early Site Permit at the Vogtle Electric Generating Plant (the "FEIS") prepared by the staff of the Nuclear Regulatory Commissions ("NRC").

5. I am providing this declaration in support of Intervenors' motion to admit new or amended contentions.

Dredging Impacts

6. The National Environmental Policy Act ("NEPA") requires analysis of all reasonably foreseeable environmental impacts associated with the construction and operation of a new nuclear power generating facility at the VEGP site. According to the FEIS, three distinct dredging activities are required in connection with such construction and operation that could have potential environmental impacts: (i) dredging of the Federal Navigation Channel (the "FNC") in the Savannah River to its authorized dimensions of nine (9) feet deep by ninety (90) feet wide; (ii) excavation of a two hundred forty (240) foot long by one hundred seventy (170) feet wide by ten (10) feet deep (below the normal water surface) cooling water intake channel; and (iii) dredging of a barge slip to accommodate the heavy equipment needed for VEGP construction.[1] While the potential impacts of each of the aforementioned dredging activities are both foreseeable and environmentally significant (as explained below), the FEIS fails to address and/or adequately analyze them.

7. Dredging in any area where the overlying water is in contact with the Savannah River will have some environmental impacts, and – in my opinion – the impacts to the Savannah River ecosystem could be significant. Dredging typically raises concerns about benthic habitat destruction and water quality impairment. Sediment resuspended into the water column by the

[1] Excavation is also required for a discharge pipe, but will be done using conventional excavation behind a sheet pile wall.

dredging operation impairs water quality; these impacts are exacerbated when anthropogenic contaminants are associated with the sediments. Notably, the NRC staff seem to agree, identifying "…temporary loss of benthic habitat, disruption of spawning migrations, resuspension of sediments that may be contaminated, …" (FEIS 7-20) as issues of concern for the FNC dredging.

8. The extent of dredging impacts set forth in paragraph 7 of this declaration depends partially on the size and duration of the dredging operations and the areas of benthic habitat that will be disturbed. ~~The FEIS provides that the intake channel dredging is proposed to start from the west (dry) end and move eastward, leaving the area disconnected from the river as long as possible, to minimize its impacts. However, the FEIS does not include estimates of the duration of dredging while the channel would be exposed to the river or provide the sediment volume to be removed. Moreover, these metrics cannot be estimated based upon the limited data provided in the FEIS. Without such metrics, the environmental impact of the intake channel dredging cannot be determined, much less assessed and analyzed.~~

9. ~~The FNC dredging project is much larger than the intake channel dredging project.~~ According to the FEIS, most of the FNC above rkm 56 (RM 35) will be dredged. VEGP is located at RM 150.9; thus, one hundred sixteen (116) miles of river channel (which has not been dredged since 1979 (or before) due to lack of use) will need to be dredged. For a ninety (90) foot wide channel, the requisite dredging activities could disturb one hundred forty (140) acres or more of benthic habitat and result in about two million cubic yards of sediment per foot of deepening required. Thus, this is a sizable dredging project with a significant duration. I should note that these estimates are mine, based upon information provided in the FEIS. Surprisingly, the FEIS does not even estimate of the size of the FNC dredging project, stating "[a]t the present

time the dredging project is incompletely defined, the amount of material to be removed is unknown, and the locations of the dredged material disposal areas have not been identified." (FEIS 7-20). Without these estimates, the FEIS is unable to assess or analyze the potentially substantial environmental impacts.

10. The potential impacts from ~~these dredging projects, particularly~~ the FNC dredging, is environmentally significant and worthy of discussion within the FEIS. The FEIS rates the potential cumulative impacts as MODERATE ~~and the on-site impacts as SMALL~~, but does not provide any evidence that the ranking is based upon a quantitative evaluation. Instead, the FEIS only mentions that Section 404 permits (from the USACE and EPA) and 401 Water Quality Certifications (from the State of Georgia) will be required. Since the FEIS does not provide any quantitative analysis or adequate data to independently conduct those analyses, I cannot evaluate the MODERATE ranking suggested by the FEIS for the FNC dredging ~~or the SMALL ranking suggested for the on-site activities~~.

Sediment Placement Impacts

11. The FEIS is also entirely silent on the issue of sediment placement. Dredging will require managing the generated sediments and carrier water. Whether the dredging is conducted hydraulically or mechanically, some sediment management will be necessary. Depending upon the sediment characteristics and volumes, these sediments will likely require the construction of multiple confined disposal facilities ("CDFs") along the Savannah River unless those facilities already exist and have adequate capacity. The CDFs will permanently alter the landscape and associated return water discharges could potentially have significant impacts on the Savannah River environment. In the event the sediments contain hazardous materials, additional sediment

management and disposal issues will also arise. Just as the FEIS should consider dredging impacts, it should also include an assessment of sediment placement alternatives.

I declare under penalty of perjury that the foregoing is true and correct.

Date: ___9/21/08_____

DECLARANT:

Executed in Accord with 10 CFR 2.304(d)

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