VogtlecolRAIsPEm Resource

From: Ravindra Joshi
Sent: Friday, December 19, 2008 1:44 PM
To: VogtlecolRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 021 RELATED TO SRP SECTION 12.3-12.4 FOR THE VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 COMBINED LICENSE APPLICATION
Attachments: VOG-RAI-LTR-021.doc

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Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 021 RELATED TO SRP SECTION 12.3-12.4 FOR THE VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 COMBINED LICENSE APPLICATION
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From: Ravindra Joshi

Created By: Ravindra.Joshi@nrc.gov

Recipients:
"VogtlecolRAIsPEm Resource" <VogtlecolRAIsPEm.Resource@nrc.gov>
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December 19, 2008

Mr. Joseph A. (Buzz) Miller
Senior Vice President
Southern Nuclear Operating Company
P.O. Box 1295
Birmingham, AL 35201

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 021 RELATED TO SRP SECTION 12.3-12.4 FOR THE VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 COMBINED LICENSE APPLICATION

Dear Mr. Miller:

By letter dated March 28, 2008, Southern Nuclear Operating Company (SNC), submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advance passive pressurized water reactors pursuant to 10 CFR Part 52. The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 30 days of the date of this letter. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, you may contact me at 301-415-6191 or you may contact Christian Araguas, the lead project manager for the Vogtle Electric Generating Plant combined license at 301-415-3637.

Sincerely,

/**RA**/

Ravindra G. Joshi, Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-025
52-026

Enclosure:
Request for Additional Information

CC: see next page

If you have any questions or comments concerning this matter, you may contact me at 301-415-6191 or you may contact Christian Araguas, the lead project manager for the Vogtle Electric Generating Plant combined license at 301-415-3637.

Sincerely,

/**RA**/

Ravindra G. Joshi, Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-025
52-026
eRAI Tracking No. 1748, 1751, 1752

Enclosure:
Request for Additional Information

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NRO-002

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NAME	TFrye/CHinson*	RJoshi*	AHodgdon*	CAraguas*
DATE	12/10/08	12/10/08	12/11/08	12/11/08

*Approval captured electronically in the electronic RAI system.

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Vogtle
Southern Nuclear Operating Co.
Docket No. 52-0025 and 52-0026
SRP Section: 12.03-12.04- Radiation Protection Design Features
Application Section: 12.4

QUESTIONS FROM Health Physics Branch (CHPB)

12.03-12.04-1
Vogtle COL FSAR Section 12.4.1.9 provides a description of the potential sources of exposure to construction workers. The dose limits to the workers are reviewed by the staff to ensure compliance with 10 CFR 20.1301. 10 CFR 20.1301 (a)(1) states “Each licensee shall conduct operations so that the total effective dose equivalent to individual members to the public from the licensed operation does not exceed 0.1 rem (1 mSv) in a year."

Review of related Vogtle SCOL documents to support an independent assessment of compliance with the regulations, requires the staff to request additional information to make a determination of reasonable assurance. The supplemental information item VEGP SUP 12.4-1 provides information regarding dose to construction workers in the new FSAR Subsection 12.4.1.9 (Subsections 12.4.1.9.1 through 12.4.1.9.4). The information provided in FSAR Section 12.4.1.9.1-4 is not sufficient for the staff to validate and verify the estimated doses for Unit 3 and 4 construction workers. NRC staff is unable to make a determination that the application meets the acceptance criteria in SRP 12.3-4 and complies with the dose limits to a member of the public in 10 CFR 20.1301 and 1302.

The SCOL applicant used two years of environmental monitoring data (TLD measurements) to evaluate the potential direct radiation dose to construction workers associated with Units 1 and 2 operations. Provide the rationale as to why this two- year data set is representative of the average annual dose that would be received by a construction worker at this location. If the applicant has determined that the data set is applicable, describe the detection level and error bounds for doses based on the TLD measurements. Provide the information necessary to reproduce the calculations or reference where the information was obtained so that it is available to the staff to make an independent determination of construction worker dose estimates. Revise FSAR Section 12.4, as appropriate, to include the necessary information (e.g., rationale for using one year TLD data).

12.03-12.04-2
Vogtle COL FSAR section 12.4.1.9 provides a description of the potential sources of exposure to construction workers. The dose limits to the workers are reviewed by the staff to ensure compliance with 10CFR20.1301. 10 CFR 20.1301 (a)(1) states “Each licensee shall conduct operations so that the total effective dose equivalent to individual members to the public from the licensed operation does not exceed 0.1 rem (1 mSv) in a year."

Review of related Vogtle SCOL documents to support an independent assessment of compliance with the regulations requires the staff to request additional information to make a determination of reasonable assurance. The supplemental information item VEGP SUP 12.4-1 provides information regarding dose to construction workers in the new FSAR Subsection 12.4.1.9 (Subsections 12.4.1.9.1 through 12.4.1.9.4). The information provided in FSAR Section 12.4.1.9.1-4 is not sufficient for the staff to validate and verify the estimated doses for Unit 3 and 4 construction workers. NRC staff is unable to

make a determination that the application meets the acceptance criteria in SRP 12.3-4 and complies with the dose limits to a member of the public as specified in 10 CFR 20.1301 and 1302.

In FSAR section 12.4, the applicant addresses the direct dose component from Unit 3 to Unit 4 construction workers. The dose presented is based on an assumption that the Unit 3 dose to a Unit 4 construction worker would be 1/2 that determined from Units 1 and 2, which is based on TLD data. The applicant has not provided sufficient information to substantiate this assumption. The SCOL applicant should describe the basis for the estimated dose contribution from Unit 3 to a Unit 4 construction worker and/or provide an explanation of the sources of that dose. The applicant should include the applicability of radiation sources and the different location for Unit 4 construction workers as opposed to Unit 3 construction workers relative to their distance from Units 1 and 2.

The SCOL applicant's description of external exposure to the construction workers for Unit 3 includes a 15 millirem per year contribution from the Independent Spent Fuel Storage Installation (ISFSI). However, the dose to construction workers for Unit 4 does not include this ISFSI dose contribution. The applicant only states that the ISFSI will be placed west of Unit 2 and does not provide any other specific information that is necessary for evaluating the ISFSI dose contribution to Unit 3 and 4 construction workers. Please provide a detailed description of where the ISFSI is to be placed and/or update Figure 1.1-202 to indentify its intended placement. The applicant is also requested to describe the basis used for estimating the dose contribution from the proposed ISFSI.

12.03-12.04-3
Vogtle COL FSAR section 12.4.1.9 provides a description of the potential sources of exposure to construction workers. The dose limits to the workers are reviewed by the staff to ensure compliance with 10CFR20.1301. 10 CFR 20.1301 (a)(1) states "Each licensee shall conduct operations so that the total effective dose equivalent to individual members to the public from the licensed operation does not exceed 0.1 rem (1 mSv) in a year."

The supplemental information item VEGP SUP 12.4-1 provides information regarding dose to construction workers in the new FSAR Subsection 12.4.1.9 (Subsections 12.4.1.9.1 through 12.4.1.9.4). The information provided in FSAR section 12.4.1.9.1-4 was not sufficient for the staff to validate and verify the estimated doses for Unit 3 and 4 construction workers. NRC staff is unable to make a determination that the application meets the acceptance criteria in SRP 12.3-4 and complies with the dose limits to a member of the public specified in 10 CFR 20.1301 and 1302.

a. The Vogtle Units 3 & 4 COL FSAR appears to use the offsite dose calculations provided by the ODCM to estimate doses to the onsite construction workers from gaseous effluents. It should be recognized that construction workers may be located inside the site boundary (i.e., closer to release points). Please provide information that demonstrates that the doses based on site boundary dispersion parameters are conservative. Also describe the methodology for calculating the dose to the maximally exposed individual (construction worker) from this source.

b. The Vogtle Units 3 & 4 COL FSAR assumptions for construction worker dose from liquid effluents appear to assume that the workers receive the same dose as that modeled for an off-site member of the public (i.e., drinking water and fish pathway). Please provide assumptions and explanation as to the applicability of these effluent doses to the construction workers. Also, the applicant should provide an explanation for omitting the estimated dose to the construction workers due to the liquid effluent interconnects between Units 3 and 4.

c. The Vogtle Units 3 & 4 COL FSAR Section 12.4.1.9.2.2 includes a discussion of releases from Units 1 and 2 indicating that dose calculations for construction workers from particulates are limited to those with half-lives greater than 8 days. The 8-day half-life is a 10 CFR 50, Appendix I criterion; it does not appear to be applicable to dose calculation for construction workers. SCOL applicant should provide clarification, additional calculations and/or remove from the discussion from this COL FSAR section.