

SummerRAIsPEm Resource

From: Patel, Chandu
Sent: Wednesday, September 09, 2009 2:37 PM
To: SummerRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 063 RELATED TO SRP SECTION 2.4. 2 AND 2.4.13 FOR THE VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3 COMBINED LICENSE APPLICATION
Attachments: SUM-RAI-LTR-063.doc

Chandu Patel

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Email Number: 70

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Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 063 RELATED TO SRP SECTION 2.4. 2 AND 2.4.13 FOR THE VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3 COMBINED LICENSE APPLICATION

Sent Date: 9/9/2009 2:37:06 PM

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From: Patel, Chandu

Created By: Chandu.Patel@nrc.gov

Recipients:

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September 9, 2009

Mr. Alfred M. Paglia
Manager, Nuclear Licensing
MC P40
South Carolina Electric & Gas Company
PO Box 88
Jenkinsville, SC 29065

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 063 RELATED TO
SRP SECTION 2.4. 2 AND 2.4.13 FOR THE VIRGIL C. SUMMER NUCLEAR
STATION UNITS 2 AND 3 COMBINED LICENSE APPLICATION

Dear Mr. Paglia:

By letter dated March 27, 2008, South Carolina Electric & Gas Company 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 301-415-3025 or at Chandu.Patel@nrc.gov via e-mail.

Sincerely,

/RA/

Chandu P. Patel, Senior Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-027
52-028

Enclosure:
Request for Additional Information

CC: see next page

If you have any questions or comments concerning this matter, you may contact me at 301-415-3025 or at Chandu.Patel@nrc.gov via e-mail.

Sincerely,

/RA/

Chandu P. Patel, Senior Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-027
52-028

eRAI Tracking No. 3442 and 3440

Enclosure:
Request for Additional Information

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NRO-002

OFFICE	RGS1/BC	NWE1/PM	OGC	NWE1/L-PM
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DATE	8/1/09	8/4/09	8/24/09	9/09/09

*Approval captured electronically in the electronic RAI system.

OFFICIAL RECORD COPY

Virgil C. Summer Nuclear Station, Units 2 and 3
South Carolina Electric and Gas Company
Docket No. 52-027 and 52-028
SRP Section: 02.04.02 - Floods, and
SRP Section: 02.04.13 - Accidental Releases of Radioactive Liquid Effluents in Ground and Surface
Waters
Application Sections 2.4.2 and 2.4.13

QUESTIONS for Hydrologic Engineering Branch (RHEB)

02.04.02-2

FSAR 2.4.2.1 Rev 0 (page 2.4-8) and 2.4.3.3 (page 2.4-14) reports the use of weir equations to estimate the pool elevation resulting from river flood scenarios. The Parr Shoals Dam is dividing into three sections and a different set of input parameters (lengths, discharge coefficients) are used for each of these sections, but the equations themselves are not given in the text.

In order to demonstrate compliance with 10 CFR 100.20(c)(3) and 10 CFR 52.79(a), which, among other things, require a description of site hydrologic characteristics, the staff requests that the specific equations be provided. Second, staff request that the applicant describe why a different weir coefficient was used in 2.4.3.1 for the main spillway (value of 3.9) that was used in 2.4.2.1 (value of 3.97).

02.04.13-9

The response to RAI 02.04.13-2 states that the dilution factor for Mayo Creek was calculated using the 100-year low annual mean flow in Mayo Creek at Parr Road of 0.39 cubic feet per second. This 100-year low annual mean flow was estimated from a regional regression analysis of annual flow records for small watersheds in the Piedmont physiographic province of South Carolina (submittal NND-09-0171, page 21 of 72).

In order to demonstrate compliance with 10 CFR 100.20(c)(3) and 10 CFR 52.79(a), which, among other things, require a description of site hydrologic characteristics with sufficient margin for the limited nature of available data, please describe in greater detail the process used to estimate the 100-year low annual mean flow rate for Mayo Creek and the conservative nature of the resulting estimate.

02.04.13-10

In accordance with the requirement in 10 CFR 100.20(c) to describe site hydrologic characteristics, please provide additional information regarding the physical and hydrologic nature of the reach of Mayo Creek adjacent to the proposed location of Units 2 and 3. If possible, please specifically discuss the depth to bedrock beneath this reach and any evidence for Mayo Creek being a losing or gaining stream along this reach.

02.04.13-11

Water levels measured in well OW-627a increased approximately 40 feet during the June 2006 to June 2007 monitoring period. Well OW-627a is the deepest well installed during the Unit 2 and 3 investigation, is paired with OW-627b (installed in the saprolite/shallow bedrock zone) and is located along the bedrock flowpath from the proposed location of Unit 3 to the Broad River, which was elevated as part of the accidental effluent release analysis in FSAR Section 2.4.13. As a result, understanding groundwater levels and fluctuations in this well is important to aid in the characterization of the bedrock aquifer and groundwater movement onsite. Per 10 CFR 52.79(a) and more specifically Regulatory Guide 1.206 C.I.2.4.12.2 describing the characterization of onsite aquifers, please provide any additional water level data from the bedrock well OW-627a measured since June 2007.

02.04.13-12

The response to RAI 2.4.13-2 states that though pathlines from Unit 2 and 3 through bedrock and to Mayo Creek were both analyzed as part of the accidental effluent release analysis, only the analysis and results for the Unit 2 bedrock pathline were presented because it was determined to be the most conservative and bounding (NND-09-0171, page 5 of 72). However, it appears that a more conservative travel time is possible from Unit 3 to Mayo Creek (36 years versus 51.2 years) for the bedrock pathline due to a higher hydraulic gradient (-0.0214 from OW-305a to the Mayo Creek bed) and shorter path length (2800 feet versus 2970 feet). The guidance within SRP for 2.4.13.1.2 specifies that the pathway creating the most severe potential impact should be identified and evaluated. Accordingly, please evaluate the potential for a more conservative pathline from Unit 3 to eastern compliance points and present the resulting radionuclide concentrations at these compliance points, if needed.