SummerRAIsPEm Resource

From: Ravindra Joshi
Sent: Friday, September 19, 2008 8:58 AM
To: SummerRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 002 RELATED TO SRP SECTION 2.5.2 FOR THE VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3 COMBINED LICENSE APPLICATION
Attachments: SUM-RAI-LTR-002.doc

Hearing Identifier: Summer_COL_eRAIs
Email Number: 3

Mail Envelope Properties (CEEA97CC21430049B821E684512F6E5E97B82116F2)

Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 002 RELATED TO SRP SECTION 2.5.2 FOR THE VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3 COMBINED LICENSE APPLICATION
Sent Date: 9/19/2008 8:58:09 AM
Received Date: 9/19/2008 8:58:10 AM
From: Ravindra Joshi

Created By: Ravindra.Joshi@nrc.gov

Recipients:
"SummerRAIsPEm Resource" <SummerRAIsPEm.Resource@nrc.gov>
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Files	**Size**	**Date & Time**
MESSAGE	3	9/19/2008 8:58:10 AM
SUM-RAI-LTR-002.doc	53754	

Options
Priority: Standard
Return Notification: No
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September 19, 2008

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. 002 RELATED TO SRP SECTION 2.5.2 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 301-415-6191or Ravindra.Joshi@nrc.gov.

Sincerely,

/**RA**/

Ravindra G. Joshi, Lead 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 301-415-6191or Ravindra.Joshi@nrc.gov.

Sincerely,

/**RA**/

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

Docket Nos. 52-027
52-028

eRAI Tracking No. 1229

Enclosure:
Request for Additional Information

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NRO-002

OFFICE	RGS2/BC	NWE1/PM	OGC	NWE1/L-PM
NAME	CMunson*	RJoshi*	AHodgdon*	RJoshi*
DATE	9/9/08	9/9/08	9/9/08	9/9/08

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information
Virgil C. Summer Nuclear Station Units 2 and 3
South Carolina Electric & Gas Company
Docket No. 52-027 and 52-028
SRP Section: 2.5.2- Vibratory Ground Motion

Application Section: 2.5.2

QUESTION from Geosciences and Geotechnical Engineering Branch 2 (RGS2)

02.05.02-2
The Eastern Tennessee Seismic Zone (ETSZ), considered to be one of the most active seismic areas east of the Rocky Mountains, lies within the Summer COL site region (i.e., within 320 km (200 mi) of the site). Recent studies have indicated that this seismic zone may possess the potential to produce large-magnitude earthquakes. However, although new information on seismic hazard exists for the ETSZ, the Summer COL application does not present source models for the zone that are updated from the 1986 Electric Power Research Institute Seismicity Owners Group (EPRI/SOG) report. The staff is concerned that the EPRI/SOG seismic source models for the region may not adequately characterize the potential for larger earthquakes in the ETSZ due to the low weighting for larger earthquakes and the low probabilities of activity for seismic sources assigned by some of the EPRI/SOG expert teams.

Section 2.5.2.2.2.5 of the Summer COL application discusses adequacy of the EPRI/SOG source models based only on the maximum magnitude parameter. In addition to maximum magnitude, however, there are several other variables (e.g., probability of activity, source location, and recurrence) that contribute to overall seismic hazard for the site. The application does not adequately address the effects of these other parameters derived from the newer information sources for the Summer probabilistic seismic hazard analysis (PSHA).

There are more recent seismic hazard studies (e.g., the Geomatrix TVA dam safety study and the Lawrence Livermore National Laboratory Trial Implementation Project (TIP) study) which provide new information on seismic hazard for the ETSZ. Regulatory Guide 1.208 states that new information should be considered when evaluating applicability of the EPRI/SOG hazard curves for a site. If the effect on the hazard is significant, the Summer PSHA should be updated to include the newer information. The application does not currently include detailed numerical comparisons of the EPRI/SOG hazard and the newer studies.

In regard to assessment of seismic hazard in the ETSZ, please provide the following additional information:

a) PSHA mean hazard curves for the Summer COL site using Geomatrix TVA dam safety study and TIP study seismic source models, together with the EPRI 2004 ground motion models, and compare these hazard curves with the six EPRI/SOG PSHA hazard curves for the site.

b) Separate mean hazard curves for the Charleston and New Madrid seismic source zones to enable staff to directly assess their impact relative to the newer source models and the previous EPRI/SOG source models.

c) A discussion and basis for including, or not including, the newer source models in the overall final PSHA. If the determination is that the newer source models need to be included in the overall final PSHA, include that final PSHA in the response.

d) Mean 1 Hz and 10 Hz hazard curves for each EPRI team for each of their sources.

e) Latitude and longitude for each of the EPRI sources.

02.05.02-3
In Section 2.5.2.2.1.2 and Table 2.5.2-204 of the Summer FSAR, the Dames and Moore source characterization parameters derived for the EPRI/SOG assessment are presented for Zones 41 (the Southern Cratonic Margin) and 53 (the Southern Appalachian Mobile Belt). Relatively low probabilities were assigned to these two zones by the Dames and Moore team.

Please justify the source characterization parameters used by the Dames and Moore team for Zones 41 and 53 to assess seismic hazard of the region surrounding the Summer site. Considering the low probability values selected by the Dames and Moore team, please also justify the conclusion that the source characterization for Zones 41 and 53 still falls within the range for seismic hazard in the Central and Eastern U.S. (CEUS) that is accepted by the scientific peer community.