PMVogtleCOLPEm Resource

From: Christian Araguas
Sent: Friday, February 06, 2009 5:33 PM
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Subject: Draft RAIs 2057 and 2091 Related SRP Sections 1.0, 2.4.2, 2.4.13 for Vogtle Units 3 and 4
Attachments: RAI 2091 draft.pdf; RAI 2057 draft.pdf

To All,

Attached are Draft RAIs 2057 and 2091 related to SRP Sections 1.0, 2.4.2, and 2.4.13 for Vogtle Units 3 and 4. Please contact me if you desire a phone conference regarding these RAIs. If no response is heard by close of business February 11, the final RAIs will be issued.

Christian Araguas
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RAI 2057 draft.pdf	14192	

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Request for Additional Information No. 2091

Vogtle
Southern Nuclear Operating Co.
Docket No. 52-0025 and 52-0026
SRP Section: 01 - Introduction and Interfaces
Application Section: FSAR 2.4.13

QUESTIONS for Hydrologic Engineering Branch (RHEB)

01-***

In accordance with 10 CFR 100.20(c)(3) and 10 CFR 52.79(a)(1)(iii), the following additional information is requested. Confirm that no chelating agents will be comingled with radioactive waste liquids and that such agents will not be used to mitigate an accidental release. Alternatively, the applicant may use repeated experiments that include chelating agents to produce the distribution coefficients and incorporate these newly determined distribution coefficients into the analysis to demonstrate that the requirements of 10 CFR Part 20, Appendix B, Table 2, are satisfied.

Request for Additional Information No. 2057

Vogtle
Southern Nuclear Operating Co.
Docket No. 52-0025 and 52-0026
SRP Section: 02.04.02 - Floods
Application Section: COLA

QUESTIONS for Hydrologic Engineering Branch (RHEB)

02.04.02-***

Staff reviewed the local intense precipitation flood event as described in FSAR Section 2.4.2. In accordance with requirements based on 10 CFR 100.20(c) and 10 CRF 52.79(a), staff requests additional information concerning the drainage basins and ditches in the vicinity of Vogtle Units 3 and 4.

Specifically, staff's assessment of the HEC-RAS input files provided by the applicant noted the following: 1) three of the drainage ditches shown in drainage maps referenced in the FSAR are not included in the local flooding analysis, 2) a comparison with HEC-RAS input files provided by the applicant includes a culvert but this feature is not included in Figure 2.4.2.4-102 (FSAR Figure 2.4-201), 3) a map referencing the HEC RAS cross section was not provided, and 4) the feature that appears to cover feeder ditches 2 and 3 at their downstream ends in Figure 2.4.2.4-102 is unclear as to the type of feature or its impact on the drainage system.

The applicant should provide: 1) additional information or clarification regarding the deletion of certain channels from the analysis, 2) clarification regarding the inconsistency of the HEC-RAS model and the figure regarding the culvert, 3) a figure showing the locations of the cross-sections used in developing the HEC-RAS model inputs, and 4) additional information concerning the feature that appears to cover the feeder ditches 2 and 3 at the downstream ends.

02.04.02-***

Staff reviewed the local intense precipitation flood event as described in FSAR Section 2.4.2. In accordance with requirements based on 10 CFR 100.20(c) and 10 CRF 52.79(a), staff requests additional information concerning the drainage associated with local intense precipitation at Vogtle Units 3 and 4.

In FSAR Section 2.4.2.3, the applicant states that adjustments to conveyance were made as necessary to eliminate flooding. However, no information was provided regarding the specific changes that were made. Staff's analysis must account for any adjustment to cross-sections, roughness or other conveyance parameter in the final design plan.

The applicant should provide more information about what modifications were made to improve conveyance.

02.04.02-***

Staff reviewed the local intense precipitation flood event as described in FSAR Section 2.4.2. In accordance with requirements based on 10 CFR 100.20(c) and 10 **CFR** 52.79(a), staff requests additional information concerning the drainage basins and ditches in the vicinity of Vogtle Units 3 and 4.

In its review of the applicant's HEC-RAS model, the NRC staff found that the cross-sections for the feeder ditches had top widths of approximately 1000 feet with an overall channel length of about 1200 feet and the topography is relatively flat. Consequently, it is difficult to determine what features constrain the flow into channels and whether the 1-dimensional analysis is appropriate. Additionally, the overbank area constitutes much of the cross-sectional area during peak flow and affects the conveyance properties and water surface elevation.

The applicant should justify the use of a 1-dimensional assumption for the hydraulic analysis. Also, the applicant should provide additional hydraulic information/calculation concerning the conveyance properties of the overbanks and channels.

02.04.02-***

Staff reviewed the local intense precipitation flood event as described in FSAR Section 2.4.2. In accordance with requirements based on 10 CFR 100.20(c) and 10 CRF 52.79(a), staff requests additional information concerning the drainage basins and ditches in the vicinity of Vogtle Units 3 and 4.

In FSAR Section 2.4.2.3 the Manning's roughness values provided are 0.014 and 0.015 in the ditches, and overbank values of 0.020 and 0.030. A value of 0.030 occurs in only a few of the HEC-RAS cross sections. The applicant states in the FSAR that these values are conservative, and that the ditches are assumed to be well maintained. Staff's analyses of the HEC-RAS model show the water surface elevation could exceed the safety-related elevation of 220 ft msl with increased Manning's roughness.

The applicant should provide assurances that the ditches and overbank areas will be maintained with finishes that reflect the appropriate roughness values thereby assuring that the channel can handle the predicted flood flows.