PMHarrisCOL PEmails

From: Ravindra Joshi
Sent: Tuesday, April 21, 2009 4:38 PM
To: David Waters; Robert Kitchen (robert.kitchen@pgnmail.com); Tillie Wilkins
Cc: HarrisCOL Resource; Glenn Kelly; Lynn Mrowca; Manny Comar
Subject: Draft RAI 2488 related to SRP section 19 for Harris Units 2 and 3
Attachments: RAI 2488.doc

To All,

Attached is a draft RAI(2488) related to SRP Section 19 for Harris Units 2 and 3. If you would like to schedule a conference call to discuss this RAI, please let me know before 5:00 PM on Friday April 24, 2008. If no request for a conference call is received, this RAI will be issued as Final.

Thanks,

Ravindra G. Joshi
Project Manager
AP1000 Project
NRO/DNRL/NWE1
US NRC
301-415-6191.

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Subject: Draft RAI 2488 related to SRP section 19 for Harris Units 2 and 3
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From: Ravindra Joshi

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MESSAGE	439	4/21/2009 4:37:55 PM
RAI 2488.doc	34810	

Options
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Request for Additional Information No. 2488

Shearon Harris
Progress Energy Carolinas, Inc.
Docket No. 52-022 and 52-023
SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation
Application Section: 19.59

QUESTIONS for PRA Licensing, Operations Support and Maintenance Branch 1 (AP1000/EPR Projects) (SPLA)

19-3***

(Follow-up to Question 19-1) The response to Question 19-1 provides detailed information on screening of high winds, external floods, and transportation and pipeline accidents for inclusion in the Shearon Harris Nuclear Power Units 2 and 3 (Harris) probabilistic risk assessment (PRA). Regulatory Guide (RG) 1.206 indicates that combined license (COL) applicants' final safety analysis reports (FSAR) should include a description of the external events evaluated and the methods used to conduct screening and bounding analyses. Therefore, please revise section 19.58 of the FSAR to either; (1) include the external events screening approach and results, and (2) discuss why the expected core damage frequency and large release frequency of the screened events is insignificant compared to the quantitative results from other initiators, or justify an alternative approach. In addition, the response to Question 19-1 should be supplemented in the following areas before inclusion in the FSAR:

a. The criteria used to screen the external events should be clearly identified. Examples are the five criteria in the American Society of Mechanical Engineers (ASME) combined PRA standard, RA-S, and the Westinghouse approach of an initiating event frequency (IEF) less than 1E-7 per year (/yr) or associated core damage frequency (CDF) of less than 1E 8/yr. These criteria should be consistent with the expectation stated in Standard Review Plan (SRP) section 19.0 that results of the PRA should indicate that the design represents a reduction in risk compared to existing operating plants.
b. The screening should address a broad set of potential site-specific contributors, not only the events identified in APP-GW-GLR-101 (for an example, see non-mandatory Appendix 4-A of ASME RA-S). Additional events include biological effects, temperature and drought effects on the ultimate heat sink, and turbine missiles. Many of these events can be screened based on the five criteria identified above; however, this screening should be documented in the FSAR.

19-4***

(Follow-up to Question 19-1) In response to Question 19-1, the applicant provided information about Extratropical Cyclones using NOAA National Climatic Data Center (NCDC) data. Please confirm that your response to Question 19-1 is consistent with your response to Question 02.03.01-12 in which the staff cautioned against the use of certain NCDC Storm Events data.

19-5***

(Follow-up to Question 19-1) Section 19.58 of the AP1000 Design Control Document (DCD) classifies tornadoes according to the enhanced Fujita (EF) scale. To allow direct comparison between the FSAR and the referenced DCD, please re-classify tornadoes reported in the FSAR using the EF scale.

19-6***

(Follow-up to Question 19-1) (a) Please expand your risk results discussion for external flooding by addressing all potential causes of elevated water levels (e.g., lake or reservoir surges/seiches, precipitation, dam failure), including credible combinations of sources. (b) Please revise the FSAR to more fully discuss the level of risk associated with external flooding and the systematic method used to assess or screen the hazard (for example, by demonstrating that the frequency of a flood higher than site grade is less than 1E-7/yr or that the resulting CDF is less than 1E-8/yr), including the basis for the numerical values used.

19-7***

(Follow-up to Question 19-1) The DCD calls for an applicant to “reevaluate the qualitative screening of external fires” and perform a risk assessment if it cannot be demonstrated that the frequency of hazard is less than 1E-7/yr. However, the response to Question 19-1 does not address external fires. Please provide a discussion of your evaluation and document this reevaluation or assessment in the FSAR.

19-8***

(Follow-up to Question 19-1) The response to Question 19-1 does not appear to discuss the risk associated with on-site chemical storage at Harris. Please provide a discussion of this evaluation and revise the FSAR to discuss the level of risk associated with on-site chemical storage and the systematic method used to assess or screen the hazard, including the basis for numerical values used.

19-9***

(Follow-up to Question 19-1) The response to Question 19-1 does not appear to discuss the risk associated with major depots and storage areas. Please revise the FSAR to discuss the level of risk associated with these nearby facilities and the systematic method used to assess or screen the hazard, including the basis for numerical values used.

19-10***

Discuss the basis for concluding that the site-specific systems described in the COL application (e.g., raw water system, Harris lake makeup water system, turbine building closed cooling water system) that are modeled in the Harris PRA are consistent with the assumptions made in the development of IEFs and support system failure probabilities in the AP1000 PRA.

19-11***

Discuss the basis for determining that the loss-of-offsite-power (LOSP) frequencies and recovery probabilities assumed in the AP1000 PRA (both at power and during shutdown including internal and external events) bound the expected site-specific values for Harris.