



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

May 14, 2010

Mr. Charles G. Pardee  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 - REQUEST FOR ADDITIONAL INFORMATION REGARDING AN AMENDMENT REQUEST TO RELOCATE SPECIFIC SURVEILLANCE FREQUENCY REQUIREMENTS TO A LICENSEE-CONTROLLED PROGRAM (TAC NOS. ME3374 AND ME3375)

Dear Mr. Pardee:

By letter to the Nuclear Regulatory Commission (NRC) dated February 16, 2010 (Agencywide Documents Access and Management System Accession No. ML100480339), Exelon Generation Company, LLC, submitted a request to modify the Quad Cities Nuclear Power Station, Units 1 and 2, technical specifications by relocating specific surveillance frequencies to a licensee-controlled program with the implementation of Nuclear Energy Institute 04-10, "Risk-informed Technical Specifications Initiative 5b, Risk-informed Method for Control of Surveillance Frequencies," Revision 1.

The NRC staff is reviewing the submittal and has determined that additional information is required to complete the review. The specific information requested is addressed in the enclosure to this letter. During a discussion with your staff on May 14, 2010, it was agreed that you would provide a response within 30 days from the date of this letter.

The NRC staff considers that timely responses to requests for additional information help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1055.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Gratton".

Christopher Gratton, Senior Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

Enclosure:  
Request for Additional Information

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REQUEST FOR ADDITIONAL INFORMATION

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-254 AND 50-265

Exelon Generation Company letter dated February 16, 2010 (Agencywide Documents Access and Management System Accession No. ML100480339), proposed to relocate specific surveillance frequencies to a licensee-controlled program through the implementation of Nuclear Energy Institute 04-10, "Risk-informed Technical Specifications Initiative 5b, Risk-informed Method for Control of Surveillance Frequencies," Revision 1. The application included a gap analysis (i.e., self-assessment) for the Quad Cities Nuclear Power Station (QCNPS) probabilistic risk assessment (PRA) model that was completed in 2004. This gap analysis was performed against the American Society of Mechanical Engineers PRA Standard, Addendum A (the Standard). The 2004 gap analysis defined a list of 85 supporting requirements from the Standard for which potential gaps to the Standard were identified.

The Nuclear Regulatory Commission (NRC) staff has determined that the following information is needed in order to complete its review:

1. In Table 2.2-1 of Attachment 2 of the submittal, Gap #2 identifies the need for additional investigation to assure appropriate components and failure modes are modeled. Gap #3 identifies that component and failure mode exclusion criteria are not documented. The licensee disposition for these items states that the PRA model is "...judged to include proper treatment of components and failure modes for Capability Category II requirements," and that documentation enhancements are all that is required. Supporting Requirement SY-A12 of the PRA internal events standard identifies that failure modes of components which are beneficial to system operation should not be included, and SY-A12 does not distinguish unique capability categories. Similarly SY-A15 provides quantitative criteria for exclusion of components and failure modes without distinguishing capability categories. The licensee's disposition refers to Capability Category II requirements which do not exist for these supporting requirements, and refer to SY-A14 (Gap #3) when it appears that the deficiency is against SY-A15.

Therefore, the disposition of these gaps is not understood by the NRC staff, and further clarification is needed. Identify how the QCNPS PRA model addresses failure modes beneficial to system operation, and justify the basis for the judgment that this gap is not significant, or is only a documentation issue and not a technical issue. Similarly discuss the criteria used in the QCNPS PRA model to exclude components and failure modes, and the basis for the judgment of the gap significance.

2. In Table 2.2-1 of Attachment 2 of the submittal, Gaps #7, #8, and #9 identify that the number of demands and the standby times for components are estimated rather than directly calculated from plant-specific records, and this is "...judged to appropriately

Enclosure

estimate ..." these parameters. Justify the basis for the judgment that estimates, rather than actual data, are appropriate.

3. In Table 2.2-1 of Attachment 2 of the submittal, Gap #10 identifies that supporting requirement DA-C10 is not satisfied. It is not clear exactly what the deficiency is based on the entry in the table. Further, the disposition of this item states that surveillance test procedures are "...judged to address the appropriate failure modes with respect to the estimated number of demands." Provide a more specific summary of the deficiency with regards to supporting requirement DA-C10, and justify the basis for the conclusion that the PRA model is actually using appropriate data.
4. In Table 2.2-1 of Attachment 2 of the submittal, Gap #11 identifies that no interviews with plant staff were conducted to confirm the uncertainty associated with maintenance unavailabilities. Supporting requirement DA-C13 requires such interviews for Capability Category II only when reliable start and finish times are unavailable for significant components. The justification provided for not meeting this requirement discusses the inexperience of plant staff to provide insights on maintenance unavailabilities, and that the data actually used is adequate. Confirm whether interviews are required based on the quality of the data for individual maintenance events, and better justify the actual PRA data without reliance on the experience level of plant staff.
5. In Table 2.2-1 of Attachment 2 of the submittal, Gap #12, Gap #17, and Gap #18, identify that human-induced internal flood data and maintenance alignments are not included in the analysis, but are "judged to have a minor impact." Provide the basis for this judgment.
6. In Table 2.2-1 of Attachment 2 of the submittal, Gap #15 identifies that the effects of internal flooding of jet impingement, humidity, condensation, and temperature are not documented, and have not been addressed for turbine building steamline breaks. The disposition explains that jet impingement is "...judged to have a minor or negligible quantitative impact," and that this gap is a documentation issue only. Provide the basis for why jet impingement is judged to be a minor or negligible issue. Provide a disposition for the other flood effects identified. Provide the basis that the internal flooding analysis properly addresses these effects and that the issue is solely documentation.

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Sincerely,

**/RA/**

Christopher Gratton, Senior Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

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DATE	05/14/10	05/14 /10	05/14 /10