



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

August 22, 2011

Mr. Michael J. Pacilio  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNIT 1 - REQUEST FOR  
ADDITIONAL INFORMATION RELATED TO TECHNICAL SPECIFICATION  
CHANGE FOR MINIMUM CRITICAL POWER RATIO SAFETY LIMIT  
(TAC NO. ME6383)

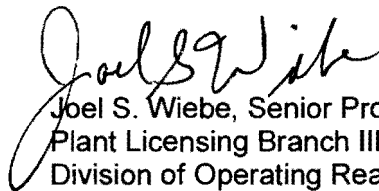
Dear Mr. Pacilio:

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated June 7, 2011, Exelon Generation Company, LLC submitted a request to replace the current single recirculation loop operation safety limit minimum critical power ratio (SLMCPR) requirement for Quad Cities Nuclear Power Station (QCNPS), Unit 1, with a new SLMCPR requirement to support the next cycle of operation (i.e., Cycle 22) for QCNPS, Unit 1, for cycle exposure greater than 4000 MWd/MT, which is currently scheduled to occur in November 2011.

The NRC staff is reviewing your 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. A preliminary copy of the information was provided to your staff by e-mail on August 3, 2011.

On August 19, 2011, your staff stated during a phone call that a response to this request will be provided within 30 days. Your staff was informed and acknowledged that that schedule may prevent the NRC staff from meeting your request to issue the related amendment by September 30, 2011. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-6606.

Sincerely,

  
Joel S. Wiebe, Senior Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-254

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

DOCKET NO. 50-254

In reviewing the Exelon Generation Company's (Exelon's) submittal dated June 7, 2011, related to the request to replace the current single recirculation loop operation (SLO) safety limit minimum critical power ratio (SLMCPR) requirement, for the Quad Cities Nuclear Power Station (QCNPS), Unit 1, the NRC staff has determined that the following information is needed in order to complete its review:

1. Provide:
  - a. The details of the QCNPS, Unit 1, Cycle 22, analysis performed to obtain the final core loading pattern including procedure, guideline, criteria, and approved methodologies used for this analysis, and
  - b. The design document for the QCNPS, Unit 1, Cycle 22, core loading pattern.
2. Provide the fuel bundle critical power ratio distribution in the core for the limiting point in the cycle.
3. Provide:
  - a. Verification that the power to flow map bounds QCNPS, Unit 1, Cycle 22, operation including stability Option III features of scram region and controlled entry region for back up stability protection, and
  - b. A list of approved methodologies used to perform the above stability calculations.
4. Provide the rationale why a 30.4 percent reload batch fraction for SVEA-96 Optima 2 fuel caused the proposed SLMCPR increment of 0.01 for SLO and no change for TLO for the proposed loading pattern in Figure 1 of Attachments 3 and 5 of the Exelon submittal.
5. Provide:
  - a. Or make available for audit, copy of the McSLAP computer code including theory and user's manual;
  - b. A description of the relationship between McSLAP computer code and CENPD-300-P-A;

Enclosure

- c. Details of two errors found in Westinghouse's McSLAP computer code including applicable portions of the methodology described in CENPD-300-P-A, and their impact to the SLMCPR calculation including those at exposure beyond 4000 MWd/MT; and
  - d. Or make available for audit, a flow chart consisting of approved methodologies used for this SLMCPR calculation with respect to their input to each sub-routine calculation.
6. Describe any Part 21 issues relating to the fuel design applied to the QCNPS, Unit 1, Cycle 22, fuel assemblies. Also, with respect to the Part 21 issues, identify all affected factors, and quantify their impact on the parameters shown in Table 2 of Attachment 3.

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/RA/

Joel S. Wiebe, Senior Project Manager  
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