

NRR-PMDAPEm Resource

From: DiFrancesco, Nicholas
Sent: Wednesday, August 03, 2011 9:40 AM
To: joseph.bauer@exeloncorp.com
Cc: Lisa.Schofield@exeloncorp.com; Zimmerman, Jacob; Mahoney, Michael
Subject: DRAFT - Supplemental Information Request Re: Braidwood and Byron MUR LAR (ME6587-ME6590)

Mr. Bauer,

Please find below the staff's draft supplemental information request related to the Braidwood and Byron Measurement Uncertainty Recapture (MUR) License Amendment Requests (LARs). Please advise if you would like a clarification conference call prior to formal issuance of the draft supplemental request. Tentatively, I have scheduled time for a conference call at 2pm eastern on August 11, 2011.

Please free feel to contact me with questions or concerns.

Sincerely,

Nick DiFrancesco

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U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
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DRAFT -- Opportunity for Supplemental Request -- DRAFT

1. In Attachment 5 of the Byron Units 1 & 2 and Braidwood Units 1 & 2 MUR Power Uprate LARs, on Page III-152, section III.17.2.1: Main Steam Line Break Dose Evaluation, the licensee states:

"The atmospheric dispersion factors (X/Q) values have been updated and incorporated into the dose analysis as per the current commitment to the NRC."

-Please provide a list of the updated atmospheric dispersion factors (X/Q values) for the Main Steam Line Break (MSLB) or provide a reference if they are included in a previously docketed submittal.

-Please identify the limiting X/Q values selected from the list that were used in the updated dose analysis that resulted in the limiting dose for the MSLB.

-The commitment to the NRC states that X/Q values are to be updated for finer wind speed categories.

- Please provide any updated data files, descriptions of updated assumptions, and all inputs used to calculate the updated X/Q values for the MSLB.
- For large data files, please provide the data in electronic format suitable for making computer runs.
- For data files, assumptions, and inputs that are unchanged, please cite references to the docketed items.

-Please confirm that the control room atmospheric dispersion factors (X/Q values) for the MSLB remain unchanged.

2. In attachment 5a of the Byron Units 1 & 2 and Braidwood Units 1 & 2 MUR LAR, on Page IV-8, in Table IV-1a: Summary of Comparison of AST Parameters Used in Steam Generator Tube Rupture Dose Analysis, the licensee states:

“All offsite X/Q values were updated for finer wind speed categories per RG 1.23 Revision 1. This was also a commitment per RS-06-01.”

-With regard to the updated atmospheric dispersion factors (X/Q values) for the Steam Generator Tube Rupture (SGTR):

- Please provide any updated data files, descriptions of updated assumptions, and all inputs used to calculate the updated X/Q values.
 - For large data files, please provide the data in electronic format suitable for making computer runs.
 - For data files, assumptions, and inputs that are unchanged, please cite references to the docketed items.
3. The licensee, in the LAR Section V.1.C, Environmental Qualification of Electrical Equipment, stated that the environmental qualification of equipment under abnormal and accident conditions are acceptable for MUR Power Uprate operation. However, the recent concerns related to evaluation of postulated high energy line breaks (HELBs) (such as feed water system pipe stress analysis, mass and energy release analysis, and discrepancy found in the actuation time of fusible links relating to closing of dampers) may adversely impact the operability of Class 1E electrical equipment, and environmental qualification of electrical equipment.

The Electrical Engineering Branch (EEEB) staff requires supplemental information confirming the revised HELB analyses do not adversely impact the qualification of Class 1E electrical equipment, and environmental qualification of electrical equipment.

4. The licensee, in the LAR Section V.1.D, Grid Stability, for Byron Station, stated the following:

“Power flow simulations were performed using 2012 transmission grid models for four system load conditions. The assessment concluded that with one exception, the lowest post-contingency voltage for Byron Station is 349.1 kV, which remains above the minimum required switchyard voltage of 339.8 kV. The scenario that analyzes a unit trip with the other unit in shutdown condition and with a system load level equal to 75% of the 50/50 load forecast results in a post-contingency voltage of 331.9 kV, which is lower than the minimum required voltage of 339.8 kV. This low post contingency voltage for this scenario is an existing (pre MUR) condition and is not related to the MUR Power Uprate. PJM real-time state estimator continuously monitors and predict grid voltages under various contingencies (e.g., unit trips). If the state estimator predicts an inadequate voltage at Byron’s switchyard, the station is notified and abnormal procedure is entered.”

According to 10 CFR Appendix A, GDC-17, both offsite and onsite power should have sufficient capacity and capability to safely shutdown the plant in the event of postulated accidents. The inadequacy of voltage at the switchyard in the above discussed contingency does not ensure adequate capacity and capability of offsite power in accordance with GDC 17. The present temporary solution of a Transmission Operator (PJM state estimator) to notifying the licensee of any inadequate voltage prediction is not acceptable to the staff on permanent basis. The offsite power must be capable to cope with any simultaneous (N-1 grid) contingency and postulated design basis accident. The EEEB staff requires licensee to submit supplemental information to show how it plans to resolve the above issue for pre and post MUR conditions.

5. The Mechanical and Civil Engineering Branch (EMCB) staff has determined that supplemental information will be required in order to begin the full, technical review of the Byron Units 1 and 2 and Braidwood Units 1 and 2 LARs related to the proposed implementation of a MUR power uprate at the facilities. The supplemental information required by EMCB relates to the evaluations performed for the feedwater (FW) piping systems to demonstrate that the system will continue to satisfy the design basis requirements related to postulated HELBs and the allowable values prescribed by the design code of record for the FW piping system. As such, the EMCB staff requests that the following information related the FW piping system be provided prior to the review of the LAR:
- A summary of inputs and assumptions used in the revised analyses of record for those portions of the FW piping system which were re-analyzed at MUR conditions. This summary should compare the inputs and assumptions used in the revised analyses to those used in the current analyses of record for the FW piping.
 - A confirmation that the FW pipe stress analyses were performed in accordance with the design code of record for the affected portions of the FW piping system.
 - A discussion of the results of the re-analyses performed for the affected FW piping, including a tabulated summary of limiting locations on the FW piping run. The tabulated summary should include a comparison of the results of the stress analyses to the code allowable values used in the original design of the affected portions of the FW system in order to demonstrate that the piping will remain structurally adequate following MUR implementation.
 - A discussion of the impacts of the revised pipe stress analyses on the HELBs which are required to be postulated at Byron and Braidwood. This discussion should focus on how the current licensing basis requirements related to HELB postulation at the facilities were applied in determining new or revised HELB locations at MUR conditions.

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Email Number: 128

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