

April 28, 2004

Mr. Bryce L. Shriver
Senior Vice President
and Chief Nuclear Officer
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769 Salem Boulevard, NUCSB3
Berwick, PA 18603-0467

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) - SUSQUEHANNA STEAM
ELECTRIC STATION, UNITS 1 AND 2 (SSES 1 AND 2) - THIRD 10-YEAR
INSERVICE INSPECTION INTERVAL PROGRAM PLAN RE: ALTERNATE
RISK-INFORMED SELECTION AND EXAMINATION CRITERIA FOR
PRESSURE RETAINING PIPING WELDS (TAC NOS. MC1181 AND MC1182)

Dear Mr. Shriver:

In reviewing your submittal of September 16, 2003, relating to Relief Request No. 3RR-01, the Nuclear Regulatory Commission staff has determined that additional information contained in the enclosure to this letter is needed to complete its review. These questions were discussed with your staff during a teleconference on April 8, 2004. As agreed to by your staff, we request you respond within 30 days of the date of this letter.

If you have any questions, please contact me at 301-415-1030.

Sincerely,

/RA/

Richard V. Guzman, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosure: RAI

cc w/encl: See next page

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Accession Number: ML041190242

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NAME	RGuzman	MO'Brien	MRubin	RLaufer
DATE	4/20/04	4/20/04	4/22/04	4/26/04

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REQUEST FOR ADDITIONAL INFORMATION
RELATING TO RELIEF REQUEST NO. 3RR-01 FOR
THIRD 10-YEAR INSERVICE INSPECTION PROGRAM PLAN
ALTERNATE RISK-INFORMED SELECTION AND EXAMINATION CRITERIA FOR
PRESSURE RETAINING PIPING WELDS FOR
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2
PPL SUSQUEHANNA, LLC
DOCKET NOS. 50-387 AND 50.388

1. Regulatory Guide (RG) 1.178, "An Approach for Plant-Specific Risk-Informed Decisionmaking for Inservice Inspection of Piping," Revision 1, dated September 2003, replaced the original "For Trial Use" RG 1.178, dated September 1998. RG 1.178, Revision 1, includes guidance on what should be included in Risk-Informed Inservice Inspection (RI-ISI) submittals. Particularly, in RG 1.178, Section 4.1, the following information is requested:

"A description of the staff and industry reviews performed on the [probabilistic risk assessment] PRA. Limitations, weakness, or improvements identified by the reviewers that could change the results of the PRA should be discussed. The resolution of the review comments, or an explanation of the insensitivity of the analysis, used to support the submittal, should be provided."

 - a) Please briefly describe all weaknesses and limitations identified by the Nuclear Regulatory Commission (NRC) staff during the review of the individual plant examination (IPE) and how these issues have been resolved or an explanation of the insensitivity of the analysis used to support the submittal to the comment. Your submittal also described an expert review on May 29, 1997. Please provide any weakness or limitation identified by the expert and how these issues have been resolved or an explanation of the insensitivity of the analysis used to support the submittal to the comment.
 - b) Has your PRA been peer-reviewed by one of the industry-based groups using a format similar to Nuclear Energy Institute (NEI) 00-02, "Probabilistic Risk Assessment (PRA) Peer Review Process Guidance (Revision A3)? If so, please provide the facts and observations that the peer review team identified as important and necessary to address (Significance Level A and B in NEI 00-02) and describe how these issues have been resolved or provide an explanation of the insensitivity of the analysis used to support the submittal to the comment.

Enclosure

- c) If your PRA has not been peer-reviewed by one of the industry groups, please explain how the reviews that have been performed provide confidence that the quality of the PRA is sufficient to support your RI-ISI analysis.
2. Your submittal discusses the use of the Markov piping analysis method to estimate the change in risk due to adding and removing inspection locations from the inspection program. The submittal refers to Section 3.7.2 of Electric Power Research Institute (EPRI), Topical Report (TR) 112657. The safety evaluation (SE) approving the EPRI methodology (Adams accession no. ML013470102) approved the use of the Markov model as a basis for the direct estimation of pipe failure frequencies instead of the bounding pipe failure frequencies. The SE did not approve the use of the Markov model to estimate the inspection efficiency factor (IEF) that is used in Equation 3-9 in TR-112657 because there is insufficient information in EPRI TR-112657 to fully define the method. The methodology description for estimating the IEF is located in EPRI TR-110161, "Piping System Reliability and Failure Rate Estimation Models for Use in Risk-Informed Inservice Inspection Applications," and EPRI TR-111880, "Piping System Failure Rates and Rupture Frequencies for Use in Risk-Informed In-Service Inspection Applications," (both proprietary). The use of the Markov method to estimate the IEF in Equation 3-9 in EPRI TR-112657 has been approved in some relief requests after sufficient information was provided to fully define the method and the staff found the specific method acceptable (i.e, the SE for Dresden (Adams accession no. ML012050103)).

Please clarify how the Markov method was used to estimate the change in risk due to adding and removing inspection locations from the inspection program. If it is possible to identify a previously approved risk-informed inservice inspection relief request that used the same methodology that was used in your submittal, a more limited discussion of the method and the identification of the relevant relief request should be sufficient.

3. In Tables 7 and 8 of your submittal dated September 16, 2003, there are columns provided for ASME Code, Section XI, core damage frequency (CDF), RI-ISI CDF, and delta CDF (that can be obtained as the difference of the first two columns). Although there are no columns for Section XI large early release frequency (LERF) and RI-ISI LERF, there is a column for delta LERF. Please confirm that delta LERF reported in the tables was calculated as it was for CDF and that the two LERF values were intentionally not provided in the tables.

Susquehanna Steam Electric Station, Unit Nos. 1 and 2

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