

February 6, 2003

Mr. Mark B. Bezilla
Vice President
FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
Post Office Box 4
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2 (BVPS-1 AND 2)
SECOND REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING
RISK-INFORMED INSERVICE INSPECTION PROGRAM PLANS INSERVICE
INSPECTION (ISI) PROGRAM RELIEF REQUEST L-02-066 (TAC NOS.
MB5687 AND MB5688)

Dear Mr. Bezilla:

By letter dated July 24, 2002, FirstEnergy Nuclear Operating Company (FENOC) submitted a relief request to allow implementation of a Risk-Informed ISI Program as an alternative to the current American Society of Mechanical Engineers, Section XI, ISI requirements for piping at the BVPS-1 and 2.

By letter dated December 30, 2002, the Nuclear Regulatory Commission (NRC) staff forwarded an RAI seeking clarification or additional information on several areas of the July 24, 2002, submittal. Subsequent to the NRC's issuance of the December 30, 2002, RAI, the NRC staff identified an additional area of concern that requires clarification or additional information in order for the NRC staff to complete its review. Enclosed is the NRC staff's second RAI associated with your application. The question in the enclosed RAI was discussed with Mr. B. Sepelak of your staff. Mr. Sepelak indicated that FENOC intends to provide a response to the enclosed RAI at the same time that a response is provided to the December 30, 2002, RAI. Please contact me as soon as possible if circumstances arise that require changes to this proposed schedule. If you have any questions, please contact me at 301-415-1427.

Sincerely,

/RA/

Daniel S. Collins, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosure: RAI

cc w/encl: See next page

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Beaver Valley Power Station, Units 1 and 2

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REQUEST FOR ADDITIONAL INFORMATION (RAI)

BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-334 AND 50-412

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing FirstEnergy Nuclear Operating Company's July 24, 2002, Inservice Inspection (ISI) Program Relief Request L-02-066 for the Beaver Valley Power Station, Unit Nos. 1 and 2, which would implement a risk-informed ISI program (RI-ISI).

By letter dated December 30, 2002, the NRC staff forwarded an RAI seeking clarification or additional information on several areas of the July 24, 2002, submittal. Subsequent to the NRC's issuance of the December 30, 2002, RAI, the NRC staff identified the following additional area of concern that requires clarification or additional information in order for the NRC staff to complete its review. The question numbering reflects that this is a continuation of the questions contained in the December 30, 2002, RAI.

A. UNITS 1 AND 2

17. In the enclosure to the July 24, 2002, application, Table 3.7-1 indicates that the expert panel moved a number of piping segments that have risk reduction worth (RRW) values greater than 1.005 from high safety significant (HSS) to low safety significant (LSS) based on their judgment. For example, in Unit 1, Table 3.7-1 reports that the charging (CH) system has 26 segments with RRW greater than 1.005. The table also reports that, in the CH system, 7 segments with RRW between 1.005 and 1.001 were placed in HSS. This indicates that the total number of HSS segments is expected to be 26 plus 7, or 33 segments. However, the total number of HSS segments in the CH system is reported as 28. In the same table, the safety injection (SI) system is reported to have 34 segments with RRWs greater than 1.005 but a final of 30 segments are defined as HSS. Similar examples can be identified in Table 3.7-1 for Unit 2.

The NRC staff recognizes that Topical Report, WCAP-14572, Revision 1-NP-A, allows the expert panel to use deterministic information to place segments with RRW values greater than 1.005 in the LSS category; however, page 143 of the topical report states that HSS "segments should not be classified lower by the expert panel without sufficient justification that is documented as part of the [RI-ISI] program. The expert panel should be focused primarily on adding piping to the higher classification." Justification for the reclassification of HSS segments to LSS should include a description of the specific characteristics that support the expert panel's decision that the safety-significance of the segment is lower than the results of the quantitative evaluation and guidelines indicate. Sufficient detail is also needed such that the impact of future plant modifications on the characteristics selected by the expert panel when determining the safety-significance can be systematically evaluated to ensure continued applicability of the assigned classification.

Based on a review of previous submittals, there are two types of results from the quantitative analysis that expert panels have modified in order to reclassify segments from HSS to LSS. These results involve: 1) human actions responding to the pipe failure; and, 2) material and operation characteristics of the segment. In order to expedite the review of the July 24, 2002, application, the type of information required to support the NRC staff review is provided below.

Reclassifying a HSS segment as LSS is often based on discarding a "without human action" RRW when that RRW is the only RRW that is greater than 1.005. This reclassification is based on a high degree of confidence by the expert panel that the operators could appropriately recover from the event. A basis for the decision would include a description of the information available to the operators to identify the failed functions, systems or component caused by the pipe failure; the procedures the operator would follow; the time available for the operator to recover; the time required by the operator to diagnose and recover the failed functions; and the equipment available to recover from or mitigate the failures. Note that the ASME Standard for Probabilistic Risk Assessment (PRA) for Nuclear Power Plant Applications only discusses proceduralized actions and non-proceduralized, skill-of-the-craft actions for use in PRA.

Reclassifying a HSS segment to a LSS segment is often based on discarding the pipe frequency estimate that is, in turn, based on material or operational characteristics input into the Structural Reliability and Risk Assessment code. A basis for the decision should include an identification of those properties that resulted in the original HSS designation, the change in those properties that the expert panel determined more appropriately characterize the actual state of the structure, system, or component, and a discussion why the properties the expert panel developed are expected to reduce the safety-significance of the segments from HSS to LSS.

Therefore:

- (a) Clarify if the expert panel reclassified segments from HSS to LSS and, if so, identify how many segments were reclassified from HSS to LSS.
- (b) Provide the justification documented as part of your RI-ISI program for each segment (or group of segments if the justification may be grouped) that was reclassified from HSS to LSS. For example, some documentation should be in the expert panel's meeting minutes. If the documented justification does not include the information discussed above, please provide the level of justification discussed above.