

**L. William Pearce**  
Site Vice President

724-682-5234  
Fax: 724-643-8069

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L-03-037

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555-0001

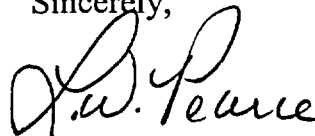
**Subject: Beaver Valley Power Station, Unit No. 1 and No. 2**  
**BV-1 Docket No. 50-334, License No. DPR-66**  
**BV-2 Docket No. 50-412, License No. NPF-73**  
**Reply to Request for Additional Information Regarding**  
**Risk-Informed Inservice Inspection Program Relief Request**

On July 24, 2002, the FirstEnergy Nuclear Operating Company (FENOC) submitted a relief request to allow implementation of a Risk-Informed Inservice Inspection (ISI) Program as an alternative to the current ASME Section XI requirements for piping at Beaver Valley Power Station (BVPS) Unit 1 and Unit 2. The NRC, following an initial review of this submittal, issued a Request for Additional Information (RAI) on December 30, 2002, regarding the FENOC relief request. Information in response to the RAI (Items # 1 - 16) was submitted via letter L-03-016 dated February 18, 2003.

On February 6, 2003, a second RAI was issued by the NRC. A response to this additional issue (Item # 17) is enclosed.

There are no new regulatory commitments identified in this document. If there are any questions concerning this matter, please contact Mr. Larry R. Freeland, Manager, Regulatory Affairs/Performance Improvement at 724-682-5284.

Sincerely,



L. William Pearce

Enclosure

c: Mr. T. G. Colburn, NRR Senior Project Manager  
Mr. D. M. Kern, NRC Sr. Resident Inspector  
Mr. H. J. Miller, NRC Region I Administrator

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## Enclosure 1

### Reply to Request for Additional Information Regarding Beaver Valley Power Station (BVPS) Units 1 and 2 Risk-Informed Inservice Inspection (RI-ISI) Program Relief Request

The Request for Information, dated February 6, 2003, provided the following additional item to be addressed:

#### 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 judgement. 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.*

BV Response:

The expert panel reclassified a total of 121 segments at BVPS (64 at Unit 1 and 57 at Unit 2). Thirty-five (35) segments were reclassified from high safety significant (HSS) to low safety significant (LSS). Eighty-six (86) segments were reclassified from LSS/MSS (medium safety significant) to HSS.

The majority of the downgraded segments were reclassified due to credible operator action. The expert panel documentation contains justification for each segment. However, the documentation does not contain the detail requested, since WCAP-14572 did not require this level of detail. The level of detail needed for a sufficient justification is a generic issue that is currently being addressed by the Westinghouse Owners Group (WOG) and the NRC (Reference 1). A more detailed response to this RAI will be provided, as applicable, once the resolution of this generic issue is obtained.

Enclosure 1 (continued)

Reference:

1. Letter from Robert Bryan, Jr. (Chairman, Westinghouse Owners Group) to Samuel J. Collins (NRC), NRC Requests for Additional Information (RAIs) Associated with Plant Specific Applications of the Methodology in WCAP-14572-NP-A, Rev. 1, "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report," dated April 21, 2003.