

November 26, 2004

Bill Eaton, BWRVIP Chairman  
Entergy Operations, Inc.  
Echelon One  
1340 Echelon Parkway  
Jackson, MS 39213-8202

SUBJECT: SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF  
BWR VESSEL AND INTERNALS PROJECT REPORT, BWRVIP-76, "BWR  
CORE SHROUD INSPECTION AND FLAW EVALUATION GUIDELINES"

Dear Mr. Eaton:

By letter dated December 9, 1999, you submitted for NRC staff review, Electric Power Research Institute (EPRI) proprietary report, BWRVIP-76, "BWR Vessel and Internals Project, BWR Core Shroud Inspection and Flaw Evaluation Guidelines." The purpose of this report is to define generic acceptance standards and inspection intervals for horizontal and vertical welds in repaired and un-repaired core shrouds, and procedures for determining plant-specific inspection intervals when the generic acceptance standards are not applicable. The report also includes generic inspection intervals and acceptance standards for radial ring welds, repair hardware and repair anchorages in repaired core shrouds.

In addition to the request for additional information (RAI) that the staff sent to you on July 9, 2004, the staff has determined that supplemental information is needed to complete the review. The supplemental RAIs regarding the BWRVIP-76 report is attached. If you have any questions, please contact Meena Khanna at (301) 415-2150.

Sincerely,

**/ RA**

Stephanie Coffin, Chief  
Vessels & Internals Integrity and Welding Section  
Materials and Chemical Engineering Branch  
Division of Engineering  
Office of Nuclear Reactor Regulation

Project No. 704

Enclosure: As stated

cc: BWRVIP Service List

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SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION REGARDING  
BWRVIP-76: "BWR CORE SHROUD INSPECTION AND FLAW EVALUATION GUIDELINES"

**SUPPLEMENTAL RAI 76-1**

In accordance with Section 3.5 of BWRVIP-76, a "detailed" inspection of repair assemblies shall include VT-3 of accessible locking devices, critical gap or contact areas, bolting, and the overall component. Since there are a limited number of repair hardware designs, identify the additional inspections required by the "detailed" inspections for the existing designs.

**SUPPLEMENTAL RAI 76-2**

Aging degradation of reactor vessel internals has been an ongoing problem in BWRs. Based on this statement, the staff requests the BWRVIP to discuss why the 10 year interval for performing inspections as identified in Section 3.5 of BWRVIP-76 is considered adequate. To demonstrate the adequacy of the 10 year inspection interval, the staff requests the BWRVIP to provide all data that demonstrates the impact of neutron fluence on the integrity of the repair assembly replacement material (i.e. 316L, XM-19, and Inconel X-750).

**SUPPLEMENTAL RAI 76-3**

The first paragraph of Section 3.5 of BWRVIP-76 states: "Bolt-tightness shall be verified in cases where it is critical in maintaining repair/replacement component operability. Further, a detailed inspection may include additional scope as specified by the designer."

The second paragraph of Section 3.5 of BWRVIP-76 states: "Bolt tightness may be verified by visually examining the repair assembly and verifying that threaded components are seated and there are no unintended gaps at tensioned member contact points. Alternately, other means of verification of bolt tightness may be specified where visual examination is not feasible or adequate. It is not necessary to confirm the amount of repair assembly preload during routine inspection of repair hardware."

The staff interprets the first paragraph to require bolt tightness for components where it is critical to maintain repair and replacement operability. Visual inspections are not considered adequate for verifying bolt tightness and would not be acceptable to the staff in cases where bolt tightness is critical to component operability.

The staff interprets the second paragraph to be the requirements that are followed for all other non-critical components.

The staff requests the BWRVIP to confirm if the staff's interpretation is correct and to clarify the first two paragraphs accordingly.

ENCLOSURE