

March 10, 2006

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

SUBJECT: NRC APPROVAL LETTER FOR BWRVIP-55-A, "BWR VESSEL AND  
INTERALS PROJECT, LOWER PLENUM REPAIR DESIGN CRITERIA"

Dear Mr. Eaton:

By letter dated September 21, 2005, the Boiling Water Reactor Vessel and Internals Project (BWRVIP) submitted Proprietary Report BWRVIP-55-A, "BWR Vessel and Internals Project, Lower Plenum Repair Design Criteria," for Nuclear Regulatory Commission (NRC) staff review. The BWRVIP-55-A report provides general design acceptance criteria for the temporary and permanent repair of cracked or leaking internal components in the reactor vessel lower plenum area. These guidelines are intended to maintain the structural integrity of the internal components in the reactor vessel lower plenum area during normal operation, postulated transient, and design basis accident conditions. The BWRVIP provided the BWRVIP-55-A report to support generic regulatory efforts related to the repair of BWR internal components in the reactor vessel lower plenum area.

The BWRVIP-55-A report presents a compilation of information from the BWRVIP-55 report and the NRC staff final safety evaluation (SE) dated August 20, 2004, which includes the BWRVIP's associated responses to NRC staff requests for additional information (RAIs) and open items.

The NRC staff has reviewed the information in the BWRVIP-55-A report and has found that the report accurately incorporates all of the relevant information which was submitted by the BWRVIP in the documents noted above to support NRC staff approval of the report. The staff found that minimal revisions were made to the BWRVIP-55 report in the production of the BWRVIP-55-A report. These revisions are discussed in detail below.

The first revision was with respect to the deletion of text from Section 9.1, "Materials, Fabrication, and Welding," and Section 9.3, "Pre-Installation As-Built Inspection," of the BWRVIP-55 report. In addition, the BWRVIP removed References 5-7 of the BWRVIP-55 report and replaced these references with a reference (Reference 6) to the BWRVIP-84 report, "Guidelines for Selection and Use of Materials and Repairs." The BWRVIP determined that the material and fabrication requirements would be removed from the BWRVIP-55 report since they are already contained in the BWRVIP-84 report. The staff found this acceptable because the material and fabrication requirements are adequately included in the BWRVIP-84 report.

The second revision was that the BWRVIP revised the page after the title page based on the staff's recommendation in its initial SE dated September 21, 2001. The staff recommended that the BWRVIP clarify that the criteria contained in the BWRVIP-55 report were for the repair of lower plenum components. The staff determined that the BWRVIP adequately revised the text on the page after the title page of the BWRVIP-55 report to indicate that the criteria were for the repair of the lower plenum components.

The third revision was that the BWRVIP revised Section 7.12 of the BWRVIP-55 report to apply the minimum corrosion allowance for exposed austenitic stainless steel surfaces of 0.003 inch for a 60-year design life. This corrosion allowance had originally been approved for a 40-year design life. This extension was based on the information that the BWRVIP provided in its response to RAI Item 2, with respect to the BWRVIP-50 report, "Top Guide/Core Plate Repair Design Criteria," in its letter dated December 6, 1999. By SE dated January 29, 2001, the staff found that the BWRVIP had adequately responded to RAI Item 2. Therefore, the staff determined that the BWRVIP adequately revised Section 7.12 of the BWRVIP-55 report to extend the minimum corrosion allowance for exposed austenitic stainless steel surfaces of 0.003 inch from a 40-year design life to a 60-year design life.

The fourth revision was that the BWRVIP revised Section 10 of the BWRVIP-55 report to address the staff's recommendation that pre- and post-installation inspections required for the repaired lower plenum component(s) shall be consistent with the intent of the requirements of the BWRVIP-47 report, "BWR Lower Plenum Inspection and Flaw Evaluation Guidelines," when applicable. The staff determined that the BWRVIP adequately revised Section 10 of the BWRVIP-55 report to address its recommendation regarding the pre- and post-installation inspections of the lower plenum components to be consistent with the intent of the BWRVIP-47 report, when applicable.

The next revision was that the BWRVIP revised Section 9.2 of the BWRVIP-55 report regarding crevices. The revisions were made for consistency with the other repair design criteria reports. A statement, "the design shall minimize crevices between new components, and between new components and original components, to minimize the potential for crevice-induced stress corrosion cracking," was included in Section 9.2 of the report. The staff determined that the BWRVIP adequately revised Section 9.2 of the BWRVIP-55 report to be consistent with the other repair design criteria reports regarding crevices.

The next revision was that the BWRVIP added Section 9.4, "Post Installation As-Built Inspection," to the BWRVIP-55 report for consistency with the other repair design criteria reports to ensure that the repair hardware is correctly installed. The staff determined that the BWRVIP adequately revised Section 9.4 of the BWRVIP-55 report to be consistent with the other repair design criteria reports regarding post-installation as-built inspections.

For the last revision, the BWRVIP added Item (f) to Section 9.5, "Installation Cleanliness," of the BWRVIP-55 report which requires the evaluation to include the specific requirements of the utility's loose parts or foreign material exclusion program. The staff determined that the BWRVIP adequately revised Section 9.5 of the BWRVIP-55 report to enhance the evaluations for minimizing the in-vessel debris generation with respect to the repair of the reactor vessel lower plenum components.

Based on the discussion above, the staff has determined that the BWRVIP-55-A report is acceptable. Please contact Meena Khanna of my staff at (301) 415-2150 if you have any further questions regarding this subject.

Sincerely,

**/RA/**

William H. Bateman, Deputy Director  
Division of Component Integrity  
Office of Nuclear Reactor Regulation

cc: BWRVIP Service List

B. Eaton

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For the last revision, the BWRVIP added Item (f) to Section 9.5, "Installation Cleanliness," of the BWRVIP-55 report which requires the evaluation to include the specific requirements of the utility's loose parts or foreign material exclusion program. The staff determined that the BWRVIP adequately revised Section 9.5 of the BWRVIP-55 report to enhance the evaluations for minimizing the in-vessel debris generation with respect to the repair of the reactor vessel lower plenum components.

Based on the discussion above, the staff has determined that the BWRVIP-55-A report is acceptable. Please contact Meena Khanna of my staff at (301) 415-2150 if you have any further questions regarding this subject.

Sincerely,

**/RA/**

William H. Bateman, Deputy Director  
Division of Component Integrity  
Office of Nuclear Reactor Regulation

cc: BWRVIP Service List

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