

September 1, 2005

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

SUBJECT: NRC APPROVAL LETTER OF BWRVIP-47-A, "BWR VESSEL AND  
INTERNALS PROJECT BOILING WATER REACTOR LOWER PLENUM  
INSPECTION AND FLAW EVALUATION GUIDELINES"

Dear Mr. Eaton:

By letter dated November 18, 2004, the Boiling Water Reactor Vessel and Internals Project (BWRVIP) submitted Proprietary Report BWRVIP-47-A, "BWR Vessel and Internals Project Boiling Water Reactor Lower Plenum Inspection and Flaw Evaluation Guidelines," for Nuclear Regulatory Commission (NRC) staff review.

The BWRVIP-47-A report provides generic guidelines for the inspection of components in the lower plenum region of BWR vessels. The components that are addressed include the control rod drive (CRD) housing and the stub tube, control rod guide tube and orificed fuel support, and in-core housing, guide tube and dry tube assemblies. The BWRVIP-47-A report also provides recommendations of acceptable methods for evaluating the structural significance of flaws that are detected during these examinations.

The BWRVIP-47-A report presents a compilation of information from several sources: the subject proprietary report, BWRVIP responses to NRC staff requests for additional information (RAIs) regarding the subject report, and the NRC staff's final safety evaluation (SE) dated October 13, 1999. It should be noted that the BWRVIP also made modifications to the subject report based on the recommendations that the staff provided in its initial SE of the BWRVIP-47 report dated April 7, 1999.

The NRC staff has reviewed the information in the BWRVIP-47-A report and has found that the report accurately incorporates all of the relevant information in the documents noted above to support NRC staff approval of the report. The staff found that minimal technical changes were made in the production of the BWRVIP-47-A report. The first revision was that the BWRVIP, in response to Item 5.0 of the staff's SE dated April 7, 1999, modified Section 5.0 in its entirety to address the staff's recommendation regarding the inclusion of additional guidance on general flaw evaluation methods. The staff determined that the BWRVIP adequately modified Section 5.0 of the BWRVIP-47-A report to address the staff's recommendation by revising the text to include comprehensive guidance on general flaw evaluation methods, which included a discussion of the following: applying specific flaw evaluation methodologies to lower plenum

components, categorization of lower plenum components, application of methods for developing acceptable flaw sizes, and the determination of reinspection interval and frequency based on flaw evaluation results.

The second revision was with respect to the deletion of Section 3.2.5, "Reporting of Inspection Results," of the BWRVIP-47-A report. The BWRVIP determined that all reporting requirements would be removed from the BWRVIP-47-A report since they are already contained in the BWRVIP-94 report, "Program Implementation Guide." The staff found this acceptable because all reporting requirements for inspection and evaluation guidelines are adequately included in the BWRVIP-94 report.

For the third revision, the BWRVIP, in response to Item 3.2.2 of the staff's initial SE dated April 7, 1999, added a revised Section 3.2.5, "Other Inspections," to include a requirement to report "ancillary" lower plenum inspection data (i.e., results of inspections not specifically required by the BWRVIP-47 report) to the BWRVIP. The staff determined that the BWRVIP adequately modified the BWRVIP-47-A report to address the staff's recommendation regarding the requirement of BWR licensees to report the "ancillary" lower plenum inspection data to the BWRVIP.

The fourth revision was with regard to the staff's recommendation regarding Item 3.1 in the October 13, 1999, SE. The staff recommended in its SE dated October 13, 1999, that the BWRVIP add a requirement to the BWRVIP-47-A report, that an initial baseline inspection be performed on all safety-significant location and components that are practicable to inspect based on tooling available. In response to the staff's recommendation, the BWRVIP added the following statements to the revised Section 3.2.5 of the BWRVIP-47-A report, "The BWRVIP has determined that removing or dismantling of internal components for the purpose of performing inspections is not warranted to assure safe operation. However, on occasion, utilities may have access to the lower plenum due to maintenance activities not part of normal refueling outage activities. In such cases, utilities will perform a visual inspection to the extent practical. Results of the inspection will be reported to the BWRVIP and will be forwarded by the BWRVIP to the NRC." The staff has evaluated the BWRVIP's response regarding Item 3.1. The BWRVIP's position, as stated in the BWRVIP-47-A report, is to perform a minimum visual inspection (VT-3 or EVT-1, depending on the component or weld) of 5% of the weld or component population within the first 6 years of the period. The staff found this to be adequate without the need of a near-term baseline inspection when adequate tooling is available. Therefore, the staff determined that the BWRVIP's response adequately addressed Item 3.1 and found that the BWRVIP satisfactory revised Section 3.2.5 of the BWRVIP-47-A report.

With respect to the fifth revision, in response to Item 3.2.4 of the April 7, 1999, SE, the BWRVIP modified Section 3.2.4 of the BWRVIP-47 report to state "...reinspection recommendations will be developed at a later date and provided to the NRC." The staff determined that the BWRVIP adequately modified Section 3.2.4 of the BWRVIP-47-A report to address its recommendation.

The last revision was with respect to Open Item 3.3.4 of the staff's SE on the BWRVIP-03 report, "Reactor Pressure Vessel and Internals Examination Guidelines." The staff required that "all BWRVIP inspection and evaluation guidelines be revised to replace Core Spray VT-1 (CSVT-1) and modified visual testing (MVT-1) by enhanced visual testing (EVT-1), VT-1, or VT-3. In addition, EVT-1 is to be specified as the primary technique when fine, tight IGSCC is a primary concern. In all other locations, VT-1 or VT-3 will be used as appropriate." Therefore, in response to this open item, the BWRVIP revised the wording in several places throughout the BWRVIP-47-A report, to replace "MVT-1" with "EVT-1." The staff found that the BWRVIP adequately revised the applicable sections of the BWRVIP-47-A report to address Open Item 3.3.4 of the BWRVIP-03 report.

Also, the staff noted that several minor clarifications were made in the report. The staff confirmed that the clarifications did not impact the technical aspects of the report.

Based on the discussion above, the staff has determined that the BWRVIP-47-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 by M. Mitchell for W. Bateman)/***

William H. Bateman, Chief  
Materials and Chemical Engineering Branch  
Division of Engineering  
Office of Nuclear Reactor Regulation

Attachment: As stated

cc: See next page

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William H. Bateman, Chief  
 Materials and Chemical Engineering Branch  
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 Office of Nuclear Reactor Regulation

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