

June 3, 2016

Mr. W. Anthony Nowinowski, Program Manager  
PWR Owners Group, Program Management Office  
Westinghouse Electric Company  
1000 Westinghouse Drive, Suite 380  
Cranberry Township, PA 16066

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RE: PRESSURIZED WATER REACTOR OWNERS GROUP TOPICAL REPORT BAW-1543, REVISION 4, SUPPLEMENT 7, "SUPPLEMENT TO THE MASTER INTEGRATED REACTOR VESSEL SURVEILLANCE PROGRAM" (TAC NO. MF5701)

Dear Mr. Nowinowski:

By letters dated January 23, 2015 (Agencywide Documents Access and Management System Accession No. ML15033A086), the Pressurized Water Reactor Owners Group submitted Topical Report BAW-1543, Revision 4, Supplement 7, "Supplement to the Master Integrated Reactor Vessel Surveillance Program," for U.S. Nuclear Regulatory Commission (NRC) staff review. Upon review of the information provided, the NRC staff has determined that additional information is needed to complete the review. Mr. Chad Holderbaum, of your staff, and I agreed that the NRC staff will receive your response to the enclosed Request for Additional Information (RAI) questions within 60 days from the date of this letter. If you have any questions regarding the enclosed RAI questions, please contact me at 301-415-4053.

Sincerely,

***/RA L. Wilkins for/***

Jonathan G. Rowley, Project Manager  
Licensing Processes Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Project No. 694

Enclosure:  
RAI questions

cc w/encl: See next page

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**NRR-106**

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DATE	6/2/16	06/02/2016	6/3/16	6/3/16

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**REQUEST FOR ADDITIONAL INFORMATION**  
**REVIEW OF BAW-1543, REVISION 4, SUPPLEMENT 7**  
**“SUPPLEMENT TO THE MASTER INTEGRATED REACTOR**  
**VESSEL SURVEILLANCE PROGRAM”**

**RAI 1**

**BACKGROUND**

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix H, requires licensees to maintain reactor vessel material surveillance programs. The purpose of these programs is to monitor changes in the fracture toughness properties of ferritic materials in the reactor vessel beltline region that result from the exposure of these materials to neutron irradiation and the thermal environment. The surveillance capsules are withdrawn periodically and tested in accordance with the approved schedule and the requirements of Appendix H to 10 CFR Part 50, “Reactor Vessel Material Surveillance Program Requirements.”

**ISSUE**

Appendix H to 10 CFR Part 50 describes the requirements for reactor vessel material surveillance programs. In addition for license renewal, NUREG-1801, Generic Aging Lessons Learned (GALL) Report Aging Management Program XI.M31 *Reactor Vessel Surveillance*, provides additional information regarding reactor vessel material surveillance programs for the period of extended operation (to 60 years).

The submittal states, “Table 1-3 was revised by changing the capsule status of the Master Integrated Reactor Vessel Surveillance Program supplemental capsules A2 and A4.”

**REQUEST**

In the submittal, the status of the supplemental capsules A2 and A4 in Table 1-3 (“Capsule Insertion and Withdrawal Schedule for Crystal River Unit 3”) was changed to “withdrawal not planned.” TR BAW-1543, Revision 4, Supplement 6, included withdrawal and testing plans for these capsules. Provide a list of the materials contained in supplemental capsules A2 and A4; identify the plants with the same weld material heat numbers as the surveillance capsule materials; and provide a description of how the proposed revision to change the status of these capsules to “withdrawal not planned” will continue to meet the objectives of the Pressurized Water Reactor Owners Group’s Master Integrated Reactor Vessel Surveillance Program (MIRVSP) through the period of extended operation.

The response should also address the statements in the letter dated February 15, 2007 (Agencywide Documents Access and Management System Accession No. ML070510233), where Capsules A2 and A4 are discussed. Although the context of the responses were developed to support a change in withdrawal and testing from the end of the seventeenth fuel cycle to the end of the twenty-ninth fuel cycle, the role of the specimens in Capsules A2 and A4

Enclosure

to meet the objectives of the MIRVSP is discussed in several places. The response should describe the impact of not testing Capsules A2 and A4, including the impact to the objectives met by Capsules A2 and A4 as described in the February 15, 2007, letter, and the impact to any other plants in the MIRVSP. It should be noted that although the neutron fluence accumulated by a surveillance capsule may lag the neutron fluence of the reactor vessel, that does not invalidate the data. In addition, include a full description of the phrase, "withdrawal not planned."

## **RAI 2**

### **BACKGROUND**

Appendix H to 10 CFR Part 50 requires licensees to maintain reactor vessel material surveillance programs. The purpose of these programs is to monitor changes in the fracture toughness properties of ferritic materials in the reactor vessel beltline region that result from the exposure of these materials to neutron irradiation and the thermal environment.

### **ISSUE**

Appendix H to 10 CFR Part 50 describes the requirements for reactor vessel material surveillance programs. In addition, for license renewal, NUREG-1801, GALL Report Aging Management Program XI.M31 Reactor Vessel Surveillance, provides additional information regarding reactor vessel material surveillance programs for the period of extended operation (to 60 years).

Appendix H, Section IV, Part A states, "Each capsule withdrawal and the test results must be the subject of a summary technical report to be submitted, as specified in [10 CFR] 50.4, within one year of the date of capsule withdrawal, unless an extension is granted by the Director, Office of Nuclear Reactor Regulation."

### **REQUEST**

Table 1-8 (Comparison of the Plant-Specific Surveillance Capsules with ASTM E 185-82 Requirements) column heading states, "EOL [end of license] or 1-2 times EOL fluence (Capsule may be held without testing)." Staff requests revision of Table 1-8 for consistency with Appendix H, Section IV, Part A.