

May 14, 2018

MEMORANDUM TO: Dennis C. Morey, Chief
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Division of Licensing Projects
Office of Nuclear Reactor Regulation

FROM: Joseph J. Holonich, Senior Project Manager /RA/
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SUBJECT: SUMMARY OF APRIL 23, 2018, CONFERENCE CALL TO DISCUSS
CLARIFICATION OF MRP-227, REVISION 1 REQUESTS FOR
ADDITIONAL INFORMATION

On April 23, 2018, U.S. Nuclear Regulatory Commission (NRC) staff held a conference call with representatives from the Electric Power Research Institute (EPRI). The purpose of the call was to discuss clarification of the Request for Additional Information (RAI) on Topical Report MRP-227, Revision 1, "Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluations Guideline." The NRC staff also provided an additional RAI at the meeting.

The clarification topics and additional RAI are provided in the enclosure to this summary. All other information related to the meeting and discussed in this summary can be found in the Agencywide Documents Access and Management System (ADAMS) Accession No.: ML17164A004.

In its opening remarks, the NRC staff explained that there were several RAIs where clarifications or more information was needed from the responses already submitted by EPRI. NRC staff stated that it would look to EPRI to provide a supplemental response to those RAIs.

EPRI reported in its opening remarks that it was in the process of preparing clarifying information for items from the February 15, 2018, meeting (ADAMS Package Accession No.: ML18025B386) on the MRP-227, Revision 1 RAIs. The expectation was that this information would be provided to the NRC in two to three weeks. EPRI stated that some of the clarifications to be discussed during this meeting were already in that supplemental letter. Other information from the discussions today would be included in that letter.

As a result of the discussions held, the following information is provided for each RAI identified in the enclosure.

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RAI 1

EPRI committed to add a footnote to the table to clarify what is meant by the ten-year interval.

RAI 4

Framatome stated that four of the six Babcock and Wilcox units had completed the baseline inspections. The remaining two had sent the NRC letters with their intent to permanently shut down. Further, it was stated that if this status changes, a letter would be sent to the NRC. Therefore, it was noted that if MRP-227, Revision 1 was accepted for use and a –A version issued, the plants that currently intend to shut down would follow MRP-227, Revision 1 should it be accepted for use.

A commitment was made to add a note which would state that it is assumed that the baseline inspections have been completed.

RAI 8

EPRI agreed to clarify that “atypical or aggressive degradation” referenced in the note means greater than three-percent of bolts with indications for down-flow plants and greater than five percent of bolts with indications for up-flow plants, or clustering, as defined in the EPRI interim guidance for baffle-former bolt inspections.

RAI 9

Language similar to the response to RAI 10 will also be included in the response to RAI 9.

RAI 17

A discussion was held on whether to add a footnote to Table 4-4 to help address this NRC staff concern or if it could be done generically. EPRI took an action to evaluate whether the clarification could be done generically for all three vendors by adding a sentence in the body of the report instead of footnotes to tables.

RAI 19

Because MRP-227, Revision 1 references a revision to WCAP-17451-P, “Reactor. Internals Guide Tube Card Wear – Westinghouse. Domestic Fleet Operational Projections,” that has not been accepted for use by the NRC staff, EPRI committed to add a footnote to the Westinghouse table that would say the accepted-for-use version of WCAP-17451-P and the interim guidance letters should be used.

RAI 21

The NRC staff stated it was satisfied with the RAI response after the clarifications. EPRI agreed to provide a summary of the clarifying discussion in its letter.

New RAI

The new RAI included in the enclosure was discussed and EPRI stated it would provide a response in its planned submittal.

After the RAIs were discussed, the NRC staff asked a question about what was meant by the three-year implementation contained in MRP-227, Revision 1. EPRI explained that the three-year period for implementation was from the December 2017 submittal of MRP-227, Revision 1. Based on the discussion, EPRI agreed to change the timing for implementation to state either three years from the date of the topical report or within one year of the NRC staff safety evaluation, should MRP-227, Revision 1 be found acceptable for use.

The following actions for EPRI were identified at the meeting:

- 1) add a footnote to the table to clarify what is meant by the ten-year interval;
- 2) add a note which states that it is assumed that the baseline inspections have been completed;
- 3) clarify that “atypical or aggressive degradation” means greater than three-percent of bolts with indications for down-flow plants and greater than five percent of bolts with indications for up-flow plants, or clustering, as defined in the EPRI interim guidance for baffle-former bolt inspections;
- 4) evaluate whether the clarification could be done generically for all three vendors by adding a sentence in the body of the report instead of footnotes to tables;
- 5) add a footnote to the Westinghouse table that says the accepted-for-use version of WCAP-17451-P and the interim guidance letters should be used; and
- 6) change the timing for implementation to state either three years from the date of the topical report or within one year of the NRC staff safety evaluation, should MRP-227, Revision 1 be found acceptable for use.

D. Morey

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SUBJECT: SUMMARY OF APRIL 23, 2018, CONFERENCE CALL TO DISCUSS CLARIFICATION OF MRP-227, REVISION 1 REQUESTS FOR ADDITIONAL INFORMATION DATED: MAY 14, 2018

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**Clarification Topics and Additional Request for Additional Information
Discussed on the April 23, 2018 Conference Call on
MRP-227, Revision 1**

Clarification Topics

- RAI 1, Babcock and Wilcox (B&W): The response clarified that the intent of the change in the wording describing the initial inspection schedule was not to allow plants to wait 20 years before doing baseline. However, no changes were proposed to the topical report. Although the response stated the intent was that the initial exams would be performed prior to the end of the 4th in-service inspection (ISI) interval, the NRC staff is concerned this could be misinterpreted by a licensee.
- RAI 4, B&W: The response indicates that the change in the initial examination schedule for the baffle-to-former bolts to “during the next ten-year ISI interval” assumes that a baseline examination of the bolts has been completed. Please clarify if all the B&W units have completed the baseline of baffle-former bolts.
- RAI 8, Westinghouse/ Combustion Engineering: Note 12 to the proposed change to Table 4-3 refers to “atypical or aggressive degradation” necessitates a shorter interval for subsequent examination of baffle-former bolts. Staff believes this refers to the thresholds of three percent and five percent of bolts with indications or clustering as defined in the interim guidance letter. However, this is not explicitly defined in the note.
- RAI 9: Discuss why the response does not suggest the columns to be examined in the 25% sample be evenly distributed throughout the lower support structure, similar to the deep beam weld locations in the response to RAI 10.
- RAI 17, B&W: The response clarified that degradation is only needed in one of the primary components to trigger the expansion. However, the NRC staff is concerned that the language in the TR is still ambiguous.
- RAI 19, Westinghouse: The response indicated the TR would reference the latest version of WCAP-17451-P, which is being revised to reflect the recent operating experience with accelerated wear in certain plants. However, staff cannot accept for use MRP-227, Revision 1 for managing aging of the guide cards in these plants based on a WCAP that has not been accepted for use.
- RAI 21, B&W: Expansion criteria for baffle-to-former bolts eliminated the criterion related to clustering. The NRC staff is uncomfortable with this.

Additional Request for Additional Information

In response to RAI 9, Item d, the Electric Power Research Institute stated that should degradation be observed in the initial inspection population, the examination would expand to include the remainder of the population of the column bodies that are visible through the lower core plate. The response did not indicate the timing for this additional coverage.

In addition, Note 3 of the markup to Tables 4-5 and 4-6 states that:

Enclosure

“The stated minimum coverage requirement is the minimum if no significant indications are found. However, the Examination Acceptance criteria in Section 5 require that additional coverage must be achieved in the same outage if significant flaws are found. This contingency needs to be considered for inspection planning purposes.”

However, the criteria in Section 5 do not seem to contain this guidance.

The NRC staff therefore requests the following information:

- a) What is the required timing for the expansion examination of the remainder of the population of column bodies?
- b) What level of degradation is required to trigger this expansion?
- c) Please provide a revised markup of Tables 4-2, 4-3, 5-2, and 5-3, as appropriate to reflect the response to Items a. and b.