

Materials Information Exchange Meeting

Rockville, MD

May 24, 2017

Update on NRC Review of MRP-227, Revision 1



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Review Status

- 27 RAI's
- A draft version of the RAI's was provided to EPRI on March 20, 2017
- Formal transmittal of RAI's to MRP week of May 15, 2017
- EPRI indicated responses would be sent by September 27, 2017
- Final safety evaluation expected 3Q 2018.

Most Significant RAI Topics

- Core barrel/core support barrel weld reduced examination coverage in Westinghouse and CE design RVI.
- Baffle-former bolt changes in response to operating experience
- Guide card changes
- Other reductions in examination coverage
- Use of VT-3 to examine non-redundant components
- Use of examination OE to refine examination coverage
- Definition of “adjacent base metal” for welds

Core Barrel/Core Support Barrel Weld Coverage (RAI 5)

- Minimum coverage reduced from 75% to 25% of weld length for Westinghouse core barrel and CE core support barrel (CSB)
- RAI asks for:
 - More justification that the reduced coverage would be sufficient to provide high probability of detection of structurally significant cracking
 - How it can be assured that the 25% sample of the weld comprises the portion of the weld most likely to experience cracking.

Baffle-Former Bolt Response to Operating Experience (RAI 8)

- RAI asks:
 - Whether revised guidance for baffle-former bolt examination be incorporated into the final MRP-227, Rev. 1?
 - Whether guidance for subsequent examination needs to be revised
 - WCAP-17096-NP-A allows 10-yr interval provided $< 50\%$ of initial margin consumed
 - No guidance if $>50\%$ of margin degraded
- Latest EPRI interim guidance letter (MRP 2017-009) addresses some of these issues.

Guide Cards (RAI 19)

- Westinghouse submitted a 10 CFR Part 21 notification due to four reactors having higher guide card wear than predicted with WCAP-17451-P methodology
- Westinghouse also issued an NSAL on this topic in January 2017
- RAI asks how the results of this evaluation will be incorporated into MRP-227, Rev. 1

Other Reductions in Exam Coverage

- CE lower core support columns and Westinghouse lower support columns
 - Coverage reduced to 25%
 - VT-3 replaces EVT-1
 - Justification needed
- CE lower support structure – deep beams
 - Coverage reduced to 25%
 - High consequence of failure
 - Justification needed
- CE core shroud assembly, C3.1 remaining axial welds, C3.2 ribs and rings, coverage reduced compared to equivalent MRP-227-A items

Other Reductions in Exam Coverage

- Westinghouse upper core plate and lower core support forging (RAI 14)
 - non-redundant Expansion components, method changed from EVT-1 to VT-3
 - Coverage reduced to 25%
 - Justification needed

Use of Examination OE to Refine Coverage Requirements (RAI 15)

- RAI asks:
 - If examination coverage requirements were revised to incorporate OE from initial MRP-227-A examinations? Justify if not.
 - If any components were reclassified as inaccessible based on examination OE?
 - Identify components
 - Describe alternate measures taken (analysis, etc.)

B&W Components

- Changes in wording regarding initial examination schedule for some Primary components (RAI 1)
 - Changed from “during the next 10-year ISI” to “during the next 10-year ISI interval.”
 - Unclear, does that mean if a plant is in the 4th interval now examination not required until the 5th interval, or does it mean examination must be completed at the next scheduled 10-year ISI?
- Similarly, for baffle-to-former bolts (RAI 4), changed from
 - “no later than two refueling outages from the beginning of the license renewal period” to “volumetric (UT) examination during the next 10-year ISI interval.”
 - Not clear when the next 10-year ISI interval starts, could result in the baseline examination being significantly later.
 - Assumption that all B&W units have already completed baseline?
- RAI’s ask for clarification/and or justification of schedule being pushed out

Definition of Adjacent Base Metal

- Revised examination coverage for numerous CE and Westinghouse welds now refers to the weld plus adjacent base metal. RAI 20 asks for definition of “adjacent base metal.”