

May 20, 2004

NRC 2004-0056
10 CFR 50.55a(a)(3)(i)
10 CFR 50.55a(g)(5)(iii)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Point Beach Nuclear Plant, Unit 1
Docket 50-266
License No. DPR-24
Supplement 2 to Reactor Vessel Closure Head Penetration Repair and Flaw
Characterization Relief Requests MR 02-018-1, Revision 1 and MR 02-018-2,
Revision 1

- References: (1) Letter from NMC to NRC dated May 13, 2004 (NRC 2004-0051)
(2) NRC Safety Evaluation dated September 10, 2003
(3) NRC Safety Evaluation dated September 24, 2003
(4) Letter from NMC to NRC dated May 15, 2004 (NRC 2004-0053)

In reference 1, Nuclear Management Company, LLC (NMC), licensee for Point Beach Nuclear Plant (PBNP), requested revision to the relief, granted in references 2 and 3, pertaining to reactor vessel closure head (RVCH) penetration repair and flaw characterization. Reference 4 provided supplemental information in support of the requested relief.

During a conference call between NRC staff and NMC personnel on May 18, 2004, the staff requested additional information in support of their review of References 1 and 4. The requested information regarded NMC's justification for not grinding the weld overlap on the Unit 1 Nozzle 26 repair and also regarded examination requirements following removal of temporary weld attachments on Nozzle 26. Enclosure 1 to this letter provides the additional information requested by the staff.

Additionally, the staff requested a copy of, "Minutes of EPRI-MRP PWSCC Crack Growth Expert Panel Meeting, October 3, 2003 – Gaithersburg, Maryland." As the requested document contains information proprietary to Electric Power Research Institute, Materials Reliability Program (EPRI-MRP), NMC must procure a redacted version of the document and an associated affidavit from EPRI-MRP, which sets forth the basis on which the proprietary information may be withheld from public disclosure by the Commission. NMC is pursuing expedited preparation of these documents and will submit them upon receipt.

This submittal contains one new commitment. NMC will submit proprietary and non-proprietary versions of, "Minutes of EPRI-MRP PWSCC Crack Growth Expert Panel Meeting, October 3, 2003 – Gaithersburg, Maryland," to the NRC, upon receipt of these documents, and the associated affidavit, from EPRI-MRP.



Gary D. Van Middlesworth
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosures: 1 - Response to Request for Additional Information

cc: Project Manager, Point Beach Nuclear Plant, USNRC
Regional Administrator, Region III, USNRC
NRC Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE I

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION SUPPLEMENT 2 TO REACTOR VESSEL CLOSURE HEAD PENETRATION REPAIR AND FLAW CHARACTERIZATION RELIEF REQUESTS MR 02-018-1, REVISION 1 AND MR 02-018-2, REVISION 1

POINT BEACH NUCLEAR PLANT, UNIT 1

REQUEST FOR ADDITIONAL INFORMATION

During a conference call between NRC staff and NMC personnel on May 18, 2004, the staff requested additional information in support of their review of References 1 and 4. The requested information regarded NMC's justification for not grinding the weld overlap on the Unit 1 Nozzle 26 repair and also regarded examination requirements following removal of temporary weld attachments on Nozzle 26.

NOZZLE 26 WELD OVERLAP REMOVAL

Repairs were performed on Nozzle 26 such that portions of the new pressure boundary weld overlap onto portions of the remnant J-groove weld. NMC determined that the weld overlap was structurally acceptable. As a contingency, NMC had prepared an alternate repair design that included separation of the weld overlap via grinding.

The effort to grind away the overlap on Nozzle 26 by removing the new weld material from the remnant J-groove weld, would be significant. The grinding process would also decrease the structural strength of the nozzle attachment weld. The most significant concern was the high radiation dose that would be incurred during this activity. The dose estimates for this grinding process are outlined below.

The total dose estimate associated with the grinding evolution would be approximately 15 Rem. Detailed evolution steps are listed below.

- Set up ladders and support equipment
- Install template
- Layout the grind location
- Inspect
- Grind, etch & measure – estimated 12 people to grind; requires numerous entries under head with detailed information turnovers to ensure consistent grinding quality
- Quality Control measurement
- Swab nozzle to clean
- Clean the nozzle's ground area for liquid penetrant test (PT)
- PT the ground area – 4 entries under head minimum

Removal of the weld overlap via grinding would present an undue hardship due to the high radiation doses to personnel that would be incurred during such an activity. Welding on the nozzle was performed using a precision machine welder, resulting in a high quality weld. Grinding the weld would need to be performed manually, by multiple technicians (to limit individual dose). Because the weld overlap was determined to be structurally acceptable, separating the weld overlap via grinding would not produce a compensating increase in the level of quality or safety of the nozzle's structural integrity. To verify a flaw-free surface for weld application, the machined ID surface of the original J-groove weld in the area that the new Alloy 52 weld overlaps was inspected by PT and ultrasonic testing (UT) prior to welding. These inspections detected no flaws or indications on the surface or in the volume of the J-groove weld.

EVALUATION OF TEMPORARY WELD ATTACHMENT REMOVAL – NOZZLE 26

The NRC staff requested information regarding the Nozzle 26 J-groove weld, where temporary weld attachments (i.e., tack welds) were removed, as this pertains to the examination requirements of ASME Section III.

The requirements of ASME Section III – 1989 NB-4435 apply to the removal of temporary nonstructural attachments to the pressure retaining portion of a Class 1 component. It is the intent of this requirement to ensure that there are no flaws that remain in the Class 1 pressure boundary following installation and removal of the temporary attachment welds.

The remaining portion of the original J-groove weld is no longer credited as part of the pressure retaining portion of the reactor vessel head; therefore, it is no longer subject to ASME Section III requirements. Consequently, the requirements of ASME Section III – 1989 NB-4435 do not apply to the removal of the tack weld on Nozzle 26. Although the weld is physically attached to the pressure retaining portion, the weld does not perform a pressure retaining function.

Following the repair, the pressure boundary weld becomes the new Alloy 52 partial penetration weld. The remaining portion of the original J-groove weld is assumed, in the ASME Section XI flaw analysis, to contain a crack equal to the depth of the weld. This weld, with a crack assumed to extend from the weld surface to the low alloy steel (or to the new Alloy 52 weld in the case of an overlap), is assumed to no longer comply with Section III. This would apply equally to the situation where the new weld overlaps the original weld, since the subject tack weld will not be in the overlapped region of the J-groove weld. Since the J-groove weld is no longer considered a pressure retaining portion of the component, the requirements of NB-4435 are not applicable.

To perform a PT on the J-groove weld remnant would serve no purpose in this situation. If a PT examination were to be performed, flaw acceptance criteria would need to be developed. The acceptance criteria for the J-groove weld would be that any flaw found, within the criteria shown above, would be acceptable. It would not be appropriate to apply ASME Section III acceptance criteria since the J-groove weld no longer meets

ASME Section III requirements. The information gained from performing the PT examination is deemed to be of no value and would not justify the personnel exposure associated with surface preparation and performing the PT. Therefore, there is no benefit to performing the examination, and it is not appropriate to increase the personnel dose to perform such an exam.

In conclusion, a PT examination on the J-groove weld remnant is neither required nor necessary. Therefore, PT examinations will not be performed on the locations of the original J-groove weld where temporary tack welds were removed.