NMC
Committed to Nuclear Excellence

Point Beach Nuclear Plant
Operated by Nuclear Management Company, LLC

NRC 2003-0034

10 CFR 50.55a(g)(5)(iii)
10 CFR 50.55a(a)(3)(i)

April 10, 2003

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

DOCKET 50-301
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2
REACTOR VESSEL CLOSURE HEAD PENETRATION REPAIR
RELIEF REQUESTS MR 03-018-1 AND MR 02-018-2
SUPPLEMENT 1 AND RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

On August 28, 2002, Nuclear Management Company, LLC (NMC) submitted Relief Requests MR 02-018-1 and MR 02-018-2 for PBNP Unit 1 (TAC Nos. MB6184 and MB6185) The requested relief may become necessary in the event that flaws requiring repair in reactor vessel closure head (RVCH) penetrations are discovered during upcoming inspections, in accordance with our response to NRC Bulletin 2002-02, "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle Inspection Programs".

During a conference call between NMC representatives and NRC staff on September 25, 2002, NRC staff requested additional information regarding certain aspects of that submittal. Attachment 1 to this letter contains the NMC response to the staff's questions. The information provided is applicable to both PBNP Unit1 and Unit 2.

Enclosed with this letter are copies of the following calculation packages, which were also requested by NRC staff during the September 25, 2002 conference call:

Calculation package 32-5019398-00, "PB-1 CRDM Nozzle IDTB Weld Anomaly Flaw Evaluations", dated September 19, 2002 (Proprietary);

Calculation package 32-5019398-01, "PB-1 CRDM Nozzle IDTB Weld Anomaly Flaw Evaluations", dated February 28, 2003 (Non-Proprietary);

Calculation package 32-5019396-00, "PB-1 CRDM Nozzle IDTB J-Groove Weld Flaw Evaluation", dated September 25, 2002 (Proprietary),

Calculation package 32-5019396-01, "PB-1 CRDM Nozzle IDTB J-Groove Weld Flaw Evaluation", dated February 28, 2003 (Non-Proprietary);

Calculation package 32-5020244-00, "Point Beach 1 CRDM Temperbead Bore Weld Analysis", dated September 17, 2002 (Proprietary); and,

Calculation package 32-5020244-01, "Point Beach 1 CRDM Temperbead Bore Weld Analysis", dated February 28, 2003 (Non-Proprietary)

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6590 Nuclear Road • Two Rivers, Wisconsin 54241
Telephone: 920 755 2321

Also included in the enclosures to this letter is a Framatome ANP, LLC ("FRA-ANP") proprietary authorization affidavit.

As Calculation Packages 32-5019398-00, 32-5019396-00, and 32-5020244-00 contain information proprietary to FRA-ANP, they are supported by an affidavit signed by FRA-ANP, the owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR 2.790 of the Commission's regulations.

Accordingly, it is respectfully requested that the information, which is proprietary to FRA-ANP, be withheld from public disclosure in accordance with 10 CFR 2.790. Correspondence regarding the proprietary aspects of the items listed above, or the supporting FRA-ANP Affidavit, should reference the affidavit and be addressed to J. F. Mallay, Director Regulatory Affairs, Framatome ANP Inc., 3315 Old Forest Road, P.O. Box 10935, Lynchburg, Virginia 24506-0935.

The information regarding the basis and justification for the relief request contained in the August 28, 2002 submittal, although originally submitted for PBNP Unit 1 only, is applicable to both PBNP units. Any and all references to PBNP Unit 1 in the original submittal (with the exception of information regarding refueling outage dates) may be interchanged with a reference to PBNP Unit 2. Therefore, NMC requests that the relief requested in that submittal be approved for both units.

The PBNP Unit 2 fall 2003 refueling outage is scheduled to start on October 4, 2003. The subject examinations are currently planned on or near October 9, 2003. In light of the upcoming refueling outage, NMC requests NRC review and approval of these relief requests, for both units, by October 9, 2003. If necessary, NMC personnel will be available to meet with your staff to discuss any concerns you may have.

Any statements of intent made in this submittal are provided for information purposes and are not considered to be regulatory commitments.

Sincerely,

A. J. Cayia
Site Vice President

LAS/kmd

Attachment 1 – Response to Request for Additional Information

cc: (with enclosures)
NRC Project Manager

cc: (w/o enclosures)
NRC Regional Administrator
NRC Resident Inspector
PSCW

bcc: (w/o enclosures)

A. J. Cayia
R. Chapman
J. Gadzala
M. Holzmann
R. D. Scott
File

G. P. Arent
K. M. Duescher (3)
R. R. Grigg (P460)
M. E. Reddemann
D. A. Weaver (P346)

E. J. Weinkam III
J. Freels
B. D. Kemp
L. Schofield (JOSRC)
C. A. Tomes

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION

The following information is provided in response to the Nuclear Regulatory Commission staff's request for additional information (RAI) on NMC's August 28, 2002 Relief Request submittal, as discussed during a telephone conference between NRC and NMC staff on September 25, 2002. The staff's questions were germane to both PBNP units.

The NRC staff's questions are restated below, with the NMC response following. The NMC response is based on the attached calculations provided by Framatome ANP ("Framatome") and applies to both PBNP units.

RELIEF REQUEST MR 02-018-1, Alternate Repair Technique – Reactor Vessel Closure Head Penetrations

NRC Question 1:

Page 8, Item k [in Attachment 1 of the Reference] states the UT acceptance criteria is NB-5330. Page 11, paragraph one, states: "Ultrasonic examination acceptance criteria will be in accordance with NB-5350."

NMC Response:

Page 11, paragraph 1, in Attachment 1 of the Reference, contained a typographical error. The statement "NB-5350" should read "NB-5330".

NRC Question 2:

Page 13, paragraph m [in Attachment 1 of the Reference] states that a fracture mechanics analysis will be performed as the basis for acceptance of the triple point anomaly (TPA). Please send a copy of the analysis.

NMC Response:

Calculation package 32-5019398-00 (enclosed) contains this analysis.

NRC Question 3:

CRDM Nozzle ID Temper Bead Weld Repair Process Qualification, BAW-2409P, dated September 2001, Figure 6 shows a photo macrograph of a TPA. The photo macrograph suggests the presence of either cracking or incomplete fusion in the TPA.

If a triple point anomaly indication UT response exceeds 20% of the reference level, will the licensee characterize the indication?

NMC Response:

Yes. A triple point anomaly indication that exceeds 20% of the reference level would be characterized via UT inspection.

NRC Question 4:

Taking question 3 into consideration, if the TPA response exceeds the 0.100" postulated flaw FMA discussed on page 13, paragraph m [in Attachment 1 of the Reference], discuss what action will be taken.

NMC Response:

If a triple point anomaly indication exceeds 0.100", a specific flaw evaluation would be performed per ASME Section XI using the methodology described in the existing calculations that are being used to support this repair process. The ASME Section III stress analyses would also be reexamined.

NRC Question 5:

Taking question 3 into consideration, discuss successive inspections on TPA that are analyzed as acceptable for continued service.

NMC Response:

Once a TPA is analyzed as acceptable for continued service, no supplemental inspections are planned for the sole purpose of monitoring that TPA. However, NMC may perform examination of this region should underhead examinations of other CRDM nozzles be performed to fulfill ASME Code requirements, commitments made in response to NRC Bulletins, or other supplemental inspections requirements.

RELIEF REQUEST MR 02-018-2, Characterization of Remaining Flaws – Reactor Vessel Closure Head Penetration Repair

NRC Question 1:

Page 2, paragraphs 1 and 3 [in Attachment 2 of the Reference] discuss the results of the fatigue crack growth analysis on a conservative worst-case flaw assumed to exist as the basis for acceptability. Please provide the analysis.

NMC Response:

Calculation package 32-5019396-00 (enclosed) contains this analysis.

NRC Question 2:

Please provide a summary of the results of the analysis of the new pressure boundary welds that you used under the three-dimensional model ANSYS mentioned on page 3, bottom paragraph [in Attachment 2 of the Reference].

NMC Response:

Calculation package 32-5020244-00 (enclosed) summarizes the results of the structural analysis.

NRC Question 3:

Page 4, first paragraph [in Attachment 2 of the Reference] discusses an analytical model analyzed for thermal transient condition as part of the basis for relief. Has this been completed? If it has been completed, please send a summary of the results.

NMC Response:

This analysis has been completed. Calculation package 32-5020244-00 (enclosed) summarizes the results of the thermal analysis.

NRC Question 4:

Same question for primary stress analysis for design conditions mentioned on page 4 [in Attachment 2 of the Reference].

NMC Response:

Calculation package 32-5020244-00 (enclosed) summarizes the results of the primary stress analysis.

NRC Question 5:

Same question for maximum cumulative fatigue usage factor mention on page 4 [in Attachment 2 of the Reference].

NMC Response:

Calculation package 32-5020244-00 (enclosed) summarizes the results of the fatigue analysis.

NRC Question 6:

Same question for postulated radial corner crack on the uphill side of the RVCH penetration mentioned on page 5 [in Attachment 2 of the Reference].

NMC Response:

Calculation package 32-5019396-00 (enclosed) describes this analysis.

NRC Question 7:

On page 5 [in Attachment 2 of the Reference], the licensee states: "The evaluations discussed above provide an acceptable level of quality and safety without performing flaw characterization as required in 1998 Edition of ASME Section XI, with all addenda through 2000, IWA-3300 (b), IWB-3142.4 and IWB-3420." Please provide the evaluations.

NMC Response:

Calculation package 32-5019396-00 (enclosed) describes the flaw evaluation.

NRC Question 8:

Discuss actions that will be taken regarding IWB-2420 successive inspections on repair welds that weld over remnant J-groove welds due to the curvature of the head.

NMC Response:

Once analyzed as acceptable for continued service, no supplemental inspections are planned for the sole purpose of monitoring repair welds that weld over remnant J-groove welds due to the curvature of the head. However, NMC may perform examination of this region should underhead examinations of other CRDM nozzles be performed to fulfill ASME Code requirements, commitments made in response to NRC Bulletins, or other supplemental inspections requirements.

Penetration number 1 (both units) is located in the center of the reactor vessel head (where curvature of the head is not a factor). This penetration would not have weld over remnant J-groove welds should repairs be performed in this region.

NRC Question 9:

Discuss the impact on a postulated flaw that was welded over in the J-groove weld with respect to residual stresses, cumulative fatigue usage factor. This is mentioned on page 4 (NMC Relief Request, Attachment 2), first paragraph, but doesn't say what size the postulated flaw is. Could you be more specific?

NMC Response:

The flaw mentioned on page 4 is the postulated flaw that is analyzed in calculation package 32-5019396-00 for fatigue crack growth (enclosed). Residual stresses in the J-groove weld following the repair are discussed in that document. A cumulative usage factor is not calculated for flawed components. Rather, an ASME Section XI flaw evaluation would be performed to compare a calculated stress intensity factor at the final flaw size to the required fracture toughness.

AFFIDAVIT

COMMONWEALTH OF VIRGINIA)
) ss.
CITY OF LYNCHBURG)

1. My name is James F. Mallay. I am Director, Regulatory Affairs, for Framatome ANP ("FRA-ANP"), and as such I am authorized to execute this Affidavit.

2. I am familiar with the criteria applied by FRA-ANP to determine whether certain FRA-ANP information is proprietary. I am familiar with the policies established by FRA-ANP to ensure the proper application of these criteria.

3. I am familiar with the FRA-ANP information contained in a series of calculation packages that are listed in the attachment to this affidavit and are being provided to the NRC by the Nuclear Management Company concerning a relief request on Point Beach Unit 1. These calculation packages are referred to herein as "Documents." Information contained in these Documents has been classified by FRA-ANP as proprietary in accordance with the policies established by FRA-ANP for the control and protection of proprietary and confidential information.

4. These Documents contain information of a proprietary and confidential nature and is of the type customarily held in confidence by FRA-ANP and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in these Documents as proprietary and confidential.

5. These Documents have been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in these Documents be withheld from public disclosure.

6. The following criteria are customarily applied by FRA-ANP to determine whether information should be classified as proprietary:

(a) The information reveals details of FRA-ANP's research and development plans and programs or their results.

(b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.

(c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for FRA-ANP.

(d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for FRA-ANP in product optimization or marketability.

(e) The information is vital to a competitive advantage held by FRA-ANP, would be helpful to competitors to FRA-ANP, and would likely cause substantial harm to the competitive position of FRA-ANP.

7. In accordance with FRA-ANP's policies governing the protection and control of information, proprietary information contained in these Documents has been made available, on a limited basis, to others outside FRA-ANP only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. FRA-ANP policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

SUBSCRIBED before me this 30th day of September, 2002.

Ella F. Carr-Payne
NOTARY PUBLIC, STATE OF VIRGINIA
MY COMMISSION EXPIRES: 8/31/05

ELLA F. CARR-PAYNE
Notary Public
Commonwealth of Virginia
My Commission Exps. Aug. 31, 2005

List of Calculation Packages
Affidavit dated September 30, 2002
Concerning Relief Request on Point Beach, Unit 1

Calculation package 32-5019398-00

Calculation package 32-5019396-00

Calculation package 32-5020244-00

ENCLOSURES

to

NRC 2003-0034

Calculation package 32-5019398-00, "PB-1 CRDM
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(Proprietary);

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Framatome ANP proprietary authorization AFFIDAVIT