UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 23, 2009

Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 - REQUEST FOR ADDITIONAL INFORMATION REGARDING RELIEF REQUEST RR-3-48 (TAC NO. ME0414)

Dear Sir or Madam:

On January 22, 2009, Agencywide Documents Access and Management System Accession No. ML090420062, Entergy Nuclear Operations, Inc. (Entergy), submitted an application for a proposed relief from the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Code Case N-722, for Indian Point Nuclear Generating Unit No. 3 (IP3). This relief would permit an alternative examination technique for reactor pressure vessel bottom-mounted instrument penetrations.

The Nuclear Regulatory Commission staff is reviewing the submittal and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information. In order to expedite the processing of this request, please provide a response to the RAI within 14 days of the date of this letter.

Please contact me at (301) 415-2901 if you have any questions on this issue.

Sincerely,

John P. Boska

John P. Boska, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosure:
RAI

cc w/encl: Distribution via ListServ

REQUEST FOR ADDITIONAL INFORMATION

REGARDING RELIEF REQUEST RR-3-48

ENTERGY NUCLEAR OPERATIONS, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

DOCKET NO. 50-286

In a letter dated January 22, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090420062), Entergy Nuclear Operations, Inc. (Entergy), submitted an application for a proposed relief request for Indian Point Nuclear Generating Unit No. 3 which would permit an alternative examination technique for reactor pressure vessel bottom-mounted instrument penetrations from that specified in the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Code Case N-722. The Nuclear Regulatory Commission staff is reviewing the submittal and has the following questions:

A. The following questions relate to the Electric Power Research Institute's Technical Report MRP-166, "Demonstration of Equipment and Procedures for the Inspection of Alloy 600 Bottom Mounted Instrumentation (BMI) Head Penetrations," dated March 2006.

1. What are the critical flaw locations and orientations? How have these critical flaws been incorporated in the demonstration?

2. Relief Request 3-48 indicates that the "proposed alternative of performing automated ultrasonic examinations ... from the inside surface using procedures, personnel, and equipment that have been demonstrated and qualified in accordance with MRP-166 ... as supplemented by technical justification WDI TJ 1014 ..." MRP-166 is a capability demonstration for equipment and procedures, not a qualification report on BMI examinations. In light of this, please clarify your use of MRP-166 in RR-3-48.

3. For the Westinghouse 3 and 4 loop design:
   (a) Please characterize the flaw population distribution for the mockups (i.e., range of flaw length and depth, orientation, and types).
   (b) What types of implants were used to generate flaws?
   (c) Do the mockups include lack of fusion at the weld/tube interface?

4. What is the tolerance for false calls?

5. Has acceptance criteria been developed? Has criteria for determining the need for corrective action (i.e., repair) been developed? Please provide more information, including the criteria that will be used to determine what is a recordable indication.

6. What are the criteria for addressing sizing error in any flaw evaluation?

7. In general, is there any particular flaw type/orientation/size/location that may be missed? More specifically, time-of-flight diffraction (TOFD) ultrasonic examination (UT) has a known limitation for near surface inspection in that the presence of the lateral wave may

obscure the detection of small flaws near the scan surface. Is this a concern for these inspections? Why or why not?

8. MRP-166 notes that the vendor's procedure will identify responsibilities and qualification requirements for personnel carrying out several functions including documenting minimum personnel training requirements and qualifications for acquisition and analysis. In light of the fact that a high degree of operator skill is required to correctly interpret TOFD UT inspection results, what are the training and qualification requirements for personnel who perform the TOFD UT data acquisition and analysis? Where is this documented?

9. MRP-166 is dated March 2006; however, most of the information it contains dates back to 2004. Is the same equipment being used today as that used in 2004? If not, what has been done since 2004? Has this equipment been demonstrated on mockups?

10. The equipment from two vendors were evaluated in MRP-166. The regression analyses presented in MRP-166 seem to indicate that the Vendor A system significantly out-performed the Vendor B system for length and depth measurements for the Westinghouse 3- and 4-Loop Design. Why is that? Can the Vendor B system today perform as well as the Vendor A system?

11. What is the implication of the Vendor B system's significant undersizing of length and depth measurements as shown in the regression analyses in MRP-166?

12. MRP-166 notes in Attachment 1 that it is possible that inspection vendors will be provided confidential information on the flaw characteristics of a limited set of flaws contained in the mockups in cases where vendor weaknesses were identified. Per this statement, confirm whether the examinations used to demonstrate this technique were conducted only on the blind mockups.

13. Per the introduction section of MRP-166, it is noted that both Vendor A and Vendor B are still developing eddy current (ET) equipment for inspecting the wetted surface of the attachment weld. Additionally, there is little information in MRP-166 reporting on the ET portion of the examination. Please clarify what criteria were or are being used to qualify the ET examination technique? Please elaborate on the results, limitations, status, etc. of the ET examinations. Do the regression analyses include results obtained via ET examination?

14. In Section 3.1 of MRP-166, the discussion of the Vendor B demonstration, a statement is made that the J-groove ET exam had an issue with being unable to examine the entire area of interest. Has this been addressed? What is the status of Vendor B's upgrade of their examination tool? Please address whether a new tool has been successfully demonstrated?

15. The NRC staff has accepted the qualification/demonstration of similar techniques for the inspection of control rod drive mechanism penetrations in the initial licensee responses to NRC Order EA-03-009. Provide a detailed comparison of the demonstration for the lower head penetrations with the demonstration industry used to justify the UT and ET techniques for the CRDM inspections. Please provide the protocol or criteria used to qualify the UT/ET for the BMI inspections and how it compares to the protocol or criteria

used for CRDMs. Please provide the MRP-89 report on the demonstration program for CRDM inspections.

B. The following questions relate to WesDyne's Technical Report WDI-TJ-1014, Revision 2, "BMI Examination of Indian Point Penetrations," dated April 18, 2006.

1. Though an eddy current probe is shown in the figure associated with Table 1 for the Westinghouse 3/4 Loop Probe, there is no descriptive information provided for this probe. Please provide this information along with a description of the flaws that this probe is sensitive to and how this was demonstrated.

2. On page 13 of 17, a statement is made that "WesDyne has satisfactorily demonstrated techniques..." To what criteria were the WesDyne demonstrations evaluated against (i.e., what determines a "satisfactory" demonstration)?

3. The WesDyne Report presents 3 examples of calibration scans using the Westinghouse 3/4 loop standard with only labels provided as explanations (and these labels are not clear as to what they are referring to). Please provide a more detailed description of what the scans are showing with each feature of the TOFD scan clearly labeled. Additionally, please provide examples of TOFD scans from the mockup flaws with the features of the scans clearly labeled.

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