

May 2, 2001

Mr. Mark Reddemann
Site Vice President
Kewaunee and Point Beach Nuclear Plants
Nuclear Management Company, LLC
6610 Nuclear Road
Two Rivers, WI 54241

SUBJECT: SAFETY EVALUATION FOR PROPOSED ALTERNATIVE TO ASME CODE,
SECTION XI, CONTAINMENT INSPECTION PROGRAM FOR THE POINT
BEACH NUCLEAR PLANT, UNITS 1 AND 2 (TAC NOS. MB1681 AND MB1682)

Dear Mr. Reddemann:

By letter dated April 10, 2001, Nuclear Management Company, LLC (NMC or the licensee), submitted Relief Request LRR-2 for the Containment Inspection Program at Point Beach Nuclear Plant, Units 1 and 2.

By Relief Request LLR-2, the licensee proposed to perform an alternative examination against the requirements of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code*, Section XI, 1992 edition through 1992 addenda of Subsection IWL pursuant to section 50.55a of Part 50 to Title 10 of the *Code of Federal Regulations* (10 CFR 50.55a).

The Nuclear Regulatory Commission (NRC) staff has reviewed the alternative proposed in Relief Request LLR-2. The alternative to the Code requirements proposed in LRR-2 will provide reasonable assurance of containment integrity. Pursuant to 10 CFR 50.55a(a)(3)(ii), the proposed alternative is authorized for the first 10-year interval of the Containment Inservice Inspection Program on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The NRC staff's safety evaluation (SE) is enclosed. If you have any questions regarding this issue or SE, please contact Beth Wetzel, the Senior Project Manager, at 301-415-1355.

Sincerely,

/RA/

Claudia M. Craig, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

Enclosure: Safety Evaluation

cc w/encl: See next page

Point Beach Nuclear Plant, Units 1 and 2

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October 2000

May 2, 2001

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Nuclear Management Company, LLC
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**Previously concurred

*Provided SE input by memo

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DATE	5/1/01	5/1/01	4/19/01	4/30/01	5/2/01

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO CONTAINMENT INSERVICE INSPECTION PROGRAM

NUCLEAR MANAGEMENT COMPANY, LLC

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-266 AND 50-301

1.0 INTRODUCTION

By letter dated April 10, 2001, Nuclear Management Company, LLC (the licensee), proposed an alternative to the requirements of Table IWL-2500-1 Examination Category L-A for the Point Beach Nuclear Plant (PBNP), Units 1 and 2. The NRC's evaluation with respect to authorizing the alternative or denying the proposed relief request is given below.

In the *Federal Register* dated September 22, 1999, the Commission amended the regulations at 10 CFR 50.55a to incorporate, by reference, Section XI of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (the Code), 1995 edition through 1996 addenda of Subsections IWE and IWL. Subsection IWE provides the requirements for inservice inspection (ISI) of Class MC (metallic containment components) and the metallic liner of Class CC (concrete containment components). Subsection IWL provides the requirements for ISI of Class CC components.

The regulations require that ISI of Code Class MC and CC components be performed in accordance with Section XI of the ASME Code and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (g)(6)(i) of 10 CFR 50.55a. In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for its facility.

2.0 RELIEF REQUEST LRR-2

The licensee requested relief from the concrete surface examination requirements of IWL-2510(a). For the accessible concrete surfaces of containment, the licensee proposes to perform the examination required by the Code. For the inaccessible concrete surfaces, the licensee proposes to perform a general visual examination instead of the Code-required VT-3C examination.

ENCLOSURE

2.1 Licensee's Basis for Requesting Relief

The licensee states:

The conventional method of accomplishing a VT-3C examination on all concrete surface areas, including coated areas, with the exception of those exempted is by the use of remote visual magnification aids such as binoculars or a spotting scope. This method of accomplishing a VT-3C examination on all required concrete and coated areas is not possible at PBNP because both the Unit 1 and Unit 2 containment vessels are totally enclosed within a permanent facade structure.

The facade structure prevents remote magnification inspections that many facilities are using to examine concrete areas that are inaccessible due to lack of walkways, platforms, etc. Performing a VT-3C examination of inaccessible concrete areas between the buttresses would require suspending examination personnel over the side of the containment structure or by utilizing remote inspection cameras suspended over the side of the containment.

Suspending personnel over the side of the containment structure exposes personnel to unnecessary safety hazards without providing a compensating benefit. Performing a remote inspection utilizing an imaging system is not practical from a cost-benefit perspective. In addition, the facade structure prevents exposure of the containment concrete surfaces to environmental degradation effects of wind, rain, snow, etc.

It is more beneficial to focus the examination of concrete surfaces to the areas of high stress where degradation is most expected occur. These areas include tendon end anchorage areas, containment hatches and penetrations. Penetration and containment hatch areas are accessible and will be VT-3C inspected as proposed.

The tendon end anchorage areas will be inspected in accordance with Category L-B. Since inservice degradation is most likely to occur in areas of high stressed concrete, Category L-B exams will provide sufficient indication of inservice degradation. Should an indication be discovered by a Category L-B exam, IWL-3310 requires an evaluation of the extent, nature, and frequency of additional exams.

Category L-A requires exams of all areas of low stress concrete. Performing exams on all areas of low stress concrete does not provide a safety benefit commensurate with the level of effort and risk to personnel required to perform these exams. The proposed general visual examination on inaccessible areas does not result in a reduction of safety since there are no anticipated degradation mechanisms for these areas.

2.2 Alternative Examination

The licensee proposes:

Accessible concrete surface areas, including coated areas and areas subjected to strains and pressures (e.g., penetrations, hatch areas etc. except those exempted by IWL-1200(b)(1)), shall be VT-3C visual examined for evidence of conditions indicative of damage or degradation, such as defined in ACI 201.1 R-92, in accordance with

IWL-2310(b). Selected areas, such as those that indicate suspect conditions, shall receive a VT-1C examination in accordance with IWL-2310(a). Accessible areas shall be considered those areas where visual examinations can be performed from floors, roofs, platforms, walkways, ladders, ground surface, or other permanent vantage points.

Inaccessible concrete surface areas, including coated areas, except those exempted by IWL-1220(b), shall be examined by general visual examination with recording criteria as required by Regulatory Guide 1.35, Revision 3 and defined in ACI 201.1 R-92.

In addition to the above identified alternative examinations, PBNP shall perform a VT-1C examination on the tendon end anchorages under Category L-B, Item 2.30, as required by the provisions of IWL-2521.

2.3 Evaluation

Paragraph IWL-2510(a) of the Code requires that concrete surface and tendon end anchorage areas be VT-3C visually examined for evidence of damage or degradation such as defined in the American Concrete Institute (ACI) ACI 201.1 R-68, "Guide for Making a Condition Survey of Concrete in Service." For the accessible concrete surfaces of containment, the licensee proposes to perform the examination required by the Code. For the inaccessible concrete surfaces, excluding those areas exempt by IWL-1220, the licensee proposes to perform a general visual examination as an alternative to the Code-required VT-3C examination. The licensee also proposes to perform a VT-1C examination on the tendon end anchorage areas.

The containment design is such that the concrete containment vessels are enclosed within permanent facade structures. In some areas, such as between the buttresses, the facade prevents nondestructive examination (NDE) personnel from achieving the proper angle for performance of the VT-3C examinations. These areas are deemed inaccessible by the licensee. In order to perform the VT-3C examinations of these areas, NDE personnel would need to be suspended over the side of the containment structure. This would expose personnel to unnecessary safety hazards without providing a commensurate increase in safety.

For these inaccessible areas, the licensee proposes to perform a general visual examination with recording criteria as required by Regulatory Guide 1.35, Revision 3, and defined in ACI 201.1 R-92. Incorporation of these guidelines into the licensee's general visual examination procedures provides reasonable assurance that concrete deterioration and distress are identified. Therefore, performance of a general visual examination on the inaccessible areas will provide reasonable assurance of containment integrity.

3.0 CONCLUSION

The alternative to the Code requirements proposed in Relief Request LRR-2 will provide reasonable assurance of containment integrity. Pursuant to 10 CFR 50.55a(a)(3)(ii), the proposed alternative is authorized for the first 10-year interval of the Containment Inservice Inspection Program on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Principal Contributor: M. Kotzalas

Date: May 2, 2001