

October 8, 2002

Mr. Fred Cayia  
Acting Site Vice President  
Point Beach Nuclear Plant  
Nuclear Management Company, LLC  
6610 Nuclear Road  
Two Rivers, WI 54241

SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 - RELIEF REQUEST 6  
REGARDING EVALUATION OF LEAKAGE WITH BOLTING IN PLACE  
(TAC NOS. MB5409 AND MB5410)

Dear Mr. Cayia:

By letter dated March 22, 2002, the Nuclear Management Company, LLC (the licensee) submitted Relief Request 6 (RR-6) for the Point Beach Nuclear Plant (PBNP), Units 1 and 2.

In RR-6, which was submitted pursuant to 10 CFR 50.55a(a)(3)(i), the licensee proposes to use Code Case N-566-1, "Corrective Action for Leakage at Bolted Connections, Section XI, Division 1," as an alternative to the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code*, Section XI, Article IWA-5250(a)(2), as specified in the ASME Code, Section XI, 1998 edition with addenda through 2000, for bolted connections when leakage is detected.

The Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's proposed alternative and has concluded that the use of Code Case N-566-1 provides an acceptable level of quality and safety. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the fourth ISI interval at PBNP, Units 1 and 2 or until such time as the Code Case N-566-1 is published in a future revision of Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1."

Further details on the bases for the NRC staff's conclusions are contained in the enclosed safety evaluation. If you have any questions regarding this issue, please contact Deirdre W. Spaulding at (301) 415-2928.

Sincerely,

*/RA/*

L. Raghavan, 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

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ADAMS Accession No. ML022530023

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Point Beach Nuclear Plant, Units 1 and 2

cc:

Mr. John H. O'Neill, Jr.  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, NW  
Washington, DC 20037-1128

Mr. Richard R. Grigg  
President and Chief Operating Officer  
Wisconsin Electric Power Company  
231 West Michigan Street  
Milwaukee, WI 53201

Site Licensing Manager  
Point Beach Nuclear Plant  
Nuclear Management Company, LLC  
6610 Nuclear Road  
Two Rivers, WI 54241

Mr. Ken Duveneck  
Town Chairman  
Town of Two Creeks  
13017 State Highway 42  
Mishicot, WI 54228

Chairman  
Public Service Commission  
of Wisconsin  
P.O. Box 7854  
Madison, WI 53707-7854

Regional Administrator, Region III  
U.S. Nuclear Regulatory Commission  
801 Warrenville Road  
Lisle, IL 60532-4351

Resident Inspector's Office  
U.S. Nuclear Regulatory Commission  
6612 Nuclear Road  
Two Rivers, WI 54241

Ms. Sarah Jenkins  
Electric Division  
Public Service Commission of Wisconsin  
P.O. Box 7854  
Madison, WI 53707-7854

Mr. Roy A. Anderson  
Executive Vice President and  
Chief Nuclear Officer  
Nuclear Management Company, LLC  
700 First Street  
Hudson, WI 54016

Nuclear Asset Manager  
Wisconsin Electric Power Company  
231 West Michigan Street  
Milwaukee, WI 53201

March 2002

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE FOURTH INSERVICE INSPECTION INTERVAL

RELIEF REQUEST 6

NUCLEAR MANAGEMENT COMPANY, LLC

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-266 AND 50-301

1.0 INTRODUCTION

Inservice inspection (ISI) of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components is to be performed in accordance with the ASME *Boiler and Pressure Vessel Code* (the Code), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Article IWA-5242(a), and applicable addenda, as required by the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(6)(g)(i). The regulation at 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the Nuclear Regulatory Commission (NRC), if the licensee demonstrates that (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2 and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. For the Point Beach Nuclear Plant (PBNP), Units 1 and 2, the applicable edition of Section XI of the ASME Code for the fourth 10-year ISI interval is the 1998 edition with addenda through 2000.

By letter dated March 22, 2002, the Nuclear Management Company, LLC (the licensee), submitted a request for relief (Relief Request 6 (RR-6)) from certain ASME Code, Section XI, requirements for the ISI. The information provided by the licensee in support RR-6 has been evaluated by the NRC staff and the basis for its disposition is documented below.

ENCLOSURE

## 2.0 EVALUATION

### 2.1 RR-6 for PBNP, Units 1 and 2

Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee requested relief from the requirements of IWA-5250(a)(2) for bolted connections when leakage is detected as specified in the ASME Code, Section XI, 1998 edition with addenda through 2000.

### 2.2 Components for Which Relief is Requested

Class 1, 2, and 3 pressure-retaining bolted connections.

### 2.3 ASME Code Requirement from Which Relief is Requested

ASME Code, Section XI, 1998 edition with addenda through 2000, Article IWA-5250(a)(2) requires one of the bolts be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100 if leakage occurs at a bolted connection. IWA-5250(a)(2) requires the bolt that is closest to the source of leakage be selected for removal.

### 2.4 Content of the Relief Request

Relief is requested from performing a VT-3 visual examination and removing the bolt closest to the source of leakage when leakage is observed at a bolted connection during a system pressure test.

### 2.5 Basis for Requesting Relief and Justification for Granting Relief

The licensee states that other factors should be considered when evaluating bolting acceptability. When leakage has been identified at a mechanical joint, an evaluation should include (but not be limited to) joint bolting materials, service age of joint bolting materials, location of the leakage, history of leakage at the joint, evidence of corrosion with the joint assembled, and corrosiveness of process fluid.

### 2.6 Proposed Alternative Examination

The licensee proposes to use the alternative requirements of Code Case N-566-1, "Corrective Action for Leakage Identified at Bolted Connections, Section XI, Division 1."

### 2.7 NRC Staff Evaluation

ASME Code, Section XI, IWA-5250(a)(2), requires that if leakage occurs at a bolted connection, the bolting be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100. In lieu of this requirement, the licensee has proposed to use Code Case N-566-1 which requires that the leakage be stopped and the joint integrity be reviewed. If the leakage is not stopped, the joint shall be evaluated in accordance with IWB-3142.4 for joint integrity, which relies on an analytical evaluation of a component containing relevant conditions for continued service. The evaluation for the specific case would consider the number and service age of the bolts, bolt and component material, corrosiveness of process fluid, leakage location and system function, leakage history at the connection or

other components, and visual evidence of corrosion at the assembled connection. This alternative allows the licensee to use a systematic approach and sound engineering judgement, provided that as a minimum, all of the evaluation factors listed in the code case are considered.

As a result, the NRC staff concludes that the use of Code Case N-566-1 provides an acceptable level of quality and safety. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the fourth ISI interval at PBNP, Units 1 and 2, or until such time as the Code Case N-566-1 is published in a future revision of Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1." After that time, if the licensee wishes to continue to use Code Case N-566-1, the licensee must use all conditions and limitations, if any, listed in the regulatory guide.

### 3.0 CONCLUSION

The NRC staff has concluded, based on the considerations discussed above, that there is reasonable assurance that the health and safety of the public will not be endangered by implementation of the proposed alternatives, and that such activities will be conducted in compliance with the Commission's regulations.

Principal Contributor: J. Lamb

Date: October 8, 2002