January 30, 2003

Mr. Fred J. Cayia
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 - REQUEST FOR RELIEF FROM THE INSERVICE TESTING REQUIREMENTS OF THE AMERICAN SOCIETY OF MECHNICAL ENGINEERS CODE, SECTION XI (TAC NOS. MB4081 AND MB4082)

Dear Mr. Cayia:

By letter dated February 13, 2002, the Nuclear Management Company, LLC (NMC), submitted Relief Requests VRR-1 and PRR-1 requesting relief from the inservice testing requirements of Section XI of the American Society of Mechanical Engineers *Boiler and Pressure Vessel Code* for certain safety-related valves and pumps at the Point Beach Nuclear Plant, Units 1 and 2. In a subsequent letter dated August 15, 2002, which followed a conference call held between the Nuclear Regulatory Commission (NRC) staff and NMC on July 16, 2002, NMC withdrew Relief Request VRR-1.

The NRC staff has reviewed Relief Request PRR-1. The NRC staff's safety evaluation is enclosed. Pursuant to 10 CFR 50.55a(a)(3)(i), the proposed alternative described in Relief Request PRR-1 is authorized on the basis that the alternative testing provides an acceptable level of quality and safety. The proposed alternative is authorized for the fourth 10-year inservice testing interval.

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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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

ASME SECTION XI INSERVICE TESTING PROGRAM FOURTH INTERVAL

RELIEF REQUEST

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 February 13, 2002, the Nuclear Management Company, LLC (the licensee) submitted Relief Requests VRR-1 and PRR-1 requesting relief from the inservice testing requirements of Section XI of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (Code) for certain safety-related valves and pumps at the Point Beach Nuclear Plant, Units 1 and 2. In a subsequent letter dated August 15, 2002, which followed a conference call held on July 16, 2002, the licensee withdrew Relief Request VRR-1. Therefore, the NRC staff's evaluation herein pertains only to Relief Request PRR-1.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a, requires that inservice testing (IST) of certain ASME Code Class 1, 2 and 3 pumps and valves be performed in accordance with Section XI of the ASME Code and applicable addenda, except where relief has been requested and granted or proposed alternatives have been authorized by the Commission pursuant to 10 CFR 50.55a(a)(3)(i), (a)(3)(ii) or (f)(6)(i). In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternative would provide an acceptable level of quality and safety, (2) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety, or (3) conformance would be impractical for its facility. NRC Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides alternatives to the Code requirements which are acceptable. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants."

3.0 TECHNICAL EVALUATION

3.1 Background

The IST program at Point Beach, Units 1 and 2, requires that the testing meet the requirements of the 1995 edition and the 1996 addenda of the ASME *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code). In Relief Request PRR-1, the licensee is seeking relief from

instrument requirements of ISTB 4.7.1(b)(1) of the OM Code (i.e., the full scale range of each analog instrument shall not be greater than three times of the reference value). The NRC staff's review of Relief Request PRR-1 is provided below.

3.2 Pump for Which Relief Is Requested

- component cooling water (CCW) pumps 1/2P-11A & B
- residual heat removal (RHR) pumps 1/2P-10A & B
- spent fuel pool cooling (SFPC) pumps P-12A & B

Relief is requested from the instrument requirements of Table ISTB 4.7.1-1. Specifically, Table 4.7.1-1 requires that the full scale of each analog instrument shall not be greater than three times the reference value.

3.3 Licensee's Basis For Relief

The licensee states:

> Various permanently installed pressure instruments utilized during the Group A test have a full scale range that exceeds three times the reference value criteria that is specified by the Code. Although these instruments do not meet the Code range requirements, they are able to provide the same or better indication accuracy as an instrument that is allowed by the Code, and ensure repeatability of test data.
>
> For instruments to be in compliance with the OM Code Group A tests, two requirements must be satisfied. The first requirement states that flow and pressure instrumentation must be accurate to within ±2% of the full scale value; the second requirement states that the full scale range of each instrument shall be three times the reference value or less. Based on these requirements, a maximum indicated accuracy of ±6% can be calculated by comparing the actual tolerance of the instrument to the reference value being measured.
>
> The following example of calculating indicated instrument accuracy uses a pressure reference value of 20 psig and a pressure gauge with full scale range with full scale range of 60 psig that is calibrated to ±2% of full scale.
>
> Code Requirement: Group A Test
> 3 x reference value (20 psig) = 60 psig
> Instrument tolerance = ± 1.2 psig (±2% x 60 psig)
>
> Indicated Accuracy:
>
> ±1.2 psig/20 psig x 100% = ±6%
>
> The indicated accuracy for the instruments on the pumps listed are less than or equal to ±6% at the reference value. These accuracies are the same or better than those allowed by the Code. The use of existing gauges is supported by NUREG-1482, Paragraph 5.5.1 when the combination of range and accuracy yields a reading at least equivalent to the reading achieved from instruments that meet the Code requirements.

> In addition, all the gauges identified serve as suction pressure gauges. Since suction pressure is subtracted from a much higher discharge pressure to determine differential pressure, the impact of the suction pressure error is minimized.

3.4 Proposed Alternative Testing

The licensee states:

> The existing permanently installed pump instrumentation is acceptable provided the indicated accuracy is less than or equal to ±6% of the reference value.

3.5 NRC Staff Evaluation

The licensee requests relief for the pressure instruments associated with CCW pumps, RHR pumps, and SFPC pumps from the instrument requirements of Table ISTB 4.7.1-1, which requires that the full scale of each analog instrument shall not be greater than three times the reference value.

The CCW, RHR, and SFPC pumps are Group A pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations. For Group A pump tests, the Code states that the pressure instrumentation shall be accurate to within ±2 percent of full scale. The Code also states in ISTB 4.7.1(b)(1) that full scale range of each analog instrument shall not be greater than three times the reference value. Therefore, the combination of these two requirements results in an effective loop accuracy requirement of ±6 percent of the reference value.

The full scale of pressure instruments identified in the Relief Request PRR-1 are all greater than three times the reference value (up to eight times), but the accuracy of these instruments are either ±0.5 percent or ±1.0 percent. Therefore, the combined effective accuracy of the affected pressure instruments varies from ±1.73 percent to ±4.05 percent of the reference value, which is within the loop accuracy requirement of ±6 percent.

The installed instrumentation for Group A tests does not meet the range requirement of ISTB 4.7.1(b)(1). However, as discussed above, these pressure instruments yield readings equivalent to the reading required from instruments that meet the Code requirement (i.e., up to ±6 percent), and thus, provide an acceptable level of quality and safety.

4.0 CONCLUSION

The NRC staff concludes the proposed alternative described in Relief Request PRR-1 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the alternative testing provides an acceptable level of quality and safety. The proposed alternative is authorized for the fourth 10-year IST interval.

Principal Contributor: Y. S. Yuang

Date: January 30, 2003