Wisconsin Electric
POWER COMPANY

Point Beach Nuclear Plant
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NPL 99-0542

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Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
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Ladies and Gentlemen:

DOCKETS 50-266 AND 50-301
ASME SECTION XI PRESSURE TEST PROGRAM
RELIEF REQUEST PTP-3-08
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In accordance with 10 CFR 50.55a(a)(3)(ii) Wisconsin Electric's Point Beach Nuclear Plant (PBNP) is requesting relief from specific requirements of ASME Boiler and Pressure Vessel Code, Section XI, 1986 Edition and revision to Relief Request RR-1-15 (Unit 1) and RR-2-16 (Unit 2) "Corrective Measures for Leaking Bolted Connections." RR-1-15 and RR-2-16 request relief from ASME Section XI, 1986 Edition, Paragraph IWA-5250)a)(2), that requires if leakage occurs at a bolted connection, during the conduct of a system pressure test, that all bolting be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100.

By letter dated March 4, 1993, PBNP submitted Relief Request RR-1-15 and RR-2-16. Relief was requested from removing and performing a VT-3 visual examination on all bolting on bolted connections when leakage is observed during a system pressure test. Our proposed alternative examination was to remove one bolt nearest the leak on bolted connections containing bolting material other than austenitic stainless steel, perform a VT-1 visual examination and evaluate in accordance with IWA-3100. The bolted connections containing austenitic stainless steel bolting material would receive a VT-3 visual examination on the bolted joint and evaluated in accordance with IWA-3100. Approval was granted by the NRC via a letter dated December 14, 1994, that stipulated at least one bolt nearest the source of leakage shall be removed regardless of bolting material.

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The alternative proposed in the attached revised Relief Request PTP-3-08 allows for a systematic evaluation of the leak condition, taking into account factors such as service age of the bolting, the bolt/component material, corrosiveness of the fluid and its degrading effect on the associated component or bolting. If the evaluation concludes that the leaking condition has not degraded the bolting or effected joint integrity, no further action is necessary. If the evaluation concludes that the bolting is degraded or is inconclusive in determining degradation, a bolt closest to the source of leakage shall be removed,

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VT-1 examined and evaluated in accordance with IWA-3100(a). When the removed bolting shows evidence of unacceptable degradation, all affected bolting shall be removed, VT-1 examined and evaluated in accordance with IWA-3100(a) or the affected bolting shall be replaced. The proposed alternatives of PTP-3-01 are similar to the alternatives to the Code requirements that were approved by the NRC on January 16, 1997, for D.C. Cook Units 1 and 2 and on August 17, 1998, for Turkey Point Units 3 and 4. Approval of this relief request will supersede previous approved Point Beach Nuclear Plant Relief Requests RR-1-15 and RR-2-16.

Should you have questions or require additional information, please contact us.

Sincerely,

A. J. Cayia
Manager,
Regulatory Services & Licensing

FAF/tat

Attachment

cc: NRC Resident Inspector
NRC Regional Administrator
NRC Project Manager
PSCW

RELIEF REQUEST PTP-3-08

Components:

Class 1, 2 and 3 pressure retaining bolted connections.

Drawings:

Various

ASME Section XI (1986 Edition) Requirements:

ASME Section XI Paragraph IWA-5250(a)(2) requires that if leakage occurs at a bolted connection during the conduct of a system pressure test VT-2, that bolting shall be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100.

Proposed Alternate Testing:

As an alternative to the requirements of the 1986 Edition of the ASME Section XI Code, paragraph IWA-5250(a)(2), PBNP proposes that if leakage is detected at a bolted flange connection, other than gaseous systems, by VT-2 examination during a system pressure test, either the bolt closest to the source of leakage will be removed and a VT-1 examination conducted and evaluated in accordance with IWA-3100(a) or an engineering evaluation will be performed to determine the susceptibility of the bolting to corrosion and assess the potential for failure. The following factors will be considered, as applicable, when evaluating the acceptability of bolting:

- Type and amount of leakage
- Service age of the bolting
- Bolt and component material
- Corrosive properties of the process fluids, including temperature
- Leakage location and system function
- Leakage history at the specific location
- Visual evidence of corrosion at connection (while connection is assembled)
- Physical configuration of the bolted connection
- Other components in the vicinity that may be degraded due to the leakage

If the evaluation of the above criteria concludes that the leaking condition has not degraded the bolting or results in a loss of joint integrity, no further action is necessary. However, a reasonable attempt to stop the leakage shall be made. If the evaluation concludes that the bolting is degraded, or is non-conclusive in determining degradation, or if the evaluation is not performed, the bolt closest to the source of leakage shall be removed, VT-1 examined and evaluated in accordance with IWA-3100(a). If the removed bolt shows evidence of unacceptable degradation, all affected bolting shall be

removed and VT-1 examined and evaluated in accordance with IWA-3100(a) or the bolting shall be replaced. If the leakage is identified when the bolted connection is in service, and the information in the evaluation is supportive, the removal of the bolt for VT-1 examination may be deferred to the next refueling outage. Leakage detected at pressure retaining mechanical connections on gaseous systems shall not be evaluated but addressed by PBNPs maintenance program.

Basis for Relief:

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is being requested on the basis that compliance with the original examination requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Removal of any or all bolting where leakage is observed is not the most prudent course of action in some cases. This requirement does not take into consideration such factors as the corrosiveness of the fluid, the bolting or component material, the type and location of the leakage, the service age of the bolting and the physical configuration of the bolting. Additionally, in recognition of the burden associated with the removal and examination of all bolting, later editions of the Code require removal of only the bolt closest to the source of leakage. Furthermore, there are several problems associated with the current requirements of IWA-5250(a) as summarized below.

1. IWA-3100 does not provide an acceptance standard for VT-3 bolt inspection.
2. The requirement increases the radiological dose to maintenance personnel for leaks that are often not a challenge to operational or structural limits.
3. In some cases bolting cannot be removed without damaging the bolt, or removal is precluded due to component configuration.
4. It is not a requirement of the Code that the leakage must be stopped, and inspection of the bolting will not necessarily stop the leak.
5. Removing one bolt at a time, if allowed by system conditions and bolt pattern, may increase the leakage.
6. In many cases, implementation of the requirement would cause the plant an unnecessary transient, delay restart, or require a plant shutdown.

The Code requirement to remove, examine and evaluate bolting does not allow the Owner the option to consider other factors that may indicate the acceptability of the bolted connection. Point Beach Nuclear Plant (PBNP) considers this requirement to be unnecessarily prescriptive and restrictive. The proposed alternative will allow PBNP to utilize a systematic approach in the evaluation of leakage identified at bolted connections during the conduct of a system pressure test. The proposed alternate testing presents a sound engineering approach. In addition, if the initial evaluation indicates the need for a more detailed analysis, PBNP will remove the bolt closest to the source of leakage, perform a VT-1 visual examination, and evaluate the bolt in accordance with IWA-3100(a). The VT-1 examination criteria is more stringent than a simple corrosion

evaluation as described in IWA-5250(a)(2). For these reasons, we believe that reasonable assurance of the operational readiness of the bolted connection will be provided. Leakage detected at pressure-retaining mechanical connections on gaseous systems is highly unlikely to result in bolting degradation. Therefore, a reasonable approach to correcting these conditions without performing an evaluation as defined in the proposed alternate testing, is via our maintenance program.