

January 28, 2000

Mr. Michael B. Sellman  
Senior Vice President and  
Chief Nuclear Officer  
Wisconsin Electric Power Company  
231 West Michigan Street  
Milwaukee, WI 53201

SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 - SAFETY EVALUATION  
REGARDING RELIEF REQUESTS ASSOCIATED WITH THE THIRD 10-YEAR  
INSERVICE INSPECTION (ISI) INTERVAL (TAC NOS. MA5234 AND MA5235)

Dear Mr. Sellman:

By letter dated March 3, 1999, Wisconsin Electric Power Company (WEPCO) submitted Requests for Relief (RR) 1-19 and 2-25, from the requirements of the American Society for Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI, for Point Beach Nuclear Plant (PBNP), Units 1 and 2, third 10-Year ISI interval.

The U. S. Nuclear Regulatory Commission (NRC) staff has reviewed and evaluated your submittal. Based on its review, the NRC staff has determined that the alternatives proposed, namely to examine the welds to the maximum extent practicable with known limitations, would provide an acceptable level of quality and safety. Accordingly, relief is granted pursuant to 10 CFR 50.55a(g)(6)(i) for the remainder of the current 10-year interval. In making its determination, the staff considered the impracticality of performing the required inspections and the burden on the licensee if the Code requirements were imposed. The reliefs are authorized by law, and will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed. The enclosure documents our evaluation.

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

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Point Beach Nuclear Plant, Units 1 and 2

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November 1999

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REGARDING RELIEF REQUESTS FOR THE INSERVICE INSPECTION

THIRD 10-YEAR INTERVAL

WISCONSIN ELECTRIC POWER COMPANY

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

1.0 INTRODUCTION

Inservice inspection (ISI) of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code (the Code) and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). The regulation in 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (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 pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 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. The applicable edition of Section XI of the ASME Code for Point Beach Nuclear Plant (PBNP), Units 1 and 2, third 10-year interval ISI is the 1986 edition, no addenda, of Section XI of the ASME B&PV Code.

By letter dated March 3, 1999, Wisconsin Power Electric Company (the licensee) submitted Requests For Relief RR-1-19 and RR-2-25 seeking relief from the Code for PBNP, Units 1 and 2.

ENCLOSURE

2.0 EVALUATION OF RELIEF REQUESTS

A. Relief Request RR-1-19, for IWB Requirements, IWB-2500, Table IWB-2500-1, Examination Category B-A, Items B1.21, B1.30, and Examination Category B-D, Item B3.90

Code Requirement: In accordance with the ASME Code, 1986 edition, Paragraph IWB-2500, Table IWB-2500-1, Examination Categories B-A and B-D, Item Numbers B1.21, B1.30, and B3.90 require volumetric examination of “essentially 100 percent” of the reactor pressure vessel (RPV) welds.

Licensee’s Proposed Alternative: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code’s volumetric examination coverage requirement for weld numbers RPV-17-683, RPV-14-683-A, RPV-14-683-B, RPV-2-686-A, RPV-2-686-C, RPV-687-01-A, and RPV-687-01-B. The licensee proposes to examine the welds to the maximum extent practicable, taking into account known limitations.

Licensee’s Basis for Proposed Alternative (as stated):

“During the Unit 1 Third 10-Year Interval, reactor pressure vessel examination in 1998, PBNP examined all welds to the maximum extent practical. Various limitations, documented in Attachment 2 [of the licensee’s letter dated March 3, 1999], prevented coverage of essentially 100% of the noted weld examination areas. To achieve the requirements of essentially 100% coverage, extensive modifications would have to be made to the Point Beach Nuclear Plant (PBNP) Unit 1 reactor vessel. This would not be practical and would be detrimental to the vessel.”

Staff Evaluation: The Code requires essentially a 100-percent volumetric examination of circumferential head, shell-to-flange, and nozzle-to-vessel welds. Examination of the welds during the third 10-year ISI interval were limited to less than the Code-required coverage of essentially 100 percent. The specific condition(s) or interferences that prohibited complete volumetric examination are listed in the table below.

<b>Relief Request RR-1-19 (PBNP, Unit 1)</b>			
Weld Number	Weld Identification	Examination Coverage	Limitation
RPV-17-683	Lower shell to lower head ring	77%	Limited due to anti-rotation lugs
RPV-14-683-A	Shell to flange (Az 0-180)	60%	Limited due to inside surface taper
RPV-14-683-B	Shell to flange (Az 180-360)	60%	Limited due to inside surface taper
RPV-2-686-A	Shell to outlet nozzle at 28.5 deg	67%	Transverse examination limited due to nozzle integral extension
RPV-2-686-C	Shell to outlet nozzle at 208.5 deg	67%	Transverse examination limited due to nozzle integral extension
RPV-687-01-A	Safety Injection (SI) nozzle to shell at 288.5 deg	59%	Transverse examination limited due to nozzle integral extension
RPV-687-01-B	SI nozzle to shell at 288.5 deg	59%	Transverse examination limited due to nozzle integral extension

The licensee has examined the indicated welds to the maximum extent practicable and has proposed no additional examinations. The examinations completed of the subject RPV welds is a best-effort examination resulting in limited examination coverage of the welds that provides an acceptable level of quality and safety. In addition, the geometric configuration and other interferences prevents achieving the Code-required volumetric coverage as design modifications to facilitate access for volumetric examinations would be required. Imposition of the Code-required examinations would place a significant burden on the licensee.

Considering that the Code requires essentially a 100-percent examination of the subject welds, and the licensee has examined the welds to the maximum extent practicable, any existing patterns of degradation would have been detected by the cumulative coverages achieved. Therefore, reasonable assurance of the structural integrity of the welds has been provided. The staff, having evaluated the impracticality of meeting the Code requirements and the reasonable assurance provided by the extent of examinations performed, grants relief to the licensee pursuant to 10 CFR 50.55a(g)(6)(i).

B. Relief Request RR-2-25, for IWB Requirements, IWB-2500, Table IWB-2500-1, Examination Category B-A, Items B1.21, B1.30, and Examination Category B-D, Item B3.90

Code Requirement: In accordance with the ASME Code, 1986 edition, Paragraph IWB-2500, Table IWB-2500-1, Examination Categories B-A and B-D, Item Numbers B1.21, B1.30, and B3.90, require volumetric examination of “essentially 100 percent” of the RPV welds.

Licensee’s Proposed Alternative: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code’s volumetric examination coverage requirement for weld numbers RPV-17-683, RPV-14-683-A, RPV-14-683-B, RPV-02-686-A, RPV-02-686-C, RPV-687-01-A, and RPV-687-01-B. The licensee proposes to examine the welds to the maximum extent practicable, taking into account known limitations.

Licensee’s Basis for Proposed Alternative (as stated):

“During the Unit 2 Third 10-Year Interval, reactor pressure vessel examination in 1998, PBNP examined all welds to the maximum extent practical. Various limitations, documented in Attachment 4 [of the licensee’s letter dated March 3, 1999], prevented coverage of essentially 100% of the noted weld examination areas. To achieve the requirements of essentially 100% coverage, extensive modifications would have to be made to the PBNP Unit 2 reactor vessel. This would not be practical and would be detrimental to the vessel.”

Staff Evaluation: The Code requires essentially a 100-percent volumetric examination of circumferential head, shell-to-flange, and nozzle-to-vessel welds. Examination of the welds during the third 10-year ISI interval were limited to less than the Code-required coverage of essentially 100 percent. The specific condition(s) or interferences that prohibited complete volumetric examination are listed in the table below.

<b>Relief Request RR-2-25 (PBNP, Unit 2)</b>			
Weld Number	Weld Identification	Examination Coverage	Limitation
RPV-17-683	Lower shell to lower head ring	82%	Limited due to anti-rotation lugs
RPV-14-683-A	Shell to flange (Az 0-180)	67%	Limited due to inside surface taper
RPV-14-683-B	Shell to flange (Az 180-360)	67%	Limited due to inside surface taper
RPV-02-686-A	Shell to outlet nozzle at 28.5 deg	63%	Transverse examination limited due to nozzle integral extension
RPV-02-686-C	Shell to outlet nozzle at 208.5 deg	63%	Transverse examination limited due to nozzle integral extension
RPV-687-01-A	SI nozzle to shell at 288.5 deg	69%	Transverse examination limited due to nozzle integral extension
RPV-687-01-B	SI nozzle to shell at 288.5 deg	69%	Transverse examination limited due to nozzle integral extension

The licensee has examined the indicated welds to the maximum extent practicable and has proposed no additional examinations. The examinations completed of the subject RPV welds is a best-effort examination resulting in limited examination coverage of the welds that provides an acceptable level of quality and safety. In addition, the geometric configuration and other interferences prevents achieving the Code-required volumetric coverage as design modifications to facilitate access for volumetric examinations would be required. Imposition of the Code-required examinations would place a significant burden on the licensee.

Considering that the Code requires essentially a 100-percent examination of the subject welds, and the licensee has examined the welds to the maximum extent practicable, any existing patterns of degradation would have been detected by the cumulative coverages achieved. Therefore, reasonable assurance of the structural integrity has been provided. The staff, having evaluated the impracticality of meeting the Code requirements and the reasonable assurance provided by the extent of examinations performed, grants relief to the licensee pursuant to 10 CFR 50.55a(g)(6)(i).

### 3.0 CONCLUSION

The PBNP, Units 1 and 2, ISI program requests for relief from the Code requirements have been reviewed by the staff. The implementation of the ISI program and relief requests is subject to inspection by the NRC.

Relief is granted for RR-1-19 and RR-2-25 pursuant to 10 CFR 50.55a(g)(6)(i) for the remainder of the current 10-year interval. In making this determination, the staff considered the impracticality of performing the required inspections and the burden on the licensee if the Code requirements were imposed.

Principal Contributor: G. Hatchett

Date: January 28, 2000