

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-266  
License No: DPR-24

Report No: 50-266/99017(DRS)

Licensee: Wisconsin Electric Power Company

Facility: Point Beach Nuclear Plant, Units 1 and 2

Location: 6610 Nuclear Road  
Two Rivers, WI 54241

Dates: November 15 -19, 1999

Inspector: K. GreenBates, Reactor Inspector Engineer

Approved by: John M. Jacobson, Chief, Mechanical Engineering Branch  
Division of Reactor Safety

## EXECUTIVE SUMMARY

Point Beach Nuclear Plant, Unit 1  
NRC Inspection Report 50-266/99017(DRS)

This routine inspection focused on the conduct of inservice inspection activities to identify problems which have resulted from inservice use of Class 1 and 2 piping, systems or components. The following specific observations were made:

### Maintenance

- The inspector concluded that the radiographic examinations reviewed were performed in accordance with applicable procedures by certified personnel. (Section M1.1)
- The Class 1 and 2 weld procedure specifications and procedure qualification records reviewed met the American Society of Mechanical Engineers Code requirements. (Section M1.2)
- The nondestructive examination procedures and associated examination data reviewed by the inspector complied with American Society of Mechanical Engineers Code Section V, and Section XI requirements. (Section M3.1)
- Contractor and licensee personnel performing nondestructive examination were qualified and certified in accordance with regulatory requirements. (Section M5.1)
- Overall, the implementation of the Inservice Inspection Program Plan was consistent with Code and NRC relief request commitments. (Section M7.1)
- The inspector identified a lack of independent field observation with qualified personnel during audits of nondestructive test examinations. This demonstrated a weakness in the quality assurance audit program for the conduct of performance based audits of the Inservice Inspection Program. (Section M7.2)

## Report Details

The objective of the Point Beach inservice inspection (ISI) program was to identify problems which have resulted from inservice use of the piping, systems or components. The program addressed the American Society of Mechanical Engineers (ASME) Section XI non-destructive test requirements for examination of Class 1 and 2 components. Unit 1 was in its' third ten year ISI interval, which began in 1990, and due to past outage schedules, the Unit 1 Refueling 25 outage did not include steam generator examinations. Unless otherwise stated, "Code" as discussed herein, refers to the 1986 Edition with no Addenda of Section XI, of the ASME Code.

## II. Maintenance

### **M1 Conduct of Maintenance**

#### **M1.1 Radiographic Examinations of Code Class 1 and 2 Welds**

##### **a. Inspection Scope (73753, 73755)**

The inspector reviewed radiographic record films of Class 1 and 2 welds.

##### **b. Observations and Findings**

The inspector examined the radiography record films and reader sheets for two Class 1 reactor coolant system pressurizer relief valve welds, (RC515 and RC516) and a Class 2 safety injection replacement valve weld, (SI857B). The inspector observed that penetrameter type, size and film quality attributes were in accordance with the approved procedures and Section V ASME Code requirements. The inspector considered that the weld coverage (overlap) and associated radiography records were appropriate for the welds.

##### **c. Conclusions**

The inspector concluded that the radiographic examinations reviewed were performed in accordance with applicable procedures by certified personnel.

#### **M1.2 Class 1 and 2 Weld Specification and Procedure Qualification Records**

##### **a. Inspection Scope (73753, IP 55050)**

The inspector reviewed selected Point Beach weld procedures pertaining to Class 1 and 2 welds, in conjunction with the supporting procedure qualification records, for conformance with ASME Code and regulatory requirements.

b. Observations and Findings

The inspector reviewed weld procedure specifications and procedure qualification records for the following Unit 1 welds:

- Class 1, Pressurizer Relief Valve Replacement Welds, (RC515 and 516).
- Class 1, Control Rod Drive Mechanism Head Adapter Plug Welds, (CDRM G5, G9, E7 and I7).
- Class 1, Safety Injection Canopy Weld, (SI847B).
- Class 1, Inlet Weld Steam Generator Channelhead Drain Valve, (RC526A).
- Class 2, Safety Injection Valve Replacement Weld, (SI857B).

The inspector observed that in general, the weld procedure specifications and procedure qualification records met the requirements specified in the ASME Code.

c. Conclusions

The Class 1 and 2 weld procedure specifications and procedure qualification records reviewed met the minimum ASME Code requirements.

**M3 Maintenance Procedures and Documentation**

M3.1 Review of Nondestructive Examination Data (73755)

a. Inspection Scope

The inspector reviewed selected nondestructive examination procedures and associated examination recorded data to verify that ISI examinations were being conducted in accordance with ASME Section XI requirements,.

b. Observations and Findings

The volumetric and liquid dye penetrant procedures reviewed were approved by the Authorized Nuclear Inservice Inspector, and were in accordance with ASME Code Section V and XI requirements.

c. Conclusions

The nondestructive examination procedures and associated examination data reviewed by the inspector complied with ASME Code Section V, and Section XI requirements.

## **M5 Maintenance Staff Training and Qualification**

### **M5.1 Nondestructive Examination Personnel Qualifications**

#### **a. Inspection Scope**

The inspector reviewed the qualification and certification records for selected licensee and contractor Level II and Level III personnel that performed examinations on Code Class 1 and 2 welds and components.

#### **b. Observations and Findings**

For the nondestructive examination personnel reviewed, the inspector found that personnel had the appropriate levels of certification, experience, and education, and met the visual standards requirements of American Society for Nondestructive Testing SNT-TC-1A. In addition, the inspector confirmed that personnel performing ultrasonic examination (UT) and analysis were qualified to a Level II and Level III qualification requirements in accordance with paragraphs IWA-2300 and IV-2200 of the Code.

#### **c. Conclusions**

Contractor and licensee personnel performing nondestructive examinations were qualified and certified to regulatory requirements.

## **M7 Quality Assurance in Maintenance Activities**

### **M7.1 Inservice Inspection Program Implementation**

#### **a. Inspection Scope (73753, 73051)**

The inspector reviewed the licensee's ISI Program Plan and implementation of the 10 CFR 50.55a(g)(6)(l) relief request requirements.

#### **b. Observations and Findings**

The Point Beach Master Inservice Inspection Plan, clearly annotated the relief request requirements that applied to each examination required by the ASME Code. For this Code period, the minimum and maximum percentage of ISI examinations required by Code and applicable to Point Beach were defined in Code Table IWB-2412-1 "Inspection Program B". For the current Code period, the inspector confirmed that the percentage of examinations selected by the licensee in Code examination category B-D, "Full Penetration Welds of Nozzles in Vessels" and B-B "Pressure Retaining Welds in Vessels Other than the Reactor Vessel", met Code Table IWB-2412-1 requirements. The inspector also reviewed relief requests RR-1-19 and RR-2-25 concerning category B-A and B-D welds. The implementation of the ISI Program Plan was consistent with Code requirements and NRC relief request commitments.

c. Conclusions

Overall, the implementation of the ISI Program Plan was consistent with Code and NRC relief request commitments.

M7.2 Inservice Inspection Program Audits

a. Inspection Scope

The inspector reviewed Quality Assurance Program commitments and the ISI Program audits conducted by the Quality Assurance Department and interviewed licensee personnel.

b. Observations and Findings

Inspector found that Section 1.4.18 of the Point Beach Final Safety Analysis Report committed the Nuclear Assurance Section to American National Standard N18.7, 1976 Edition. It also mandated that the frequency of the audits was to be performance based and determined such that all safety-related functions were to be completed within a period of two years.

The inspector identified that the ISI Program audits completed by the Quality Assurance Department during the last four years did not include actual observation of nondestructive test field examinations. Further, ISI personnel reported that they were not aware of any Quality Assurance Department audit observations of safety related nondestructive examinations performed in the last six years. The inspector was concerned that lack of actual field monitoring of ISI work could undermine the effectiveness of any audits conducted for the ISI Program. In response to the inspector's concern, the licensee issued CR 99-3117 to evaluate this issue.

c. Conclusions on ISI Program Audits

The inspector identified a lack of independent field observation with qualified personnel during audits of nondestructive test examinations. This demonstrated a weakness in the quality assurance audit program for the conduct of performance based audits of the ISI Program.

### **III. Engineering**

**E8 Miscellaneous Engineering Issues**

E8.1 (Closed) Unresolved Item (URI) 50-301/96018-15(DRS): Nonqualified 3/8" RCS Tubing.

The inspector reviewed Action Item IR 96-018 which documented how the station responded to the identified condition of using nonqualified tubing connected to the reactor coolant system. Several of the action items were closed to a summary report which could not be located. The licensee promptly generated condition report CR 99-3059 to document this problem. A recreation of the actions taken was undertaken and

documented as Point Beach Internal Correspondence NPM 99-1281 on December 2, 1999. The inspector reviewed the recreated closeout summary along with associated documentation and calculations used to recreate the summary.

Unit 1 Resolution: Sargent & Lundy calculation WE-100159, "Evaluation of Reactor Coolant System Tubing for Instrumentation Inside Unit 1 Containment", Revision 0 and Addenda A, evaluated the tubing and identified some support changes needed to increase the flexibility of the tubing. All necessary tubing support modifications for Code compliance had been completed by modification MR 98-031 and associated work orders.

Unit 2 Resolution: Sargent & Lundy calculation WE-200127, "Evaluation of Reactor Coolant System Tubing for Instrumentation Inside Unit 2 Containment", and walkdown evaluation results, found that modifications to the tubing supports and re-orientation of several expansion loops to accommodate reactor coolant system movements were required. All necessary modifications for Code compliance had been completed by modification MR 97-042.

The plant modifications addressed the inspector's concern and no new concerns were identified during this review. This item is considered closed.

**E8.2 (Closed) Licensee Event Report (LER) 50-266/99-012: Crack Found on "1A" Steam Generator Head Drain Valve.**

During a liquid penetrant examination of a weld on the top side of the "1A" steam generator channelhead drain valve (IR-526A), a 0.25-inch long crack was identified in the weld metal. No leakage had been detected at power, however the crack appeared through wall; small droplets of water appeared to be coming from the crack and boric acid crystals were found in the vicinity of the valve. Condition report CR-992752 was promptly issued and the NRC informed.

Inspector review found that the leak was repaired by cutting out the defective weld and rewelding the valve to existing piping. The defective weld and pipe stub were saved for future root cause analysis, and additional nondestructive examinations were performed for the other welds in the immediate area. The inspector reviewed the weld procedure specification, procedure qualification records and liquid penetrant records as detailed in Section MI of this report. As the weld was replaced using Code compliant weld procedures and a root cause determination had been implemented, the inspector had no further concerns and this item is considered closed.

## **V. Management Meetings**

### **X1 Exit Meeting Summary**

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on November 19, 1999. The licensee acknowledged the findings presented and did not identify any of the potential report input discussed as proprietary.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

A. Capristo, Manager, Organizational Assessment  
A. Cayia, Manager, Regulatory Services & Licensing  
F. Flentje, Regulatory Services & Licensing  
V. Kaminskas, Maintenance Manager  
J. Knorr, Manager, Regulation & Compliance  
R. Mende, Plant Manager  
C. Olsen, Welding  
C. Peterson, Director, Engineering  
C. Prothero, Inservice Inspection Coordinator  
J. Schweitzer, Manager, Site Engineering  
G. Sherwood, Supervisor, Component Engineering (Site Eng)  
P. Wld, Engineering  
R. Young, Supervising Eng, Org Assessment

### NRC

F. Brown, Senior Resident Inspector  
R. Powell, Resident Inspector

## INSPECTION PROCEDURES USED

IP 73753: Inservice Inspection  
IP 73052: Review of ISI procedures  
IP 73051: Review of ISI program  
IP 73755: Review of ISI data  
IP 37550: Review of Engineering/modification

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

None

### Closed

50-266/301/96018-15(DRS)	URI	Nonqualified 3/8" RCS Tubing
50-266/99-012	LER	Crack Found on "1A" Steam Generator Head Drain Valve

### Discussed

None

## PARTIAL LIST OF DOCUMENTS REVIEWED

### Condition Reports

IR 96-018	"Non qualified 3/8" Tubing", dated September 16, 1996
CR 99-2616	"VT-3 ISI Examination Found Lock Nut Loose on RHR Support", dated October 29, 1999
CR 99-2613	"VT-3 ISI Examination Found Missing Lock Nuts on RHR B Heat Exchanger Support", dated October 13, 1999
CR 99-2614	"VT-3 ISI Examination Found Lock Nuts Not Fully Engaged on RHR A Heat Exchanger Support", dated October 13, 1999
CR 99-2710	"VT-1 ISI Examination Found Inadequate Thread Engagement for SI Valve RH-720", dated November 4, 1999
CR 99-2414	"VT-1 ISI Examination Found Inadequate Thread Engagement for SI Valve SI-842A", dated October 23, 1999
CR 99-2754	"Crack Found in SG Head Drain Valve", dated November 8, 1999
CR 99-3059	"Lost Summary Report for IR 96-018", dated November 19, 1999
CR 99-3117	"Field Quality Assurance Audits Are Not Being Performed For ISI NDE", dated December 3, 1999
QCR 98-0340	"Deficiencies in PBNP Welding Program," dated October 22, 1998
QCR 98-0102	"Procedures with Inadequate NDE Performance Guidance", dated March 18, 1998

### Miscellaneous Documents

Point Beach NPM 99-0986	"Significant Issue 98-3 ASME Section XI Program Issues Recovery Plan", dated August 26, 1999
PBNP Correspondence NPM 99-1281	"Documentation of Events From Use of Non-QA Components in RCS Due to Lost Summary From IR 96-018", dated December 2, 1999.
Sargent & Lundy Calculation WE-200127	"Evaluation of Reactor Coolant System Tubing for Instrumentation Inside Unit 2 Containment", dated May 30, 1997
Sargent & Lundy Calculation WE-200127	"Evaluation of Reactor Coolant System Tubing for Instrumentation Inside Unit 1 Containment", dated April 13, 1998
Sargent & Lundy Calculation WE-200127	"Evaluation of Reactor Coolant System Tubing for Instrumentation Inside Unit 1 Containment", dated May 21, 1998
Plant Modification MR97-042	"Reactor Coolant System Tubing Inside Unit 2 Containment", Revision 0
Plant Modification MR98-031	"Reactor Coolant System Tubing Inside Unit 1 Containment", Revision 1
Work Order WO 9912295K	"RT Examination Pressurizer Relief Valve", dated November 9, 1999
Work Order WO 9911478	"RT Examination ISI-857B", dated November 11, 1999

Relief Request RR-1-19, RR-2-25

"NPL 99-0122: ASME Section XI Relief Requests Point Beach Nuclear Plant Units 1 and 2", dated March 3, 1999

Final Safety Analysis Report Section 1.1.18 "Audits", dated June 1999

Radiographic Examination Record 9812506, dated November 17, 1999

Radiographic Examination Record 9812507, dated November 17, 1999

### Procedures

Wisconsin Electric Power Co NP 7.2.5  
PBNP WPS WP-2

"Repair/Replacement Program", Revision 5  
"Welding Procedure for Austenitic Stainless Steels ASME Group P-8 GTAW-SMAW", Revisions 6 & 7

PBNP WPS WP-17

"Austenitic Stainless Steels ASME Group P-8 GTAW-Pipe Diameters Over 1" OD", Revision 1

PBNP WPS WP-18

"Welding Procedure for MSB Lid", Revision 1  
Radiographic Examination", Revision 2

PBNP RT-2-WE

Phillips, Getschow Company WPS WP-1

"CS Welding Procedure Specification Number 1",  
Revision 5

Phillips, Getschow Company WPS WP-8

"SS Welding Procedure Specification Number 8",  
Revision 5

Welding Services Inc. WPS A08165

"GTAW Welding Procedure Specification",  
Revision D

### Quality Assurance

Quality Verification Audit Report A-P-99-16, "ASME Section XI ISI, IST, R/R/M and Pressure Test Program", dated July 1, 1999

Work Monitoring Report WMR 99-0069 dated March 22, 1998

Work Monitoring Report WMR 99-0128 dated March 27, 1998

Work Monitoring Report WMR 99-0136 dated March 29, 1998

Work Monitoring Report WMR 99-0186 dated May 5, 1998

Work Monitoring Report WMR 98-0234 dated October 30, 1998

Work Monitoring Report WMR 98-0251 dated July 1, 1998

Work Monitoring Report WMR 98-0256 dated July 1, 1998

Work Monitoring Report WMR 98-0362 dated October 22, 1998

Work Monitoring Report WMR 98-0382 dated November 16, 1998

Work Monitoring Report WMR 98-0430 dated December 22, 1998

Work Monitoring Report WMR 98-0436 dated December 29, 1998

Work Monitoring Report WMR 98-0043 dated March 1, 1999

Work Monitoring Report WMR 98-0098 dated April 19, 1999

Work Monitoring Report WMR 98-0109 dated May 10, 1999

Work Monitoring Report WMR 98-0142 dated July 6, 1999

Work Monitoring Report WMR 98-0352 dated November 9, 1999

## LIST OF ACRONYMS USED

ASME	American Society of Mechanical Engineers
ISI	Inservice Inspection
NRC	Nuclear Regulatory Commission
UT	Ultrasonic Examination