U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-266/78-19

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

Licensee: Wisconsin Electric Power Company
231 West Michigan
Milwaukee, WI 53201

Facility Name: Point Beach Nuclear Power Station, Unit 1

Inspection At: Point Beach Site, Milwaukee, WI

Inspection Conducted: October 2-4, 1978

Inspector: K. D. Ward 10/26/78

Approved By: for D. H. Danielson, Chief C. M. Erb 10/27/78
Engineering Support Section 2

Inspection Summary

Inspection on October 2-4, 1978 (Report No. 50-266/78-19)
Areas Inspected: QA/QC programs, implementing procedures, work activities, and records relative to steam generator tube inspection and inservice inspection of reactor coolant system components. This inspection involved a total of 14 onsite inspection hours by one NRC inspector.
Results: No items of noncompliance or deviations were identified.

## DETAILS

### Persons Contacted

### Principal Licensee Employees

*G. Reed, Plant Manager
J. Greenwood, Assistant to the Manager
*T. Rodgers, Project Superintendent
*R. Harris, Technical Assistant
*F. Leman, Office Supervisor
E. Gross, ISI Coordinator (Milwaukee Nuclear Projects Office)

### Southwest Research Institute (SWRI)

L. Albrecht, QA Site Representative

### Westinghouse (W)

G. Thomas, Site Coordinator

### Hartford Steam Boiler Engineering and Insurance Company

F. Roose, Authorized Nuclear Inspector

The inspector also contacted and interviewed other licensee and contractor employees.

*Denotes those present at the exit interview.

### Functional or Program Areas Inspected

1. Inservice Inspection - General Information

   a. Unit 1 developed a small tube leak in the inlet side of the "A" steam generator during the early morning hours of September 20, 1978. Since repair of the leak was necessary and since the unit was scheduled for a refueling outage on September 28, 1978, the decision was made to make a complete shutdown of the unit and initiate the refueling outage activities.

   b. Westinghouse nondestructive examination (NDE) personnel performed eddy current (ET) examinations on the steam generator tubes and Zetec Company provided eddy current interpretation services.

c. Southwest Research Institute (SWRI) developed and performed the inservice inspection (ISI) program.

d. The Hartford Steam Boiler Company was the contracted third party agency for the ISI and steam generator NDE.

2. Review of Programs

a. Steam Generator (SG) Inspection and Repair

The inspector reviewed the program for SG inspection and repair as is specified by the Point Beach Technical Specifications. The specifications were prepared in accordance with ASME Section III and XI, 1974 Edition through Summer 1975 Addenda.

The licensee personnel were found to be cognizant of the scope and requirements of the steam generator examination program. Adequate measures were provided for performing the examination, evaluating the results, implementing the repair, providing competent documentation and records as necessary.

b. Inservice Inspection (ISI)

The inspector established through review and discussion with the licensee representatives that the programmatic requirements for inservice inspection of the reactor coolant and associated systems as specified by the Point Beach Technical Specifications and other NRR requirements, are in accordance with ASME III and XI, 1974 Edition through Summer 1975 Addenda.

It was determined from available documentation, that the program adequately addressed the scope of work to be accomplished during this outage.

The documented ISI program and the SWRI QA Program Manual provided the implementation of QA/QC measures responsive to NRC requirements.

No items of noncompliance or deviations were identified within the areas reviewed.

3. Review of Procedures

a. Steam Generator Inspection

The procedures applicable to the activity were reviewed in accordance with the applicable requirements. The procedures reviewed are as follows:

(1) Eddy Current Inspection of Steam Generator, MRS 2.4.2 GEN-18, Rev. 0, September 6, 1977.

(2) Steam Generator Tubing Inspection for Tube Wall Degradation, Detection and Quantification. Technical Supplement No. 1 to MRS 2.4.2 GEN-18, Rev. 0.

(3) Steam General Tube Inspection for Dent Evaluation, Technical Supplement No. 2 to MRS 2.2.4 GEN-18, Rev. 0.

(4) Steam General Inspection for Sludge Deposits, Technical Supplement No. 3 to MRS 2.4.2 GEN-18, Rev. 0.

(5) Steam Generator Tubing Inspection for Low Level Tube Wall Degradation, Technical Supplement No. 4 to MRS 2.4.2 GEN-18, Rev. 0.

(6) Steam Generator Tubing Inspection for Tube Wall Degradation Tight Radius U-Bends, Technical Supplement No. 5 to MRS 2.4.2 GEN-18, Rev. 0.

(7) Steam Generator Inspection for Support Plate Integrity, Technical Supplement No. 6 to MRS 2.4.2 Gen-18, Rev. 0.

(8) Installation and Removal of Eddy Current Positioning Devices, MRS 2.4.2 GEN-19, Rev. 0.

(9) Explosive Plugging of Steam Generator Tubes MRS 2.3.2 GEN-9, Rev. 0, July 13, 1977.

(10) Steam Generator Tube Sheet Cleaning Full Recirculation System, MRS 2.2.2 GEN-9, Rev. 0, October 29, 1976.

(11) Installation and Removal of Temporary Nozzle Covers, MRS 2.2.2 GEN-2, Rev. 1, December 6, 1977.

(12) Post-Activity Sign-Off for Area Cleanliness MRS 2.2.2 GEN-6, Rev. 1, October 10, 1975.

(13) Explosive Tube Plugging, NPT-33, October 23, 1975.

(14) Plugging of a Tubesheet Hole From Which the Tube Has Been Removed. Addendum I to NPN-33 above.

(15) Tube/Hole Plugging Using Manual Gas Tungsten Arc Welding NPT-23, February 23, 1976.

(16) Explosive Plug Repair Using Manual Gas Tungsten Arc Welding, NPT-27, February 20, 1976.

(17) Autogenous Weld Repair of Explosive Tube Plugs, NPT-65, October 18, 1976.

(18) Repair Plugging by Autogenous Gas Tungsten Arc Welding, NPT-8, October 31, 1977.

b. Inservice Inspection

The following procedures that were developed by SWRI were reviewed in accordance with the applicable requirements.

(1) Weld Joint Identification Marking on Nuclear Power Plant Piping, 1X-FE-103-6, February 1977.

(2) Measuring and Recording Search Unit Location and Maximum Signal Amplitude Data During Ultrasonic Weld Examinations, 1X-FE-104-1, August 1976.

(3) Onsite NDT Records Control, X-FE-101-0, March 1976.

(4) Control of Nuclear Inspection Equipment, X111-AG-101-0, June 1977.

(5) Liquid Penetrant Examination Color Contrast Method SWRI-NDT-200-1, Rev. 43, July 1978.

(6) Manual Ultrasonic Examination of Pressure Piping Welds, SWRI-NDT-600-3, Rev. 46, June 1978.

(7) Manual Ultrasonic Examination of Vessel-to-Nozzle Inner Radius Sections, SWRI-NDT-600-11, Rev. 26, August 1976.

(8) Manual Ultrasonic Examination of Pressure Retaining Studs and Bolts 2" or Greater in Diameter Containing Access Holes, SWRI-NDT-600-18, Rev. 24, July 1978.

(9) Manual Ultrasonic Examination of Pressure Retaining Round Nuts 2" or Greater in Diameter, SWRI-NDT-600-19, Rev. 24, August 1978.

(10) Manual Ultrasonic Examination of Pressure-Retaining Welds in Austenitic Regenerative Heat Exchanges, SWRI-NDT-600-30, Rev. 8, July 1978.

(11) Manual Ultrasonic Examination of Hexagonal Nuts, SWRI-NDT-600-37, Rev. 2, August 1978.

(12) Visual Examination of Nuclear Reactor Components by Direct or Remote Viewing, SWRI-NDT-600-1, Rev. 42, July 1978.

(13) Visual Examination of Support Members and Structures for Piping, Valves, and Pumps by Direct or Remote Viewing, SWRI-NDT-900-4, Rev. 19, August 1978.

(14) Liquid Penetrant Examination Color Contrast Method, SWRI-NDT-200-1, Rev. 42, July 1978.

(15) Manual Ultrasonic Examination of Nuclear Reactor Pressure Vessel Flange Ligaments, SWRI-NDT-600-5, Rev. 25, July 1978.

(16) Manual Ultrasonic Examination of Pressure Vessel Welds, SWRI-NDT-600-15, Rev. 37, July 1978.

(17) Special Procedure for Manual Ultrasonic Examination of Austenitic Components with High Acoustic Attenuation Properties, SWRI-NDT-800-17, Rev. 17, July 1978.

(18) Special Process Control No. NQAP 11-1, Rev. 1, February 11, 1977 (Qualification and Certification of NDE Personnel).

(19) Visual Examination of Nuclear Reactor Internals by Direct or Remote Viewing, SWRI-NDT-900-2, March 1978.

No items of noncompliance or deviations were identified within the areas reviewed.

4. Observation of Work and Work Activities

a. Steam Generator "A" and "B" Inlet Examination

The following are defective tubes that were found during the SWRI examination.

| Steam Generator | Side | Tube ID | Defect | | |
|---|---|---|---|---|---|
| | | | Type | Size | Location |
| A | INLET | R23C32 | Deep Crevice Crack | 100% (Leaker) | 6" from tube end |
| | | R23C34 | Deep Crevice Crack | 100% (Leaker) | 8" from tube end |
| | | R26C36 | Deep Crevice Crack | 86% | 5" from tube end |
| | | R26C38 | Deep Crevice Crack | 80% | 8" from tube end |
| | | R25C40 | Deep Crevice Crack | 94% | 6" from tube end |
| | | R27C47 | Deep Crevice Crack | 75% | 19" from tube end |
| | | R1C8 | Dent | No-go with 0.650" probe, passed a 0.610" probe. | Restricted at support |
| B | INLET | R21C36 | Deep Crevice Crack | 90% | 12 to 19" from tube end |
| | | R22C38 | Deep Crevice Crack | 76% | 6" from tube end |
| | | R31C41 | Deep Crevice Crack | 61% | 7 to 9" from end |
| | | R45C41 | Deep Crevice Crack | 86% | At #1 support plate in wedge area |

Steam generator "A", inlet side, tube ID, R21C36, was leaking bad at shutdown and was repaired by, "Plugging by Autogenous Gas Tungsten Arc Welding (GTAW) process."

Approximately 2000 tubes were UT examined on the "A" side and 1500 tubes on the "B" side.

b. Inservice Inspection

The inspector observed visual and ultrasonic examinations on two 6" diameter weldments, line No. 1004; RC 6" SI, elbow to pipe and pipe to valve.

No items of noncompliance or deviations were identified within the areas reviewed.

5. Data Review and Evaluations

Steam Generators "A" and "B" and Inservice Examinations

Review of the data files for the subject examination demonstrated that the Point Beach QA/QC and technical requirements were met. The data reviewed showed that the scope of the examination activity met requirements. The specified information was available for UT, PT, VT and ET.

No items of noncompliance or deviations were identified in the documents reviewed.

6. Material and Equipment Certification

During the inspection of the ISI, the inspector examined and verified the adequacy of calibration and certification documents relative to the following items.

a. UT Couplant (Glycerine) USP batch TB-12137-2.

b. Magnaflux materials, Penetrant batch 78B032, developer 7813082, and cleaner 78C056.

c. FM Tape Recorder, 2300S No. 0208.

d. Brush MK 220 Chart Recorder No. 0025.

e. EM 3300 Plug-IN No. 0135.

f. 5103 N/D 11 Storage Scope for above No. 0065.

g. Sonic FTS MART No. 774222.

h. Various transducers.

No items of noncompliance or deviations were identified above.

7. NDE Personnel Qualifications

The inspector reviewed the following qualifications in accordance with SNT-TC-1A.

Southwest Research Institute Personnel

| Name | Method | Yr. Code | Level |
|---|---|---|---|
| R. Spinks | UT-VT-PT-MT | 68 | II |
| R. Spinks | ET | 75 | I LTD |
| L. Villa | UT | 68 | II |
| L. Villa | PT-VT | 75 | II |
| L. Villa | MT | 68 | I |
| L. Villa | ET | 75 | I |
| J. Salam | UT-VT-MT | 75 | I LTD |
| E. Boyd | VT-PT | 68 | II |
| E. Boyd | MT-UT | 68 | I |
| E. Boyd | ET | 75 | I LTD |
| M. Ehnstorm | UT-MT-PT | 75 | I |
| M. Ehnstorm | VT | 75 | I LTD |
| D. Fournell | UT | 75 | II |
| D. Fournell | MT-PT-VT | 68 | II |
| J. Johnson | UT-VT | 75 | I |
| J. Johnson | MT-PT | 75 | I LTD |
| L. McFarland | ET | 75 | I LTD |
| L. McFarland | MT | 68 | I |
| L. McFarland | VT-UT-PT | 75 | II |

Westinghouse Personnel

| Name | Method | Yr. Code | Level |
|---|---|---|---|
| A. Terrell | MT-PT-VT | 75 | II |
| R. Hazen | ET | 75 | II |
| J. Paracat | ET | 75 | I |
| W. Hazett | UT-ET | 75 | I |
| R. Vollmer | ET | 75 | I |
| C. Swango | ET | 75 | II |
| J. Mills | ET | 75 | I |
| T. King | ET | 75 | II |
| G. Ferenchak | ET | 75 | I |
| J. Chapla | ET | 75 | II |
| W. Bolt | ET | 75 | I |
| V. Burke | ET | 75 | I |

No items of noncompliance or deviations were identified.

Exit Interview

The inspector met with site representatives (denoted in the Persons Contacted paragraph) at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection noted in this report.