

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

REGION III

Report No. 50-266/80-05; 50-301/80-04

Docket No. 50-266; 50-301

License No. DPR-24; DPR-27

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

Facility Name: Point Beach Nuclear Power Plant, Units 1 and 2

Inspection At: Point Beach Site, Two Creeks, WI

Inspection Conducted: March 6 and 20, 1980

Inspector: *K. D. Ward*
K. D. Ward

4/15/80

Approved By: *D. H. Danielson*
D. H. Danielson, Chief
Engineering Support Section 2

4/15/80

Inspection Summary

Inspection on March 6 and 20, 1980 (Report No. 50-266/80-05; 50-301/80-04)

Areas Inspected: QA/QC programs, implementing procedures, work activities, and records relative to the steam generators tube inspections. This inspection involved a total of six onsite inspection-hours by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

DETAILS

Persons Contacted

Wisconsin Electric Power Company (WEPCo)

- *G. Reed, Plant Manager
- *R. Link, Asst. to the Manager
- *J. Schweitzer, Nuclear Plant Engr.
- *F. Leman, Office Supervisor

Westinghouse Nuclear Service Division (W)

W. Woolfolk, Senior Field Service Engr.

Hartford Steam Boiler Engineering and Insurance Company

F. Roose, Authorized Nuclear Inspector (ANI)

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

*Denotes those present at the final exit interview March 20, 1980.

Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (266/79-14-01): IE Bulletin 79-17, Unit 1 and Unresolved Item (301/79-16-01) IE Bulletin 79-17, Unit 2 final response. The inspector reviewed the response and actions for IE Bulletin 79-17 for Units 1 and 2 and has no questions at this time.

Functional or Program Areas Inspected

1. General Information

- a. Unit 2 was shutdown because of tube leakage in the "A" steam generator (SG). The leakrate exceeded 500 gpd. Therefore, eddy current examination (ET) of the SG was required.
- b. Unit 1 was shutdown for eddy current examination in compliance with the NRC confirmatory order issued on November 30, 1979.
- c. Westinghouse nondestructive examination (NDE) personnel performed the ET on the SG tubes and Zetec Company provided the ET interpretation services.
- d. The ANI was the contracted third party for the SG ET.

2. Review of Program and Procedures

- a. The inspector reviewed the program and the following procedures for the SG inspection and repair as specified by the Point Beach Technical Specifications. The program and procedures were prepared in accordance with ASME Section XI, 1974 Edition, Summer 1975 Addenda.
 - . W, Control of Field Service Activities, OPR 610-3, Revision 1, August 31, 1979.
 - . W. Transportation, Storage, and Disposition of Explosives, MRS 2.3.2 GEN-11, Revision 1, December 30, 1978.
 - . W. Steam Generator Tube Removal (Series 44 and 51), MRS 2.3.2 Gen-12, Revision 0, December 14, 1979.
 - . W. Installation Procedure, Mechanical Plugs in 7/8" O.D. X .050" wall, Inconel Tubes, TS-SG-79-046, Revision 0, August 13, 1979.
 - . W, Installation and Removal of Temporary Nozzle Covers, MRS 2.2.2 GEN-2, Revision 3, July 31, 1979.
 - . W, Repair Plugging by Gas Tungsten Arc Welding, GTAW NDT-80, Revision 5, October 9, 1979.
 - . W, Tube/Hole Plugging Using Manual Gas Tungsten Arc Welding, NPT-23, Revision 5, February 23, 1976.
 - . W, Weld Repair of Steam Generator Tubes/Plugs, MRS 2.3.2 GEN-6, Revision 1, January 5, 1979.
 - . W. Explosive Plugging of a Tubesheet Hole From Which The Tube Has Been Removed, NPT-33, Revision 6, October 23, 1975
 - . W. Explosive Plugging of Steam Generator Tubes, MRS 2.3.2 GEN-9, Revision 2, August 31, 1979.
 - . W. Multifrequency Eddy Current Inspection on Steam Generator Tubing - Preservice and Inservice, MRS 2.4.2 GEN-23, Revision 0, September 17, 1979 and Revision 1, November 6, 1979.
 - . W, Examination for Steam Generator Tubes/Explosive Plugs Repaired by Welding per MRS 2.3.2 GEN-6, QAIP-1-VT, Revision 1, January 22, 1979.
 - . W, Dye Penetrant Examination, 84350JA, Revision 9, March 23, 1977.

W, Installation and Removal of Eddy Current Positioning Devices,
MRS 2.4.2 GEN-19, Revision 0, July 15, 1977.

No items of noncompliance or deviations were identified.

3. Equipment Certification

The inspector reviewed the following equipment certifications:

- a. 12 frequency plug in
- b. 12 mixer plug in
- c. Display module
- d. 511 storage scope
- e. Brush MK 220 chart recorder

No items of noncompliance or deviations were identified.

4. Personnel Certifications

The inspector reviewed the following personnel certifications:

a. Westinghouse NDE Personnel

<u>Name</u>	<u>ET</u>
W. Woolfolk	II
J. Mills	I
E. Nagy	II
J. Chapla	II
T. Pfarr	I
D. Tommarello	I
R. Hazen	II
J. Estel	II
G. Ferenchak	II

b. Zetec

E. McKee	II
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c. W Explosive Tube Welders

W. Woolfolk
J. Chapla
E. Nagy
C. Pfarr
D. Tommarello

No items of noncompliance or deviations were identified.

5. Observation of Work Activities

Unit 1

Approximately 1000 tubes were ET in each SG. The results of the ET are the following:

<u>"A" SG</u>		
<u>Tube</u>	<u>% Defect</u>	<u>Location</u>
R12C19	80	19-21" above tube end
R7C22	29/96	12-17" above tube end
R18C22	66	20" above tube end
R10C23	41	20" above tube end
R7C24	83	17-20" above tube end
R8C24	79	17-21" above tube end
R25C45	69	12-20" above tube end
R20C48	85	21" above tube end
R9C49	90	21" above tube end
R17C50	85	19" above tube end
R19C50	97	11" above tube end
R20C50	97	11" above tube end
R12C59	87	21" above tube end
R12C61	83	17" above tube end
R14C63	83	19" above tube end
R15C66	60	18" above tube end
R20C46	91	19" above tube end
R25C43	73	17" above tube end
R15C28	Undefinable Indications	21" above tube end
R28C34	Undefinable Indications	18-20" above tube end
R28C35	Undefinable Indications	17" above tube end
R11C46	Undefinable Indications	12-21" above tube end
R29C52	Undefinable Indications	14" above tube end
k8C27	Undefinable Indications	15-20" above tube end
<u>"B" SG</u>		
<u>Tube</u>	<u>% Defect</u>	<u>Location</u>
R18C26	75	18" above tube end
R13C26	73	21" above tube end
R13C33	71	20" above tube end
R6C34	91	11" above tube end
R20C35	68	21" above tube end
R8C37	89	5" above tube end
R19C37	58	12" above tube sheet
R10C41	70	21" above tube end
R30C41	47	21" above tube end

<u>Tube</u>	<u>% Defect</u>	<u>Location</u>
R30C42	48	21" above tube end
R22C46	76	15" above tube end
R24C48	84	2" above tube end
R20C48	85	
R20C48	85	21" above tube end
R25C49	84	5" above tube end
P20C51	99	16" above tube end
R23C54	86	4-21" above tube end
R23C57	56	17" above tube end
R21C58	83	21" above tube end
R2C72	92	3" above tube end
R14C59	75	21" above tube end
R21C63	62	21" above tube end
R12C67	66	21" above tube end
R25C55	74	15" above tube end
R26C53	86	18" above tube end
R30C43	Undefinable Indications	21" above tube end
R22C63	Undefinable Indications	21" above tube end
R22C64	Undefinable Indications	20" above tube end

R23C44 leaking tube, no defect identified.

Explosive tube plugging of both steam generators was performed.

Tube pulling of the following three tubes in the "B" SG, at the insistence of the NRC, was being performed at the time of the inspector's exit.

R19C37 with an old 58% defect located one-half inch above the tubesheet.

R30C41 with a 47% deep crevice defect that has grown since August, 1979.

R26C53 with a 86% deep crevice defect that has grown since December, 1979, and is similar to other undefinable indications.

Unit 2

"A" SG

Unit 2 was taken off line at 0225 hours on February 28, 1980, following confirmation of primary-to-secondary leakage in the "A" steam generator. The leak had begun as a slight indication about noon the previous day, and gradually increased to 70 gpd (estimated) by 2200, February 28. The decision was made to shut down at 2340 hours upon a further large increase in the air ejector radiation monitor reading. A static head leak check identified the leaking tube at position R18C37 and a subsequent eddy current examination

placed the defect at eight to ten inches above the tube end, thirteen to fifteen inches deep in the crevice of the tubesheet. The previously scheduled refueling outage steam generator eddy current examination was performed during the outage. The extent of the examination was expanded during the outage as six tubes with greater than 50% through-wall indications, in addition to the leaking tube, were discovered in the "A" steam generator. Eighteen tubes with indications between 40 and 49% were also found. The "A" steam generator hot leg program was first expanded by a 2S sample then to 100% as required by the Technical Specifications.

The 25 defective or degraded tubes in the "A" steam generator were explosively plugged. The leaking tube was mechanically plugged on the inlet side for future consideration of tube removal.

Eight tubes which exhibited 39% defect indications were also explosively plugged as a conservative measure. Two tubes, R22C62 and R9C54, also with 39% defects, were plugged on the cold leg only.

The ET results are the following:

<u>Tube</u>	<u>Defect</u>	<u>Location</u>
R21C58	42	Top of tubesheet*
R10C59	39	Top of tubesheet
R20C59	41	Top of tubesheet
R21C59	39	Top of Tubesheet
R20C61	42	Top of tubesheet
R20C63	51	Top of tubesheet
R21C63	56	Top of tubesheet
R10C64	42	Top of tubesheet
R21C64	46	Top of tubesheet
R19C65	51	Top of tubesheet
R18C68	39	Top of tubesheet
R12C73	43	Top of tubesheet
R34C73	43	First support plate
R11C74	39	Top of tubesheet
R07C21	39	Top of tubesheet
R13C19	40	Top of tubesheet
R12C31	41	Top of tubesheet
R13C34	43	Top of tubesheet
R14C34	57	Top of tubesheet
R14C35	42	Top of tubesheet
R15C35	44	Top of tubesheet
R13C36	42	Top of tubesheet
R14C36	39	Top of tubesheet
R10C39	45	Top of tubesheet
R13C41	56	Top of tubesheet
R18C37	100	3" above tube end

<u>Tube</u>	<u>Defect</u>	<u>Location</u>
R28C42	45	Top of tubesheet
R20C43	39	Top of tubesheet
R12C44	41	Top of tubesheet
R20C47	39	Top of tubesheet
R21C57	43	Top of tubesheet
R22C57	42	Top of tubesheet
R10C58	52	Top of tubesheet

*The notation "top of tubesheet" refers to defect indications which have been separated from the top of tubesheet eddy current signal using multifrequency techniques. Twenty-six of these top of tubesheet signals using a 400 khz eddy current frequency have been present since 1974. The recent development of the multi-frequency eddy current technique has allowed discrimination of defect indications from the top of tubesheet signal. Evaluation of all data available at this time indicates that these top tubesheet defect indications have been present but undetectable since 1974.

"B" SG

The inspector observed ET on "B" SG Unit 2 being performed.

An 800 psi hydrostatic test of the "B" steam generator revealed no leaking tubes or plugs. Approximately 700 tubes in each of the hot and cold legs of the "B" steam generator were examined and one cold leg tube was found to have a 41% defect indication, 1-1/4" above tubesheet R7C36. The one 41% degraded tube was explosively plugged.

No items of noncompliance or deviations were identified.

6. Data Review and Audit

The inspector reviewed the WEPCo QA audit of W.

Review of the data files for the ET of the SG 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.

No items of noncompliance or deviations were identified.

Exit Interview

The inspector met with site representatives at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection noted in the report.