

**FORM NIS-1, OWNER'S DATA REPORT
FOR INSERVICE INSPECTIONS
AS REQUIRED BY THE PROVISIONS OF THE ASME CODE CLASS RULES**

1. OWNER - WISCONSIN PUBLIC SERVICE CORPORATION, 700 NORTH ADAMS,
P.O. BOX 19001, GREEN BAY, WISCONSIN 54307-9001
2. PLANT - KEWAUNEE, N490 HIGHWAY 42, KEWAUNEE, WISCONSIN 54216-
- 9510
3. PLANT UNIT - NO. 1
4. OWNER CERTIFICATE OF AUTHORIZATION - N/A
5. COMMERCIAL SERVICE DATE - JUNE 16, 1974
6. NATIONAL BOARD NUMBER FOR UNIT - N/A
7. COMPONENTS INSPECTED -

<u>COMPONENT OR APPURTENANCE</u>	<u>MANUFACTURER OR INSTALLER</u>	<u>MANUFACTURER OR INSTALLER SERIAL NO.</u>	<u>STATE OR PROVINCE NO.</u>	<u>NATIONAL BOARD NO.</u>
Reactor Vessel	Combustion Engineering	CE69202	U11480	21010
Pressurizer	Westinghouse	1151	U11402	68-23
Steam Generator 1A	Westinghouse	1141	U11400	68-28
Steam Generator 1B	Westinghouse	1142	U11401	68-29
Excess Letdown Heat Exchanger 1A	Sentry	3996-5E	U11407	364
Excess Letdown Heat Exchanger 1B	Sentry	3996-6E	U11408	365
Class 1 Piping	Texas Pipe Bending	---	---	---
Reactor Coolant Pump 1A	Westinghouse	1A-1-618J871-G01	---	---
Reactor Coolant Pump 1B	Westinghouse	1B-2-618J871-G02	---	---

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Residual Heat Exchanger 1A	Joseph Oat and Sons	1817-1E	U11046	344
Residual Heat Exchanger 1B	Joseph Oat and Sons	1817-1F	U11424	345
Refueling Water Storage Tank	General American Transportation Co	C-8297/1969	---	---
Class 2 Piping	Texas Pipe Bending	---	---	---
Accumulator Tank 1A	Wyatt	H-5645-69	U11397	---
Accumulator Tank 1B	Wyatt	H-5644-69	U11398	---
Letdown Heat Exchanger	Atlas	1206	U11405	1031

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Diesel Generator 1A Cooling Water Exchangers (2)	Young Radiator	2448557 & 2448568	---	---
Reactor Coolant Pump 1B Lube Oil Cooler	Perfex Corporation	2-107327	---	5104
Class 3 Piping	Texas Pipe Bending	---	---	---
Containment Fan Cooler 1B	Joy Manufacturing and American Air Filter	GF14399	---	---
Safety Injection Pump APSI-1A	Bingham Pump	290696	---	---
Safety Injection Pump APSI-1B	Bingham Pump	290697	---	---

FORM NIS-1 (back)

8. Examination Dates 8-10-92 to 4-17-93 9. Inspection Interval from 6-16-84 to 6-16-94

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. Reference Tab C

11. Abstract of Conditions Noted Reference Tab B and Tab F

12. Abstract of Corrective Measures Recommended and Taken Reference Tab B and Tab F

Utilization of ASME Boiler and Pressure Vessel Code: Code Case N-498

We certify that the statements made in this report are correct and the examinations and corrective measures taken conform to the rules of the ASME Code, Section XI.

Date July 1, 19 93 Signed Wisconsin Public Service By Mark L. Mandel
Owner

Certificate of Authorization No. (if applicable) N/A Expiration Date N/A

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of WISCONSIN and employed by HARTFORD Steam Boiler of Hartford, CT have inspected the components described in this Owners' Data Report during the period Aug 10th 1992 to April 17th 1993, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owners' Data Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owners' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date July 2 19 93

Roger M. Quinn
Inspector's Signature

Commissions NB7741 Wis 38
National Board, State, Province and No.

WISCONSIN PUBLIC SERVICE CORPORATION
KEWAUNEE NUCLEAR POWER PLANT
2ND OUTAGE; 3RD PERIOD; 2ND INTERVAL
1993
EXAMINATION SUMMARY

INTRODUCTION

An Inservice Examination Program was performed at the Westinghouse EMD-Cheswick Facility, Pennsylvania on August 10, 1992 and at the Kewaunee Nuclear Power Plant on November 12, 1992, February 4, 1993 and from March 4, 1993 thru April 17, 1993 by Westinghouse Electric Corporation-Dynacon Systems, Inc. and Wisconsin Public Service Corporation-Kewaunee Nuclear Power Plant Examination Personnel.

Examinations were performed to satisfy the requirements of:

- o ASME Boiler and Pressure Vessel Code Section XI 1980 Edition up to and including Winter 1981 Addenda
- o ASME Boiler and Pressure Vessel Code Section XI 1986 Edition for IWF-2500-1 VT-3 Examinations
- o United States Nuclear Regulatory Commission, Nuclear Regulatory Guide 1.14 Rev 1

The Examination Program Plan located under Tab C was prepared by Wisconsin Public Service Corporation-Kewaunee Nuclear Power Plant for the 2nd Outage; 3rd Period; 2nd Interval as identified in the 2nd Ten Year Inservice Inspection Plan (1984-1994).

The following items were examined (Reference Tab C):

- o Pressurizer: Circumferential and Longitudinal Welds and Integrally Welded Support Attachment
- o Steam Generator A: Channel Head to Tubesheet Weld and Shell Circumferential Welds
- o Steam Generator B: Mainsteam Nozzle to Vessel Weld and Mainsteam Nozzle Inside Radius
- o Class 1 and Class 2 Piping Welds
- o Class 1 Piping Flange Bolting
- o Class 1 Integrally Welded Attachments
- o Reactor Coolant Pump B: Integrally Welded Attachments, Seal Housing Bolts and Flywheel

- o Class 1 Valve Bonnet Bolting
- o Residual Heat Exchanger 1A: Shell and Circumferential Welds
- o Residual Heat Exchanger 1B: Integrally Welded Attachments
- o Letdown Heat Exchanger: Shell and Head Circumferential Welds
- o Class 3 Component and Piping Supports Integral Attachments
- o Class 1, Class 2 and Class 3 Component and Piping Supports and Hangers
- o Class 1 System Pressure Test
- o Class 2 System Inservice and Functional Pressure Tests
- o Re-examination of specific repaired indications recorded during the 1992 Refueling Outage
- o Additional examinations to satisfy requirements of ASME Boiler and Pressure Vessel Code Section XI 1980 Edition up to and including Winter 1981 Addenda, Paragraphs IWC-2430 and IWF-2430

The examinations performed were in accordance with an approved Examination Program Plan located under Tab C of the Final Report. Examination Procedures were approved prior to the start of examinations and certification documents relative to personnel, equipment and materials were reviewed and determined to be satisfactory.

Witnessing and surveillance of the examinations were conducted by: United States Nuclear Regulatory Commission, Hartford Steam and Boiler Inspection and Insurance Company and Wisconsin Public Service Corporation Quality Assurance Department.

RESULTS

Examinations resulted with the following Recordable Indications being noted on the basis of procedure recording criteria, which are generally more critical than specified ASME Boiler and Pressure Vessel Code Section XI Acceptance Standards.

- o One (1) Recordable Indication (2 linears classified as One Non Aligned Parallel Indication) on drawing WPS-1-4101 (M1145) Integrally Welded Attachment 4WS (RSI-H57) was recorded during Liquid Penetrant Examination. This indication was unacceptable by ASME Boiler and Pressure Vessel Code Section XI 1980 Edition up to and including Winter 1981 Addenda Table IWB-3514-3 Acceptance Standards. This indication was removed by grinding, the area re-welded and re-examined by Liquid Penetrant and found to be acceptable.

- o One (1) Recordable Indication (9/16" Curvilinear) on drawing WPS-2-2200 (M1165) Circumferential Weld 30 (MS-W80) was recorded during Magnetic Particle Examination. This indication was unacceptable by ASME Boiler and Pressure Vessel Code Section XI 1980 Edition up to and including Winter 1981 Addenda Table IWB-3514-2 Acceptance Standards. This indication was removed by light grinding until a 1/16" Linear Indication remained which is acceptable by ASME Boiler and Pressure Vessel Code Section XI 1980 Edition up to and including Winter 1981 Addenda Table IWB-3514-2 Acceptance Standards.
- o One (1) Recordable Indication (3/32" Linear) on drawing WPS-2-2520 (M1170) Circumferential Weld 22 (RHR-W87) was recorded during Liquid Penetrant Examination. This indication is acceptable to ASME Boiler and Pressure Vessel Code Section XI 1980 Edition up to and including Winter 1981 Addenda Table IWB-3514-3 Acceptance Standards.
- o Thirty One (31) Recordable Indications on drawings WPS-1-3100 (M1201), A-22A and A-22D; WPS-1-4108 (M1148), 6SH(RTD-H5); WPS-1-4212 (M1151), 1SH & 1WS(RSI-H7); WPS-1-4213 (M1157), LVC-428 (LD-3); WPS-1-4504 (M1161), 20SH(RC-H20); WPS-2-2100 (M1164), 3R & 3WS(Constraint 1809); WPS-2-2100 (M1165), 8WS & 8R(MS-H2121); WPS-2-2200 (M1167), 4R & 4WS(Constraint 50); WPS-2-2201 (M1168), 5R & 5WS(Support 1521A & B); WPS-2-2201 (M1168), FDW-H2143 (RR-961); WPS-3-3400 (M1177), 19R(SW-H4A) and 21R(SW-H7); WPS-3-3600 (M1178), SW-H92, SW-H150 and SW-H214; WPS-3-3600 (M1181), SW-H131; WPS-3-3601 (M1179), 12H(SW-H89), 13H(SW-H118) and SW-H401; WPS-3-3801 (M1189), SW-H103 and SW-H103A; M891-2, FDW-H53, FDW-H53A, FDW-H54 and FDW-H58; and M922, SW-H97, SW-H99, SW-H101, SW-H102 and SW-H132 were recorded during Visual Examination of Class 1, Class 2 and Class 3 Component and Piping Supports and Class 1 Valves. These indications were (1) evaluated and accepted; or accepted and scheduled for repair (2) repaired, re-examined and accepted; by Wisconsin Public Service Corporation Engineering, Maintenance, Quality Control and Inservice Inspection Groups, Westinghouse Electric Corporation Dynacon Systems Inc. and Authorized Nuclear Inservice Inspector.
- o Twenty Seven (27) Recordable Indications on Flow Diagrams XK-100-10, RC-100B, RC-24031-1, FT-416, Seal Table; XK-100-28, Swagelok by SI-211, SI-9B, SI-20A, SI-202A, NG-108A, SI-101B, SI-202B, SI-24037-5, SI-24037-1, SI-10A, SI-15A, SI-11B, SI-48 and SI-120; XK-100-29, SI-8A, FT-929 and FE-924; XK-100-44, RC-412 and RC-451; and M205, FW-12A, FW-8B, FW-71B and FW-9B were recorded during Visual Examination of the Class 1 System Pressure Test and the Class 2 System Inservice and Functional Pressure Tests. These Indications were (1) evaluated and accepted or (2) repaired, re-examined and accepted; by Wisconsin Public Service Corporation Maintenance, Quality Control, Operations, Health Physics and Inservice Inspection Groups, Westinghouse Electric Corporation Dynacon Systems Inc. and the Authorized

EDDY CURRENT EXAMINATION

**WISCONSIN PUBLIC SERVICE CORPORATION
KEWAUNEE NUCLEAR POWER PLANT
UNIT 1**

STEAM GENERATORS A & B

MARCH 1993

SUMMARY OF RESULTS

An eddy current examination was performed at the Kewaunee Nuclear Power Plant in March, 1993 on Steam Generators A and B. The examination was performed using the Zetec MIZ-18A Digital Acquisition System and EddyNet Software.

The steam generators were examined in parallel from both the inlet and outlet sides using the SM-10 remote fixtures. Sleeved tubes were examined from the outlet side from the top of the sleeve to the outlet tube end using 0.720" or 0.700" diameter probes. Some of the tight radius low row tubes (Rows 2 and 3) were examined through the sleeve to the top support with a 0.640" diameter wide groove probe. All non-sleeved tubes were examined from the inlet with a 0.720" diameter probe full length or to the top support. The combination of all examinations provided complete examination of the tubing either full length or to the top of the sleeve.

Steam Generator A

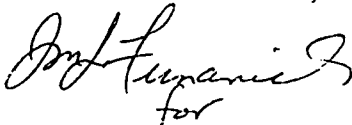
There were 3146 tubes examined in Steam Generator A with a bobbin coil probe. All Row One (1) U-bends in tubes that were not plugged and a few selected Row Two (2) U-bends were examined with a motorized rotating pancake coil (MRPC) probe. Also 225 sleeves were examined with a crosswound probe. In addition to these exams, all intersections that were reported with non-quantifiable indications were examined with a three-coil MRPC probe. This resulted in nine (9) tubes with pluggable indications.

STEAM GENERATOR B

There were 3134 tubes examined in Steam Generator B with a bobbin coil probe. All Row One U-bends that were not plugged and a few selected Row Two U-bends were examined with a motorized rotating pancake coil (MRPC) probe. Also 225 sleeves were examined with a crosswound probe. In addition to these exams, all intersections that were reported with non-quantifiable indications were examined with a three-coil MRPC probe. This resulted in nine (9) tubes with pluggable indications. Three (3) tubes were selected as pull-tube candidates. All three tubes have indications at the Number 1 and 2 cold leg support plates. These three tubes were examined with a three-coil MRPC probe from above the second cold leg support plate to the tube end.

During the examination the voltages for the bobbin examination were recorded for each channel head. The method used and the recorded voltages are included in this report.

CONAM NUCLEAR, INC.



for
Mike Chambers
Data Analyst, Level III

Summary of Incore Thimble Eddy Current Results

In response to NRC Bulletin 88-09, WPSC committed to inspecting the incore thimbles at the KNPP during the 1993 and 1998 refueling outages and more frequently thereafter. Results of the inspection with any corrective action or change in inspection frequency were to be reported to the Nuclear Regulatory Commission via the annual ISI report.

The incore thimbles were eddy current inspected during the 1993 refueling outage. Greater than expected wear was found on approximately half of the thimbles. Based on past results, wear was expected to be less than 30%. A summary of the inspection results are shown below.

<u>Wear %</u>	<u>No. of Thimbles</u>
10-19	6
20-29	14
30-39	12
40-49	3

Note: One thimble could not be inspected due to blockage.

All of the indicated wear was at the point the thimble tube enters the fuel assembly. Through review of fuel drawings and discussion with the fuel vendor, it was determined that a wear point had existed at the lower tie plate-instrument tube interface of the fuel assembly. The fuel drawings indicated that the maximum theoretical wear this interface could cause is 40 to 50%.

Prior to the KNPP's last fuel cycle the fuel vendor had taken actions to eliminate this wear point. As corrective action has already been taken to eliminate the wear point and the maximum theoretical wear is less than the acceptance criteria of 60% no further action was required during the 1993 outage. However, WPSC will reinspect the thimbles during the 1994 refueling outage to ensure that the wear has not increased beyond expected values. Based on the results of the 1994 inspection, a revised inspection schedule will be determined and reported as part of the 1994 ISI Summary Report submittal. The thimble that could not be inspected due to blockage will be isolated as no wear assessment could be made.