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SUBJECT: Forwards Kewaunee Nuclear Power Plant 1994 ISI summary rept  
for 3rd outage, 3rd period, 2nd interval ISI exams which  
occurred 940402-0508.

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August 5, 1994

10 CFR 50.55a

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Ladies/Gentlemen:

Docket 50-305  
Operating License DPR-43  
Kewaunee Nuclear Power Plant  
1994 Inservice Inspection (ISI) Summary Report

As required by Federal Regulation 10 CFR 50.55a and Wisconsin Administrative Code, Chapter ILHR 42, various ISI examinations were performed prior to and during the most recent refueling outage which occurred April 2, 1994 through May 8, 1994. This refueling outage constituted the third inspection year of the 3rd period of the 2nd interval.

Paragraph IWA-2400(c) of the 1980 Edition of Section XI allows an inspection interval to be decreased or extended (but not cumulatively) by as much as one year. Wisconsin Public Service Corporation (WPSC) has decided to extend the Kewaunee Nuclear Power Plant's (KNPP's) 2nd ten year interval by one year (from June 16, 1984 to June 16, 1995) to perform the reactor vessel examination and the completion of the class 3 system pressure tests. These examinations as well as the commencing first period, 3rd ten year interval (June 16, 1994 through June 16, 2004) ISI examinations will be performed during the 1995 refueling outage, tentatively scheduled from April 1, 1995 through May 19, 1995. The examinations will be performed to satisfy either the requirements of the remaining 2nd ten year interval or the first period, 3rd ten year interval. The examinations will not be credited toward both intervals.

The examination requirements for this inspection year are contained in the 1980 Edition through Winter 1981 Addenda of Section XI except that the visual examination method specified in Table IWF-2500-1 and corresponding definition of VT-3 examination are taken from the 1986 Edition of Section XI. These requirements were implemented in accordance with the "Kewaunee Nuclear Power Plant ISI Plan and Schedule - Second Ten Year Interval 1984-1994," KNPP Plant Technical Specifications (TS), and nondestructive (NDE) procedures.

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This past year, various Class 1, Class 2, and Class 3 components and their supports were examined which include:

- Pressurizer Nozzle Inside Radius Section (Visual Examination) and Manway Bolting (Visual Examination);
- Class 1 Integrally Welded Attachments (Surface Examination);
- Class 1 and Class 3 Component and Piping Supports and Hangers (Visual Examination);
- Class 1 System Pressure Test;
- Class 2 System Inservice and Functional Pressure Tests;
- Re-examination specific repaired/monitored indications recorded during the 1993 Refueling Outage; and,
- Eddy Current Testing of Steam Generators in accordance with KNPP TS.

In addition, the following examinations were performed in excess of the Code requirements:

- Radiography of Loop A and Loop B Feedwater Nozzle-to-Pipe and Pipe-to-Pipe Weld for verification of integrity and detection of cracking;
- Visual Examination of Class 2 Valve Bonnet Bolting for Erosion/Corrosion per Nuclear Regulatory Commission (NRC) Generic Letter (GL) 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Coolant Boundary Components in PWR Plants;"
- Visual Examination of Reactor Vessel Internals for NEIL Boiler and Machining for Loss Prevention Inspections and Credits;
- Reactor vessel incore thimbles were Eddy Current inspected in response to US NRC Bulletin 88-09;
- Portions of the service water system were radiographed for detection of pits, sand, and/or zebra mussel intrusion and corrosion; and
- Balance-of-plant piping subject to erosion/corrosion was examined by radiographic and ultrasonic techniques.

The Code required examinations did not result in indications that exceeded Table IWX-2500-1 acceptance criteria of Section XI. However, the examinations resulted in the following indications being reported on the basis of ISI procedure recording criteria, which is generally more restrictive than Section XI acceptance criteria. All of these indications have been evaluated and dispositioned (accepted, repaired/replaced, and/or monitored).

- One (1) Recordable Indication was noted during a Surface Examination on a Class 1 Integrally Welded Attachment.
- One (1) Recordable Indication was noted visually during the performance of a Surface Examination on a Class 1 Integrally Welded Attachment. The visual indication was repaired by filing and welding to return the base metal to above minimum wall.
- One (1) Recordable Indication was noted during a Radiography Examination on a Class 2 Pipe Weld.
- Thirty-one (31) Recordable Indications were recorded by VT-1 and VT-3 Visual Examinations. Sixteen of the 31 indications were on the Class 1 Pressurizer Manway Bolting and fifteen were on Class 1 and Class 3 Component and Piping Supports and Hangers.
- Twenty-one (21) Recordable Indications were recorded by VT-2 Visual Examinations during the Class 1 System Pressure Test and the Class 1 System Inservice and Functional Pressure Tests.

The 1994 Refueling Outage Steam Generator Tube Eddy Current Inspection resulted in the plugging of seventy-seven (77) tubes in Steam Generator A and twenty-eight (28) tubes in Steam Generator B. Installation of these plugs results in a total of three hundred twenty-eight (328) plugged tubes in Steam Generator A and two hundred ninety-four (294) plugged tubes in Steam Generator B. There were no sleeves installed during this refueling outage. To date, a total of 2188 sleeves have been installed in Steam Generator A, with 2116 sleeves remaining in service. A total of 2123 sleeves have been installed in Steam Generator B, with 2083 sleeves remaining in service. Based on the number of installed plugs and sleeves, the resulting equivalent plugging percentage is 12.39% in Steam Generator A and 11.35% in Steam Generator B. The majority of the plugs and sleeves were installed as a result of degradation believed to have been caused by intergranular attack and outside diameter stress corrosion cracking. Details of the 1994 steam generator examination results are included in a letter from C. A. Schrock (WPSC) to the NRC dated May 23, 1994, regarding Reportable Occurrence 94-004.

One (1) leaking Westinghouse plug was identified during a tubesheet visual scan prior to the Eddy Current examination. This plug contained a plug-in-plug (PIP) assembly and is made from a heat of material believed to be susceptible to service induced primary side cracking. The PIP

and plug were removed and a welded tube plug was installed. In accordance with the requirements of Wisconsin Administrative Code, Chapter ILHR 42, the welded repair was inspected/accepted by the Authorized Nuclear Inservice Inspector.

In accordance with the requirements of Wisconsin Administrative Code, Chapter ILHR 42, welded repairs and alterations are approved/inspected by an authorized inspector and a record (Form SB-190) of each has been provided, as required, to the State of Wisconsin. Following is a summary, as required by ASME Boiler and Pressure Vessel Code Section XI 1980 Edition up to and including Winter 1981 Addenda, of repairs and replacements performed following the 1993 Refueling Outage and during the 1994 Refueling Outage by grinding, buffing, filing, cutting, or welding on Class 1 and Class 2 Pressure Boundary.

Component	Class	Reference	Repair/Replacement Method
3/4" Valve PR-50A	1	XK-100-10	Cutting and Welding of Replacement Valve and Piping
3" Pressurizer Spray Piping near Hanger RC-H22	1	XK-100-10	Filing and Welding of Piping Base Metal
Residual Heat Removal Pump 1B Impeller	2	XK-100-18	Welding on Impeller (Returned to Stock)
Residual Heat Removal Pump 1A	2	XK-100-18	Cutting and Welding of Pump Casing
6" RHR Pipe Weld	2	XK-100-18	Cutting and Welding of Replacement Pipe Weld
2" valve CVC-205B	1	XK-100-35	Cutting and Welding of Replacement Valve
2" Valve CVC-206A	1	XK-100-35	Cutting and Welding of Replacement Valve
2" Valve BT-2A	2	M203	Cutting and Welding of Replacement Valve
2" Valve BT-2B	2	M203	Cutting and Welding of Replacement Valve
2" Valve BT-3A	2	M203	Cutting and Welding of Replacement Valve

Component	Class	Reference	Repair/Replacement Method
2" Valve BT-3B	2	M203	Cutting and Welding of Replacement Valve
6" Valve SD-3A	2	M203	Welding in Spots of Seat to Body
1" Piping upstream of Valve MS-45A	2	M203	Grinding and Welding of Piping
¾" Valve BT-40B	2	M203	Cutting and Welding of Replacement Valve
1" Valve FW-80B	2	M205	Cutting and Welding of Valve
16" Valve FW-13B	2	M205	Welding on Valve Internals
½" Internal Containment Spray Piping	2	M217	Cutting and Welding on Piping
¾" Valve ICS-55A and ¾" Piping	2	M217	Cutting and Welding of New Valve and Piping
¾" Valve ICS-55B and ¾" Piping	2	M217	Cutting and Welding of New Valve and Piping
4" Flanges (4) Internal Containment Spray Piping	2	M217	Cutting and Welding of 4 new Flanges

Please find attached a copy of the following documentation which summarizes the results of the KNPP 1993 refueling outage inservice inspection:

1. NIS-1 Form for 3rd Outage, 3rd Period, 2nd Interval
2. Summary Report for 3rd Outage, 3rd Period, 2nd Interval
3. Summary of Eddy Current of Steam Generator Tubes for 3rd Outage, 3rd Period, 2nd Interval
4. Summary of Incore Thimble Eddy Current Results

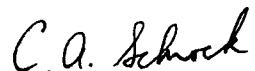
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August 5, 1994

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The complete reports of these examinations are on file and available for review in the QA-QC Records Vault at the Kewaunee Nuclear Power Plant. If you desire a copy of any of these reports, please contact the Kewaunee Plant Manager and a copy will be forwarded to you upon request.

Sincerely,



C. A. Schrock  
Manager - Nuclear Engineering

RLF/jmf

Attach.

cc - US NRC - Region III  
US NRC - Senior Resident Inspector