

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-305/84-09(DRP)

Docket No. 50-305

License No. DPR-43

Licensee: Wisconsin Public Service Corporation  
P.O. Box 19002  
Green Bay, WI 54307-9002

Facility Name: Kewaunee Nuclear Power Plant

Inspection At: Kewaunee Site, Kewaunee, WI

Inspection Conducted: June 18-22, 25-29, July 5-6, 9-13, 16-20,  
23-27, 30-31, August 1-3, 6-10, 1984

Inspector: R.L. Nelson

Approved by: *I.M. Jackiw*  
I.M. Jackiw, Chief  
Reactor Projects Section 2B

*8-17-84*  
Date

Inspection Summary

Inspection on June 18-22, 25-29, July 5-6, 9-13, 16-20, 23-27, 30-31,  
August 1-3, 6-10, 1984 (Report No. 50-305/84-09(DRP))

Areas Inspected: Routine, unannounced inspection by resident inspector of licensee action on previous inspection findings; operational safety; maintenance; surveillance; independent inspection; licensee event reports; design changes and modifications; and operating events. The inspection involved a total of 103 inspector-hours by one inspector including 16 inspector-hours onsite during off-shifts.

Results: No items of noncompliance or deviations were identified.

## DETAILS

### 1. Persons Contacted

- \*C. R. Steinhardt, Plant Manager
- \*M. C. Marchi, Technical Supervisor
- \*R. W. Lange, Superintendent, Maintenance
- K. H. Evers, Superintendent, Operations
- W. J. Richmond, Plant Services Superintendent
- D. W. McSwain, Assistant Superintendent, Instrument and Control
- M. Kwitek, Reactor Supervisor

The inspectors also talked with and interviewed members of the Operations, Maintenance, Health Physics, Instrument and Control, Quality Control, and Security Groups.

\*denotes those attending one or more exit interviews.

### 2. Action On Previous Inspection Findings

- a. (CLOSED) Noncompliance (305/80-09-01(DETI)): Failure to have a documented program for training and qualifying plant maintenance quality control personnel. Administrative Control Directive 9.6, "QC Qualification and Training", dated October 20, 1980, defines the qualification and training requirements for individuals engaged in quality control functions.
- b. (CLOSED) Unresolved Item (305/80-09-02(DETI)): Discrepancies noted during examination of Steam Generator support bolting. During the examination it was determined that thirty-three of forty-eight bolts had less than the design thread engagement length, of the thirty-three short bolts, three were found to have inadequate thread engagement length for developing the ultimate bolt capacity. The licensee had an analysis performed by Fluor Power Services, Inc., of the as-found and as-left bolting configurations. The analysis results indicated that the safety criteria as stipulated in the Final Safety Analysis Report (FSAR) were met. Following their review of the bolting analysis, the Division of Licensing, NRR, and Division of Reactor Operations, IE, concurred that the as-left bolting configurations met the FSAR design criteria and, therefore, was acceptable.

Reference correspondence is:

- (1) Letter from E. R. Mathews, WPSC to J. G. Keppler, NRC, June 20, 1980.
- (2) Letter from E. R. Mathews, WPSC to J. G. Keppler, NRC, August 5, 1980.

- (3) Letter from E. R. Mathews, WPSC to J. G. Keppler, NRC, May 29, 1981.
  - (4) Letter from E. R. Mathews, WPSC to J. G. Keppler, NRC, September 10, 1981.
  - (5) Memorandum from G. Lainas, NRC to E. L. Jordan, NRC, July 7, 1980.
  - (6) Memorandum from R. A. Hermann, NRC to E. L. Jordan, NRC, July 16, 1980.
- c. (CLOSED) Unresolved Item (305/80-24-02(DETI)): Failure to have all non-smoking areas posted with "No Smoking" signs. "No Smoking" signs have been placed at access points to all non-smoking areas.
  - d. (CLOSED) Unresolved Item (305/80-24-07(DETI)): No contractor training is provided in fire protection administrative controls. The licensee requires viewing of video tapes which address; identification of non-smoking areas; all areas which require the issuance of an Ignition Control Permit for cutting, welding, or grinding; requirements of the Ignition Control Permit; and handling of portable fire extinguishers.
  - e. (CLOSED) Open Item (305/82-13-03(DPRP)): Safety Class 2 Containment Cooling Fan Unit (CCFU) ducting. Design Change Request No. 1291 was implemented during the 1984 refueling outage which upgraded to Safety Class 1 all active and passive components of the CCFU's required to function for mitigation of events discussed in the FSAR.

### 3. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with operators throughout the inspection period. The inspector verified the operability of selected safety-related systems, reviewed tagout records and verified proper return to service of affected components. Tours of the auxiliary and turbine building were conducted. During these tours, observations were made relative to equipment condition, fire hazards, fire protection, adherence to procedures, radiological control and conditions, housekeeping, security, tagging of equipment, ongoing maintenance and surveillance, containment integrity, and availability of safety-related equipment.

During the inspection period, the inspector walked down the accessible portions of the auxiliary feedwater, fire protection, service water, emergency diesel generator, high head safety injection, containment spray, residual heat removal, component cooling, spent fuel pit cooling and radiation monitoring systems to verify operability.

No items of noncompliance or deviations were identified.

#### 4. Monthly Maintenance Observation

Station maintenance activities of safety related systems and components listed below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with technical specifications.

The following items were considered during this review: the limiting conditions of operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; parts and materials used were properly certified; radiological controls were implemented; and fire prevention controls were implemented.

The following maintenance activities were observed/reviewed:

| <u>MWR No.</u> | <u>Activity</u>   |
|----------------|---|
| 26793          | Boric Acid Heat Trace Circuit No. 124 Controlling At High Temperature - Clamped temperature controlling sensors to piping |
| 26906          | Containment Personnel Airlock Outer Door Excessive Leakage - Reversed seals   |
| 27019          | Excessive Seal Leakage 1B Charging Pump - Installed new plungers, "O" rings, and packing                                  |
| 27094          | Increased Thermal Overload Settings For Containment Cooling Fan Motors  |
| 27115          | Bistable FC 465A For High Steam Flow Outside Of Tolerance - Recalibrated bistable   |

No items of noncompliance or deviations were identified.

#### 5. Monthly Surveillance Observation

The inspector reviewed/observed the following Technical Specification required surveillance testing:

| <u>Surveillance Procedure</u> | <u>Test</u>                                    |
|-------------------------------|--|
| 36-017A                       | Pressurizer Level Transmitter Calibration      |
| 34-145A                       | RHR Discharge Pressure Transmitter Calibration |

|          |   |
|----------|---|
| 33-054AA | Safety Injection Accumulator Level<br>Calibration       |
| 45-50.18 | Radiation Monitor Channel R-18 Calibration              |
| 45-49.12 | Radiation Monitoring Systems Test Channel R-12          |
| 06-034B  | Steam Generator Flow Mismatch Instrument<br>Calibration |

The following items were considered during the inspection: that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that test results conformed with technical specifications and procedure requirements were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were reviewed and resolved by appropriate management personnel.

No items of noncompliance or deviations were identified.

6. Independent Inspection

The inspector conducted a general inspection of operations, maintenance, health physics, security, quality assurance, and administrative activities.

No items of noncompliance or deviations were identified.

7. Licensee Event Reports Followup

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with technical specifications.

|       |  |
|-------|--|
| 83-20 | Transmission Line R-304 Trip Due to Failed Insulator - Replaced failed insulator and all similar insulators on line  |
| 83-27 | Leak From Eroded Service Water Line From 1A Component Cooling Heat Exchanger - Repaired line and conducted ultrasonic testing of similar line on the 1B heat exchanger         |
| 83-34 | Leak From Eroded Service Water Line From 1D Containment Cooling Fan Unit - Replaced affected piping  |
| 83-35 | All Individual Rod Position Indicators Drifted Low - Cleaned tarnished voltage adjustment potentiometer, new power supply was received on July 12, 1984, and will be installed |
| 84-01 | Potential Loss of Both Trains of Shield Building Vent System - Revised surveillance procedure and remarked components, Reference Inspection Report No. 305/84-02               |
| 84-02 | Turbine Trip/Reactor Trip - Reference Inspection Report No. 305/84-02  |

- 84-03 Rod Cluster Control Assembly Cladding Wear - Full withdrawn position will be changed from 228 to 226 steps
- 84-04 Inadvertent Actuation of Shield Building Ventilation Recirculation Fan - A description of the event has been entered into the Information and Operational Experience Review Program and circulated to applicable plant and corporate supervisors to review with their personnel
- 84-05 Inadvertent Relay Operation - Investigation has not revealed any reason for the occurrence
- 84-07 Inadvertent Start of Both Diesels - Isolated occurrence caused by bumping of a Mercoid switch while performing maintenance activities during the refueling outage
- 84-08 Reactor Trip on Intermediate Range High Flux Signal - Replaced failed detector
- 84-09 Turbine/Reactor Trip Due to Improperly Wired Switch - Responsible personnel were counseled on the significance of this isolated occurrence
- 84-10 Reactor Trip on Steam Generator Lo-Lo Water Level - Sensitivity of steam generator level control in manual is being addressed as part of the human factors associated with the control room design review program
- 84-11 Unexpected Operation of 1A Shield Building Vent System Recirculation Fan and Dampers - Replaced on auxiliary contact in the fan motor starter
- 84-12 Inadvertent Start of the Auxiliary Building Special Ventilation System - Personnel involved have been made aware of their error, and a copy of the incident has been circulated to Operations, I&C, and Training Groups for information

No items of noncompliance or deviations were identified.

#### 8. Design Changes And Modifications

The inspector reviewed the following Design Change Requests to determine if the changes were made in conformance with the Kewaunee Operational Quality Assurance Program, Technical Specifications, and 10 CFR 50, Appendix B.

- a. Design Change Request No. 1412 - the design change was initiated to convert 31 Foxboro transmitters, used in safety-related systems, per Foxboro Maintenance Instruction No. 020-170. The change was required to maintain Certification of Environmental Qualification in accordance with IEEE 323-1974 and IEEE 344-1975.

- b. Design Change Request No. 1291 - the design change was initiated to upgrade the Post-LOCA air path for the containment fan coil units. For details which caused initiation of the change see Inspection Report 305/82-13, Para. 9.
- c. Design Change Request No. 1047 - the design change was initiated to change the operating position of the residual heat removal system Motor Operated Valves (MOV) SI-302 A&B from normally-closed to normally-open. The MOVs are required to open on an Engineered Safety Features actuation signal.

No items of noncompliance or deviations were identified.

9. Onsite Followup Of Events At Operating Reactors

At 6:35 p.m. on July 3, 1984, the reactor tripped from a Low Steam Generator Water Level coincident with Steam Flow/Feedwater Flow Mismatch signal from "B" steam generator. Approximately three minutes before the trip a power loss occurred on Instrument Bus IV. Bus IV instruments were being used for automatic steam generator level control, upon loss of the bus the operators took manual control of feedwater flow, but were unable to prevent the trip signal. All systems responded as expected following the plant trip. Following the performance of the Plant Trip Review procedure, the instrument bus was reenergized from a Class 1E alternate power supply and the plant restarted.

Subsequent investigation of the faulted power supply revealed a loose connection on the output breaker of the instrument bus normal supply inverter. The licensee will revise the applicable Preventative Maintenance Procedures to include a check for loose connections. The licensee reported the event as required by 10 CFR 50.72(b)(2)(ii) and 10 CFR 50.73(a)(2)(iv).

No items of noncompliance or deviations were identified.

10. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the period of June 16 - August 15, 1984 and at the conclusion of the inspection on August 10, 1984 and summarized the scope and findings of the inspection activities.