

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-305/84-22(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: December 17-20, 24, 26-28, 31, 1984
January 2-4, 8-11, 14-18, 21-25,
February 4, 7-8, 11, 13-15, 1985

Inspector: R. L. Nelson

Approved By: *I. N. Jackiw*
I. N. Jackiw, Chief
Reactor Projects Section 2B

2-28-85
Date

Inspection Summary

Inspection on December 17-20, 24, 26-28, 31, 1984, January 2-4, 8-11, 14-18, 21-25, February 4, 7-8, 11, 13-15, 1985 (Report No. 50-305/84-22(DRP))

Areas Inspected: Routine, unannounced inspection by resident inspector of operational safety; maintenance; surveillance; independent inspection; licensee event reports; and followup of plant events. The inspection involved a total of 127 inspector-hours by one inspector including 26 inspector-hours onsite during off-shifts.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

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

The inspector 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. 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 buildings were conducted. During these tours, observations were made relative to plant equipment conditions, 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 cooling, and radiation monitoring systems to verify operability.

No items of noncompliance or deviations were identified.

3. 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, 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>No.</u>	<u>Activity</u>
27902	Noisy 1B Spent Fuel Fan - Replaced bearings and rebalanced unit
24701	Cracked Cell 1A Battery - Replaced cell
28652	Leakage Part 1B Battery Fan Coil Solenoid Valve - Disassembled and cleaned valve seat
27949	Charging Pump 1A Seal Leakage - Replaced plunger packing
28348	Replaced Various Dedicated Shutdown Panel Switches with Upgraded Switches

No items of noncompliance or deviations were identified.

4. Monthly Surveillance Observation

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

<u>Surveillance Procedure</u>	<u>Test</u>
05A-27	Steam Generator Channel Test
18-043	Containment Pressure Channel Test
48-046	Target B and Determination
80-060	Portable Radiation Instrument Check
33-072	Accumulator Boron Sample
54-086	Turbine Stop and Governor Valves Operability Test
24-107	Shield Building Ventilation Monthly Test

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 and 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.

5. 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.

6 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.

84-019 Inadvertent Actuation of Safeguards Ventilation - miswiring of a relay in the Steam Exclusion system resulted in the logic for Safeguards Ventilation being 1/2 instead of 2/3. While performing ICP 14.8, "Calibration of Battery Room Steam Exclusion RTD Loops", a single lead was lifted which should have only caused an alarm actuation, instead because of the 1/2 logic the ventilation system was actuated. All similar relays were tested with no further problems.

No items of noncompliance or deviations were identified.

7. Review of Significant Events

On January 22, 1985, during full power operation, there was an inadvertent actuation of the "B" train Containment Spray System. The actuation occurred during the performance of SP 55-155, "Engineered Safeguards Logic Test". Approximately 2500 gallons of refueling water storage tank water was discharged into the containment.

A review of the Sequence of Events Recorder printout, produced during the performance of the containment Hi pressure logic testing, indicated that the Hi-Hi containment pressure alarm actuated twice. This could have energized the containment spray

master relay and at the end of the procedure when safety injection was reset, with the relay energized, the "B" train of containment spray system actuated. The Hi-Hi containment pressure bistable actuation during the test of the Hi containment pressure logic is attributed to an interaction between instrument loops which activate the bistables that are not being tested, that is, cross-talk. This is considered possible because the Hi and Hi-Hi pressure bistables are contained in a single unit. A retest was performed after the event to reproduce the actuation of the Hi-Hi pressure bistable. In two of seventeen attempts Hi-Hi containment pressure alarmed during testing of the Hi containment pressure logic.

During the tests, the Hi-Hi pressure bistable output voltages were recorded. The traces indicated some output fluctuations, but of insufficient magnitude to actuate the relay. This evidence supports cross-talk occurrence, but is not conclusive as the cause of the event. Further testing and necessary corrective actions will be performed prior to plant restart from the present refueling outage. This is an open item (305/84-22-01) pending determination of event cause, and completion of actions to prevent recurrence.

The plant was shutdown on February 8, 1985, to commence the 1985 refueling outage. The licensee elected to shutdown one week earlier than scheduled because of an indicated primary to secondary leak rate of approximately 60 gallons per day in one steam generator. The Technical Specification Limiting Condition for Operation is 500 gallons per day.

On February 10, 1985, with the plant in cold shutdown and reactor coolant pressure at 320 PSIG, the "B" reactor coolant pump started with the breaker control switch in the trip position. Investigation and testing has revealed that grounding of the gating terminal of the Silicon Controlled Rectifier (SCR) used for actuation of the closing coil will cause the SCR to conduct, thereby completing the closing coil circuit. The circuit breakers of concern are American Switchgear, Type PSD, 5 KV breakers. To preclude inadvertent closure of these breakers, the licensee has directed that any of these breakers which are to be maintained in the open position for equipment or personnel protection shall be placed in the racked out position. The licensee and breaker vendor are continuing investigation of corrective measures which can be implemented. This is an open item (305/84-22-02) pending implementation of circuitry modification.

No items of noncompliance or deviations were identified.

8. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the period and at the conclusion of the inspection on February 15, 1985 and summarized the scope and findings of the inspection activities.

The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary.