



UNITED STATES  
ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

TELEPHONE  
(312) 858-2660

A. RO Inspection Report No. 050-305/74-01

Transmittal Date : January 28, 1974

Distribution:  
RO Chief, FS&EB  
RO:HQ (5)  
DR Central Files  
Regulatory Standards (3)  
Licensing (13)  
RO Files

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RO Chief, FS&EB  
RO:HQ (4)  
L:D/D for Fuels & Materials  
DR Central Files  
RO Files

B. RO Inquiry Report No. \_\_\_\_\_

Transmittal Date : \_\_\_\_\_

Distribution:  
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Regulatory Standards (3)  
Licensing (13)  
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Distribution:  
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RO:HQ  
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C. Incident Notification From: \_\_\_\_\_  
(Licensee & Docket No. (or License No.))

Transmittal Date : \_\_\_\_\_

Distribution:  
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*APR Central Files*

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JAN 28 1974



Wisconsin Public Service Corporation  
ATTN: Mr. E. W. James, Senior Vice  
President  
Power Generation & Engineering  
P. O. Box 1200  
Green Bay, Wisconsin 54305

Docckt No. 50-305

Gentlemen:

This refers to the inspection conducted by Mr. Feierabend on December 31, 1973 through January 1, 1974, of activities at the Kewaunee site authorized by AEC Operating License No. DPR-43 and to the discussion of our findings with Mr. Luoma at the reactor site on December 31, 1973, and others of your staff at the conclusion of the inspection.

A copy of our report of this inspection is enclosed and identifies the areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with plant personnel, and observations by the inspector.

No violations of AEC requirements were identified within the scope of this inspection.

In accordance with Section 2.790 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the AEC's Public Document Room. If this report contains any information that you or your contractors believe to be proprietary, it is necessary that you make a written application to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. Any such application must include a full statement of the reasons for which it is claimed that the information is proprietary, and should be prepared so the proprietary information identified in the application is contained in a separate part of the document. Unless we receive an application to withhold information or are otherwise contacted within the specified time period, the written material identified in this paragraph will be placed in the Public Document Room.

Wisconsin Public Service  
Corporation

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JAN 28 1974

Should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely yours,

James G. Keppler  
Regional Director

Enclosure:

RO Inspection Rpt. No. 050-305/74-01

bcc: RO Chief, FS&EB  
RO:HQ (4)  
Licensing (4)  
DR Central Files  
RO Files  
PDR  
Local PDR  
NSIC  
DTIE  
OGC, Beth, P-506A  
R. Renfrow, GC (2)

U. S. ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

RO Inspection Report No. 050-305/74-01

Licensee: Wisconsin Public Service Corporation  
P. O. Box 1200  
Green Bay, Wisconsin 54305

Kewaunee Nuclear Power Plant  
Kewaunee, Wisconsin

License No. DPR-43  
Category: B

Type of Licensee: PWR 560 Mwe (W)

Type of Inspection: Special, Announced

Dates of Inspection: December 31, 1973 to January 1, 1974

Dates of Previous Inspection: December 15-22, 1973

Principal Inspector: *C. D. Feierabend*  
C. D. Feierabend

1/28/74  
(Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: *D. M. Hunnicutt*  
D. M. Hunnicutt, Chief  
Reactor Testing and Startup Branch

1/28/74  
(Date)

SUMMARY OF FINDINGS

Enforcement Action: None

Licensee Action on Previously Identified Enforcement Matters:

None included in the scope of this inspection.

Unusual Occurrences

1. During inspection of the reactor coolant piping a piece of lint free type cleaning rag was found. The entire reactor coolant system was reinspected. (Paragraph 3)
2. During fuel handling operations, the spent fuel handling tool became inoperative due to stainless galling. (Paragraph 4)

Other Significant Findings

A. Current Findings

Fuel loading operations were started on December 29, 1973, and were completed on December 31, 1973.

B. Unresolved Items

Licensee evaluation of the malfunction of the spent fuel handling tool. (Paragraph 4)

C. Status of Previously Reported Unresolved Items

Clarity of Water<sup>1/</sup>

The lack of clarity was determined to be caused by high suspended solids in the refueling water storage tank. This item is considered to be resolved. (Paragraph 2)

Management Interview

A management interview was conducted with Mr. Luoma at the reactor site on December 31, 1973.

<sup>1/</sup> RO Inspection Report No. 050-305/73-31.

The licensee stated that a thorough search of the primary system did not identify any additional extraneous material other than the lint free rag. (Paragraph 3)

The licensee discussed the investigations of the lack of clarity of the water identified during the last inspection<sup>2/</sup> and stated that the corrective actions appeared to be successful in resolving the problem. (Paragraph 2)

The inspector stated that the purpose of this inspection was to observe portions of the fuel loading operations. The inspector stated that he observed that the loading operations were being performed in a professional manner and that no violations had been identified.

2/ Ibid.

## REPORT DETAILS

### 1. Persons Contacted

#### Wisconsin Public Service Corporation (WPS)

C. Giesler, Superintendent, Nuclear Power  
C. Luoma, Plant Superintendent  
C. Steinhardt, Reactor Supervisor  
M. Stern, Reactor Test Engineer  
K. Evers, Reactor Engineer  
W. Truttman, Operations Supervisor  
J. Bly, Shift Supervisor  
M. Singh, Shift Supervisor  
G. Kingston, Shift Supervisor  
D. Ristau, Shift Supervisor  
G. Jarvella, Health Physics Supervisor  
R. Snodgrass, Radiochemistry Laboratory Technician

#### Westinghouse Electric Corporation (W)

D. Cathcart, Senior Surveillance Engineer

### 2. Reactor Coolant Water Quality

The inspector reviewed the water sampling log and discussed the test results with laboratory personnel. The test records indicated that the quality of water in the refueling water storage tanks (RWST) was within specifications requirements for total and suspended solids prior to borations. Subsequent to boration, the tank was routine sampled for boron concentration.

While filling the refueling canal and the reactor vessel, licensee personnel observed that the water was not as clear as during testing performed prior to boration. Preparation for fuel loading was suspended when analysis verified that the suspended solids were not within specification for reactor coolant.

The licensee drained the refueling canal and reactor vessel, and initiated cleanup of the RWST water by circulation through a filter and the spent fuel pool cleanup system. By December 24, 1973, the RWST water was within specification for the reactor coolant system; however, the licensee elected to borate demineralized water directly into the reactor coolant system with the result that visibility was excellent throughout the fuel loading operation.

The licensee has continued to perform analyses to confirm water quality in accordance with the Technical Specifications. Although the cause of the high suspended solids in the RWST could not be definitely established, it appeared that the performance of surveillance tests on the containment spray system could have dislodged the solids and carried them into suspension.

3. Cleaning Rag in Primary System

During investigation of the water clarity, a piece of lint free type cleaning rag was found in the reactor coolant piping, although final inspection had been considered complete. The licensee reinspected the entire system to determine whether there were any additional extraneous items in the system. This included removal of the vessel lower internals, inspection of primary coolant pumps and piping, steam generator and RHR heat exchanger plenums, etc. No additional items were found.

4. Spent Fuel Handling Tool

During fuel handling operations, the spent fuel handling tool latching mechanism became inoperative due to galling of stainless steel. Discussions with the licensee and contractor personnel indicated that it was possible to release the fuel element by exerting additional forces without affecting the fuel, but that the tool required repair. Repairs were completed by disassembling the tool, polishing the surfaces to a very smooth finish prior to reassembly, and lubricating the mating surfaces with Neolube after reassembly. Licensee representatives stated that the cause appeared to be from lack of lubrication as the operation was "dry" although the tool is normally operated under water.

Fuel handling operations were resumed, using the bridge crane and new fuel handling tool, with a temporary procedure similar to that used for placing the new fuel in the spent fuel pit. The inspector observed the operation, which included positioning an operator in a "bosun's chair" to guide the element into the upender. The operation was progressing normally. This procedure was continued for approximately 10 hours, when the repairs to the spent fuel handling tool were completed.

The licensee will investigate the cause of the malfunction to determine what additional action may be required to prevent recurrence. This item is considered unresolved pending completion of the evaluation.

5. Core Loading

The inspector observed core loading operations in each of the operating locations. The operations were being performed in conformance with startup test procedure ST-2, Initial Core Loading.

The procedure provided for an adequate number of operators and support personnel for each operating and monitoring function. Inspection of fuel and monitoring of the operations was conducted by Westinghouse (W) personnel throughout the fuel loading activities. Inverse count rate ratio (ICCR) was computed, plotted on a graph, for each fuel element in accordance with the procedure and compared with the graph of an ICCR for another W reactor that had been previously loaded. The inspector observed that the plots followed the same general pattern. The last fuel element was loaded into the core at 1905 on December 31, 1973.