October 16, 2000

Mr. M. Reddemann
Site Vice President
Kewaunee and Point Beach Nuclear Plants
Nuclear Management Company, LLC
6610 Nuclear Road
Two Rivers, WI 54241

SUBJECT: KEWAUNEE INSPECTION REPORT 50-305-00-18(DRP)

Dear Mr. Reddemann:

On September 30, 2000, the NRC completed an inspection at your Kewaunee Nuclear Power Plant. The enclosed report presents the results of that inspection, which were discussed on September 29, 2000, with you, Mr. M. Wadley, and other members of your staff.

The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection no findings were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available **electronically** for public inspection in the NRC Public Document Room **or** from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. *ADAMS is accessible from* the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/***RA***/

Melvyn Leach, Chief
Reactor Projects Branch 2

Docket No. 50-305
License No. DPR-43

Enclosure: Inspection Report 50-305-00-18(DRP)

See Attached Distribution

Mr. M. Reddemann
Site Vice President
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cc w/encl: K. Weinhauer, Assistant Site Vice President, Kewaunee Plant
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-305
License No:	DPR-43
Report No:	50-305-00-18(DRP)
Licensee:	Nuclear Management Company, LLC
Facility:	Kewaunee Nuclear Power Plant
Location:	N 490 Highway 42 Kewaunee, WI 54216
Dates:	August 15 through September 30, 2000
Inspectors:	J. Lara, Senior Resident Inspector Z. Dunham, Resident Inspector P. Krohn, Resident Inspector T. Madeda, Regional Inspector
Approved By:	Melvyn Leach, Chief Reactor Projects Branch 2 Division of Reactor Projects

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW, or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

Summary of Findings

NRC Inspection Report 50-305-00-18, on 08/15-9/30/2000; Nuclear Management Company, LLC; Kewaunee Nuclear Power Plant; Unit 1. Resident Operations Report.

The inspection was conducted by resident inspectors and a regional specialist. There were no findings identified during this inspection.

Report Details

Summary of Plant Status: The unit was operated at approximately 96 percent power during the inspection period except for a brief reduction in power to facilitate quarterly scheduled main turbine stop and control valve testing.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignments

a. Inspection Scope

During this inspection period, the inspectors conducted a semi-annual walkdown of the chemical and volume control system and its associated support systems. The inspectors verified the correct valve positions for accessible portions of the system using the system piping and instrumentation drawings and the system lineup checklist. The inspectors observed that instrumentation valve configurations and appropriate pressure and flow meter indications were also acceptable. The inspectors periodically observed proper installation of hangers and supports, verified operational status of support systems such as boric acid heat tracing circuits, observed proper control room switch positions and local breaker positions for the system, and reviewed abnormal system operating procedures. The inspectors also evaluated other conditions such as adequacy of housekeeping, the absence of ignition sources, and proper component labeling. Additionally, the inspectors conducted walkdowns of both the normal and emergency boration flow paths. The following documents were reviewed:

- N-CVC-35B, “Charging and Volume Control,” Revision AC
- A-CVC-35A, “Malfunction of Reactor Makeup Control,” Revision H
- E-CVC-35, “Emergency Boration,” Revision P
- N-CVC-35B-CL, “Charging and Volume Control Prestartup Checklist,” Revision AI
- Drawing OPER XK-100-36, Flow Diagram Chemical & Volume Control System
- Drawing OPER XK-100-37, Flow Diagram Chemical & Volume Control System

b. Findings

There were no findings identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors performed walkdowns of the following areas:

- Main generator potential transformers and isophase bus ducts
- Feedwater heaters, battery room, and electrical buses 3 and 4

- Condensate storage tanks and heating boiler
- Technical Support Center lower and mezzanine levels
- Cable spreading room

Emphasis was placed on control of transient combustibles and ignition sources; the material condition, operational lineup, and operational effectiveness of the fire protection systems, equipment, and features; and the material condition and operational status of fire barriers used to prevent fire damage or limit fire propagation.

In particular, the inspectors verified that all observed transient combustibles were being controlled in accordance with the licensee's administrative procedures. In addition, the inspectors observed the physical condition of fire detection devices, such as overhead sprinklers, and verified that any observed deficiencies did not impact the operational effectiveness of the system. The inspectors observed the physical condition of portable fire fighting equipment, such a portable fire extinguishers, and verified the equipment was located appropriately and that access to the extinguishers was unobstructed. The inspectors verified that fire hoses were installed at their designated locations. The inspectors verified that the physical condition of the hoses was satisfactory and that access to the hoses was unobstructed. The inspectors observed the physical condition of passive fire protection features such as fire doors, ventilation system fire dampers, fire barriers, fire zone penetration seals, and fire retardant structural steel coatings. The inspectors verified the passive fire protection features were properly installed and in good physical condition.

The following documents were reviewed:

- Fire Plan Procedure (FPP) 08-07, "Control of Ignition Sources," Revision D
- FPP 08-01, "Fire Plan Operability, Surveillance, and Contingency Requirements," Revision C
- FPP 08-08, "Control of Transient Combustibles," Revision A
- FPP 08-12, "Fire Prevention Tour," Revision B
- FPP 08-14, "Fire Protection Shutdown Policy," Original Revision
- N-FP-08-CL, "Fire Protection System Checklist," Revision AL
- Kewaunee Fire Protection Program Plan, Revision 3
- Flow Drawing M-208, Fire Protection System

b. Findings

There were no findings identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On September 12 and 26, 2000, the inspectors observed licensed operator requalification simulator dynamic exams. The inspectors observed the performance of the licensed operators to determine whether plant operating procedures and standards were implemented during the scenario. The inspectors observed the post-scenario critique to determine whether performance issues were accurately identified and

addressed. The inspectors verified that emergency plan requirements were recognized and addressed during the scenario.

b. Issues and Findings

There were no findings identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the maintenance rule requirements to ensure that component and equipment failures were identified, entered, and scoped within the maintenance rule and that select structures, systems, or components were properly categorized and classified as (a)(1) or (a)(2) in accordance with 10 CFR 50.65. The inspectors also verified that issues were identified at an appropriate threshold and entered in the corrective action program.

Specific components or system problems evaluated were:

- Auxiliary Feedwater (AFW) train A system and components
- AFW train B system and components
- Turbine Driven AFW train system and components

The inspectors reviewed various Kewaunee Assessment Process (KAP) in addition to the following documents:

- Nuclear Administrative Directive (NAD) 8.20, "Maintenance Rule Implementation," Revision A
- General Nuclear Procedure 8.20.1, "Maintenance Rule Scoping and Performance Criteria," Revision A
- General Nuclear Procedure 8.20.2, "Maintenance Rule Data Evaluation and Goal Setting," Revision A

b. Findings

There were no findings identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the licensee’s evaluation of plant risk, scheduling, and configuration control during the planned and emergent work activities listed below. In particular, the inspectors verified that the licensee’s planning and management of on-line risk were adequate. The inspectors also verified that licensee actions to address increased on-line risk during these periods were in accordance with approved administrative procedures. The inspectors reviewed appropriate sections of Surveillance Procedures (SP), the Updated Safety Analysis Report (USAR) and

technical specifications, interviewed licensee personnel, reviewed NAD 8.2, “Work Request/Work Order,” Revision D, and reviewed the licensee’s Individual Plant Examination, Section 5.0, “Core Damage Frequency Quantification.”

- Emergent work associated with licensee’s determination that the suction strainers for all three trains of AFW pumps did not meet design requirements.
- SP-02-138, "Service Water Pump and Valve Test - IST," Revision AR

b. Findings

There were no findings identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the technical adequacy of operability evaluations to ensure that the system operability was properly justified and the system remained available, such that no unrecognized increase in risk occurred.

The inspectors reviewed the following operability evaluations:

- Temporary Change Request (TCR) 00-019, Removal of AFW Pump Suction Strainers.
- KAP Work Order 00-002869, High Energy Line Break Access Door Found Open
- KAP Work Request 00-003185, Auxiliary Building Fan Floor Fan Coil Unit 1A Heat Removal Less than Required.

b. Findings

There were no findings identified.

1R16 Operator Work Arounds

a. Inspection Scope

The inspectors conducted a semi-annual review of Operator Work Arounds (OWA) to identify any cumulative effects of OWA’s on safety system availability and reliability, to review any cumulative effects that could increase an initiating event frequency or could affect multiple mitigating systems, and review the cumulative effects of OWA’s on the ability of operators to respond in a correct and timely manner to plant transients and accidents. The inspectors also evaluated whether there were OWA’s which had not been identified by the licensee. The following OWA’s were reviewed for cumulative effects:

- OWA 95-006, Steam Generator Blowdown Heat Exchanger Condensate Flow Control Valves 1003A(B) Will Not Control in Auto.
- OWA 00-009, Failure of Service Water Shroud Cooling Bypass Valves Rendering the Associated Containment Fan Coil Unit Out of Service.

b. Findings

There were no findings identified.

1R19 Post Maintenance Testing

a. Inspection Scope

During post maintenance testing activities, the inspectors verified that the test was adequate for the scope of the maintenance work which had been performed and that the testing acceptance criteria were clear and demonstrated operational readiness consistent with the design and licensing basis documents. The inspectors also verified that the impact of the testing had been properly characterized during the pre-job briefing; the test was performed as written and all testing prerequisites were satisfied; and the test acceptance criteria were satisfied. Following the completion of the test, the inspectors verified that the test equipment was removed and that the equipment was returned to a condition in which it could perform its safety function. Post maintenance test activities were observed for the following components:

- Removal of AFW Pump Suction Strainers
- Reactor Trip Bypass Breaker Maintenance

The following documents were reviewed:

- Partial SP 05B-104, “Motor Driven Auxiliary Feedwater Pump and Valve Test - IST,” Revision AI,
- KAP Work Request 00-003095

b. Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed surveillance testing on risk-significant equipment and verified that the equipment was capable of performing its intended safety function and that the surveillance tests satisfied the requirements contained in technical specifications, the USAR, and licensee procedures. During the surveillance tests, the inspectors verified that the test was adequate to demonstrate operational readiness consistent with the design and licensing basis documents, and that the testing acceptance criteria was clear. The inspectors also verified that the test was performed as written and all testing prerequisites were satisfied and that the test data was complete, appropriately verified, and met the requirements of the testing procedure. Following the completion of the test, the inspectors verified that the test equipment was removed and that the equipment was returned to a condition in which it could perform its safety function.

The inspectors observed and reviewed the performance of the following surveillance testing on risk significant equipment:

- SP-47-316C, “Channel 3 (Blue) Instrument Channel Test,” Revision H
- SP-48-004I, “Nuclear Power Range Channel 3 (Blue) N-43 Quarterly Calibration,” Revision B
- N-0-03, "Plant Operation Greater Than 35% Power," Revision AJ
- SP-54-086, "Turbine Stop and Governor Valve Operability Test," Revision AC

b. Findings

There were no findings identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

On August 21, 2000, the licensee identified that the AFW pump suction strainers did not meet design requirements. As designed, the strainers were to be 6 inches in length with 1/8 inch perforations. The installed strainers were 10 inches in length with 1/16 inch perforations. The licensee determined that the strainers could become potentially plugged if the alternate safety related water source, the service water system, was aligned to the pumps’ suction. The licensee implemented TCR 00-019, “Remove AFW Pump Suction Strainers” to remove the AFW pump suction strainers. The inspectors reviewed appropriate sections of the USAR, conducted walkdowns of the auxiliary feedwater system, and reviewed the facility’s Individual Plant Examination, Section 5.0, “Core Damage Frequency Quantification”.

b. Findings

No findings were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection

3PP4 Security Plan Changes

a. Inspection Scope

The inspector reviewed Revision 13 of the Kewaunee Nuclear Power Plant (KNPP) Security Manual, Revision 2 of the KNPP Security Training and Qualification Manual, and Revision 2 of the KNPP Security Contingency Plan. These plan revisions were submitted by licensee letter dated August 30, 2000. The inspector's verified that licensee changes to the referred documents did not decrease the effectiveness of those documents. The plan revisions were submitted in accordance with 10 CFR 50.54(p) requirements.

b. Findings

There were no findings identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 RCS Leak Rate

Cornerstone: Barrier Integrity

a. Inspection Scope

The inspectors reviewed the licensee's performance indicator data collection process and historical data through the second quarter of 2000. The following documents were reviewed:

- NAD-3.18, "NRC Performance Indicators," Revision A
- "Guideline for Data Collection and Reporting NRC Performance Indicators" dated June 22, 2000
- Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0
- SP 36-082, "Reactor Coolant System Leak Rate Check," Revision Y

The licensee initiated KAP 00-003227 in response to the inspectors identifying that the licensee had submitted incorrect reactor coolant system leak rate data. No thresholds were crossed.

b. Findings

There were no findings identified.

.2 Safety System Functional Failure

Cornerstone: Mitigating Systems

a. Inspection Scope

The inspectors reviewed the licensee's performance indicator data collection process and historical data through the second quarter of 2000. The following documents were reviewed:

- NAD-3.18, "NRC Performance Indicators," Revision A
- "Guideline for Data Collection and Reporting NRC Performance Indicators" dated June 22, 2000
- Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0
- Licensee Event Report (LER) 1998-011, Control Room Post-Accident Recirculation Ventilation Trains Inoperable - Plant Outside of Design Basis, October 21, 1998.
- LER 2000-008, High Head Recirculation Outside Design Basis of Plant, June 20, 2000.

The licensee initiated KAP 00-003324 in response to the inspectors identifying that the licensee had submitted incorrect data for safety system functional failures and that other safety system functional failure data had been reported for the wrong quarter. No thresholds were crossed.

b. Findings

There were no findings identified.

4OA3 Event Follow-up

(Closed) LER 305/2000-003-00: Unplanned Engineered Safeguards (ESF) Feature Actuation Caused By Radiation Monitor R-15 Detector Failing. On March 16, 2000, while the plant was operating at full power, radiation monitor system channel R-15, "Condenser Air Ejector Gas Radiation Monitor" failed. As a result, an inadvertent blowdown isolation occurred. The failure was due to a failed radiation detector. The detector was subsequently replaced and tested, and the R-15 monitor was returned to service. All ESF equipment responded appropriately as designed. There were no findings identified.

(Closed) LER 305/2000-004-00 & 305/2000-004-01: Unplanned ESF Actuation Caused By Radiation Monitor R-15 Failing - Repeat Occurrence & Supplement. On April 15, 2000, while the plant was operating at full power, radiation monitor system channel R-15, "Condenser Air Ejector Gas Radiation Monitor" failed. As a result, an inadvertent blowdown isolation occurred. The failure was due to a failed radiation detector. The detector was subsequently replaced and tested, and the R-15 radiation monitor was returned to service. All ESF equipment responded appropriately as designed. The supplement was submitted to elaborate on subsequent vendor testing since the submittal of LER 2000-04-00 to evaluate for potential common cause failures between the two events. The testing was inconclusive as to a common root cause for the failures associated with the detectors. The licensee subsequently replaced the detector and have not experienced any subsequent failures. There were no findings identified.

4OA6 Management Meetings

Exit Meeting Summary

On September 29, 2000, the inspectors presented the inspection results to you, Mr. M. Wadley, and other members of the Kewaunee staff. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Nuclear Regulatory Commission - RIII

J. Caldwell, Deputy Regional Administrator
R. Lanksbury, Branch Chief, DRP, Branch 5
M. Leach, Branch Chief, DRP, Branch 2

Nuclear Management Company, LLC

D. Braun, Assistant Plant Manager - Operations
D. Cole, Manager, Assessments
K. Evers, Manager, Nuclear Support Services
J. Fletcher, Security Manager
G. Harrington, Plant Licensing Supervisor
K. Hoops, Plant Manager, Kewaunee Plant
B. Koehler, Manager, Quality Programs
J. Mortonson, Assistant Plant Manager - Maintenance
M. Reddeman, Site Vice President
M. Reinhart, Superintendent, Radiation Protection
J. Schweitzer, Manager, Engineering and Technical Support
J. Stoeger, Superintendent, Operations
M. Wadley, Chief Nuclear Officer
T. Webb, Nuclear Licensing Director
K. Weinhauer, Assistant Site Vice President, Kewaunee Plant

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened
None

Closed

50-305-2000-003-00	LER	Unplanned ESF Actuation Caused By Radiation Monitor R-15 Detector Failing (Section 4OA3)
50-305-2000-004-00 50-305-2000-004-01	LER	Unplanned ESF Actuation Caused By Radiation Monitor R-15 Failing - Repeat Occurrence & Supplement. (Section 4OA3)

Discussed
None

LIST OF BASELINE INSPECTIONS PERFORMED

The following inspectable area procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

Inspection Procedure

Number	Title	Report Section
71111.04S	Equipment Alignments	R04
71111.05Q	Fire Protection	R05
71111.11Q	Licensed Operator Requalification	R11
71111.12Q	Maintenance Rule Implementation	R12
71111.13	Maintenance Risk Assessment and Emergent Work Evaluation	R13
71111.15	Operability Evaluations	R15
71111.16	Operator Work-Arounds	R16
71111.19	Post Maintenance Testing	R19
71111.22	Surveillance Testing	R22
71111.23	Temporary Plant Modifications	R23
71130.04	Security Plan Changes	PP4
71151	Performance Indicator Verification	OA1
71153	Event Follow-up	OA3
	Meetings, Including Exit	OA6

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects, Region III
ESF	Engineered Safeguards Features
FPP	Fire Plan Procedure
KAP	Kewaunee Assessment Process
KNPP	Kewaunee Nuclear Power Plant
LER	Licensee Event Report
NAD	Nuclear Administrative Directive
NRC	Nuclear Regulatory Commission
OWA	Operator Work Around
PDR	Public Document Room
SP	Surveillance Procedure
TCR	Temporary Change Request
USAR	Updated Safety Analysis Report