

December 21, 2001

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 NUCLEAR POWER PLANT  
NRC INSPECTION REPORT 50-305/01-16(DRS)

Dear Mr. Reddemann:

On December 14, 2001, the NRC completed an inspection at your Kewaunee Nuclear Power Plant. The enclosed report documents the inspection findings which were discussed on December 14, 2001, with you and other members of your staff.

The inspection examined 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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Specifically, this inspection focused on the baseline annual inspection for evaluations of changes, tests, or experiments (10 CFR 50.59) and the baseline biennial inspection for permanent plant modifications.

No findings of significance 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 by Zelig Falevits Acting For/***

Ronald N. Gardner, Chief  
Electrical Engineering Branch  
Division of Reactor Safety

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

Enclosure: Inspection Report 50-305/01-16(DRS)

See Attached Distribution

M. Reddemann

-2-

cc w/encl: K. Hoops, Manager, Kewaunee Plant  
D. Graham, Director, Bureau of Field Operations  
Chairman, Wisconsin Public Service Commission  
State Liaison Officer

Mr. M. Reddemann  
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Ronald N. Gardner, Chief  
Electrical Engineering Branch  
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DOCUMENT NAME: G:DRS\KEW01-16DRS.WPD

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M. Reddemann

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cc w/encl: K. Hoops, Manager, Kewaunee Plant  
D. Graham, Director, Bureau of Field Operations  
Chairman, Wisconsin Public Service Commission  
State Liaison Officer

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-305/01-16

Licensee: Nuclear Management Company, LLC

Facility: Kewaunee Nuclear Power Plant

Location: N 490 Highway 42  
Kewaunee, WI 54216

Dates: December 10 through 14, 2001

Inspectors: George M. Hausman, Senior Reactor Inspector  
Darrell L. Schrum, Reactor Inspector  
Robert A. Winter, Reactor Inspector

Approved by: Ronald N. Gardner, Chief  
Electrical Engineering Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000305-01-16(DRS), on 12/10-14/2001, Nuclear Management Company, LLC, Kewaunee Nuclear Power Plant. Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications Report.

The report covers a five day announced inspection. The inspection was conducted by three Region III based reactor inspectors. No findings of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violations.

A. Inspector Identified Findings

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

No findings of significance were identified.

## Report Details

### Summary of Plant Status

The unit operated at or near ninety percent power throughout the inspection period.

#### **1. REACTOR SAFETY**

##### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R02 Evaluations of Changes, Tests, or Experiments (71111.02)

##### .1 Review of 10 CFR 50.59 Evaluations and Screenings for Changes, Tests, or Experiments

###### a. Inspection Scope

The inspectors reviewed eight evaluations performed pursuant to 10 CFR 50.59. The evaluations related to permanent plant modifications, setpoint changes, procedure changes, conditions adverse to quality, and changes to the updated safety analysis report. The inspectors confirmed that the evaluations were thorough and that prior NRC approval was obtained as appropriate. The inspectors also reviewed eleven screenings where the licensee had determined that a 10 CFR 50.59 evaluation was not necessary. In regard to the changes reviewed where no 10 CFR 50.59 evaluation was performed, the inspectors verified that the changes did not meet the threshold to require a 10 CFR 50.59 evaluation. These evaluations and screenings were chosen based on risk significance of samples from the different cornerstones.

###### b. Findings

No findings of significance were identified.

#### 1R17 Permanent Plant Modifications (71111.17)

##### .1 Review of Recent Permanent Plant Modifications

###### a. Inspection Scope

The inspectors reviewed ten permanent plant modifications that were installed in the last two years. The modifications were chosen based upon their affecting systems that had high probabilistic risk analysis (PRA) significance in the licensee's Individual Plant Evaluation (IPE) or high maintenance rule safety significance. The inspectors reviewed the modifications to verify that the completed design changes were in accordance with the specified design requirements and the licensing bases and to confirm that the changes did not affect any systems' safety function. Design and post-modification testing aspects were verified to ensure the functionality of the modification, its associated system, and any support systems. The inspectors also verified that the modifications performed did not place the plant in an increased risk configuration.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed a selected sample of corrective action documents associated with the licensee's permanent plant modifications and concerning 10 CFR 50.59 evaluations and screenings to verify that the licensee had an appropriate threshold for identifying issues. The inspectors evaluated the effectiveness of the corrective actions for the identified issues.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting

The inspectors presented the inspection results to Mr. Reddemann and other members of licensee management at the conclusion of the inspection on December 14, 2001. The licensee acknowledged the findings presented. No proprietary information was identified.



## KEY POINTS OF CONTACT

### Nuclear Management Company, LLC

L. Armstrong, Design Engineering Manager  
M. Aulik, Modification Engineer  
A. Bolyen, Compliance Engineer  
P. Brantmeier, Instrumentation and Controls Engineer  
E. Coen, Probability Risk Assessment Engineer  
J. Holly, Analytical Engineering Group Leader  
K. Huget, In-service Testing Coordinator  
K. Hull, Mechanical Design Engineer  
T. Maloney, Licensing Engineer  
K. Peveler, Nuclear Oversight Manager  
S. Putman, Equipment for Performance Engineering Manager  
M. Reddemann, Site Vice President  
K. Schommer, Electrical Design Engineer  
J. Schweitzer, Engineering and Technical Support Manager  
C. Sternitzky, Plant Librarian  
T. Webb, Site Licensing Director

### NRC

J. Lara, Senior Resident Inspector

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AFW	Auxiliary Feedwater
ANSI	American National Standards Institute
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CV	Control Valve
CW	Circulating Water
dc	Direct Current
DCP	Design Change Package
DCR	Design Change Request
DPR	Demonstration Power Reactor
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EQ	Environmental Qualification
ESF	Engineered Safety Features
F	Fahrenheit
GL	Generic Letter
GNP	General Nuclear Procedure
gov	Government
html	Hypertext Markup Language
http	Hypertext Transfer Protocol
HX	Heat Exchanger
IMC	Inspection Manual Chapter
IPE	Individual Plant Evaluation
IR	Inspection Report
IST	In-service Testing
KAP	Kewaunee Assessment Process
KEW	Kewaunee
LLC	Limited Liability Company
LOCA	Loss of Coolant Accident
LPM	Loose Parts Monitor
MCC	Motor Control Center
MOV	Motor Operated Valve
NAD	Nuclear Administrative Directive
NEI	Nuclear Energy Institute
NPSH	Net Positive Suction Head
NRC	United States Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OA	Other Activities
OQAP	Operational Quality Assurance Program
PARS	Publicly Available Records
PPCS	Honeywell Plant Process Computer
PRA	Probabilistic Risk Analysis
PTE	Procurement Technical Evaluation
QA	Quality Assurance

## LIST OF ACRONYMS USED

QC	Quality Control
RG	Regulatory Guide
RHR	Residual Heat Removal
RXCP	Reactor Coolant Pump
SDP	Significance Determination Process
SE	Safety Evaluation
SER	Safety Evaluation Report
SFP	Spent Fuel Pool
SFPCS	Spent Fuel Pool Cooling System
SI	Safety Injection
SMSR	Simulator Maintenance Support Request
SPING	Stack Particulate Iodine Noble Gas
SSFI	Safety Systems Functional Inspection
SV	Solenoid Valve
SW	Service Water or Switch
TDAFW	Turbine Driven Auxiliary Feedwater
TLA	Trouble Light Alarm
TS	Technical Specification
UFM	Ultrasonic Flow Meter
USAR	Updated Safety Analysis Report
USI	Unresolved Safety Issue
V	Volt
wpd	WordPerfect Document
www	World Wide Web

## LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion on this list does not imply that NRC inspectors reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document in this list does not imply NRC acceptance of the document, unless specifically stated in the inspection report.

### **CALCULATIONS**

<u>Number</u>	<u>Description</u>	<u>Rev/Date</u>
C11121	Evaluation of Column Line 9 Shear Wall for SFP HX Access	April 4, 2000
C11122	Tornado Loads Evaluation of SFP HX Access Plug	April 4, 2000
C11168	SFPCS Heat Removal Capacity	November 2, 2000
KEW-EPED-DCR-2392-2	125Vdc Safeguards Battery Charger Sizing	2

### **DRAWINGS**

<u>Number</u>	<u>Description</u>	<u>Rev/Date</u>
E-1634	Integrated Logic Diagram Diesel Generator Electric	T
E-1874	Schematic Diagram Bus 5 Voltage Restoring	W
E-1887	Schematic Diagram Bus 6 Voltage Restoring	U
E-2104	W/D Ext Conn's Sol & Cont Vlv's Terminal Boxes #1383, #1384, #1394	R
E-2104	W/D Ext Conn's Sol & Cont Vlv's Terminal Boxes #1383, #1384, #1394	S
Ops M-205	Flow Diagram Feedwater System	AU

### **KEWAUNEE ASSESSMENT PROCESS (KAP) DOCUMENTS GENERATED DURING INSPECTION**

<u>Number (W0)</u>	<u>Description</u>	<u>Rev/Date</u>
01-020095-000	Evaluate "Crimp" Failure Mode on Non-Seismic Piping Downstream of Safety Related Discharge SW Piping for EDGs	December 13, 2001
01-020096-000	Re-Evaluation of "Trivial Change" Clause in SR for DCR 3002, Rev. 2	December 13, 2001

### **KEWAUNEE ASSESSMENT PROCESS (KAP) DOCUMENTS GENERATED PRIOR TO INSPECTION**

<u>Number (W0)</u>	<u>Description</u>	<u>Rev/Date</u>
98-002007-000	During the Development of PTE 92-197, Rev 9, Numerous QA Type, Dwg and Equip Database Discrepancies Were Identified, Along with Minor USAR Discrepancy	September 4, 1998

**KEWAUNEE ASSESSMENT PROCESS (KAP) DOCUMENTS GENERATED  
PRIOR TO INSPECTION**

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<b><u>Number (W0)</u></b>	<b><u>Description</u></b>	<b><u>Rev/Date</u></b>
99-003698-000	UFM Measurements with New UFM's Show Lower Flows than Expected on SW	November 19, 1999
00-000239-000	Provide Support, Evaluations, and Physical Changes for the SFP HX Bundle Replacement	February 4, 2000
00-001290-000	SW is On Shell Side of the SFP HX - Recently Removed Bundle was Heavily Fouled	May 5, 2000
00-217931-000	Heat Exchanger's Shell Side Plugged w/Lake Water Debris	January 10, 2000
01-002059-000	Screen for DCR Failed to Consider Impact on RG1.97 Plan	February 1, 2001
01-008594-000	KAP 97-1192 Was Written and Apparently Used to Remove the Feedwater UFM's	May 17, 2001
01-011497-000	Directives Do Not Directly Incorporate or Provide for Some of the Applicable Elements of the Physical Change Program as Described in the OQAP	June 29, 2001
01-011566-000	GNP 4.3 Series Procedures Do Not Provide Guidance on How Field Changes Are to Be Documented	July 3, 2001
01-011568-000	A Systematic Method Has Not Been Established for GNP 4.3 for Communicating Design Information Across Internal and External Design Interface	July 3, 2001
01-011569-000	GNP 4.3 Series Procedures Do Not Sufficiently Prescribe Design Implementation Requirements to OQAP and ANSI N45.2.11 for Design Changes and Major 30 Modifications	July 3, 2000
01-011867-000	DCR 3102, Eberline Terminal Replacement Had the Installation Started Without Work Packages Prepared	July 18, 2001
01-013312-000	Review of Safety Evaluation for DCR 3048 Relied on Operator Action So Was Appeared Insufficient Information Provided on Probability of Effect of Malfunction	August 10, 2001

**MODIFICATIONS:**

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<b><u>Number</u></b>	<b><u>Description</u></b>	<b><u>Rev/Date</u></b>
DCR 2546	SSFI-Revise Control Logic for 1A,1B, & 1C Compressors	January 11, 2000
DCR 2552	Install Relief Vlv for SI Pump Between SI5A/B and Pump	January 4, 2001
DCR 3002	Mod to Test Degraded Grid Under-Voltage Circuitry	April 16, 1998
DCR 3023	Control Rm Air Conditioning Damper (ACC4) Modification	October 5, 2001
DCR 3037	Change Limitorque Actuator Gearset in Vlv's AFW 10A&B	March 8, 2000
DCR 3041	Replace SW1601/CV-31086	September 19, 2000
DCR 3109	Service Water Temperature Trouble Light Alarm (TLA)	August 13, 1999
DCR 3149	Design of Steel Cover Plate for SFP HX Access Opening	November 27, 2000
DCR 3165	Modify TDAFW Pump Bearing Oil Sight-Glass	May 20, 2000
DCR 3334	Replace Instrument Air Isolation Valve (IA-1403)	October 26, 2001

## **PROCEDURES**

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<b><u>Number</u></b>	<b><u>Description</u></b>	<b><u>Rev/Date</u></b>
GNP 4.3.1	Guide to Safety Review, Safety Evaluations, and Second Level Reviews	A
GNP 4.3.2	Plant Physical Change Screening	B
GNP 4.3.3	Plant Physical Change Control	B
Guideline	Preparation of Design Change Design Description, Safety Review and Safety Evaluation	October 6, 1999
Guideline	Supporting Physical Change Screening - GNP 4.3.2	October 23, 2001
Guideline	Supporting Permanent Physical Changes - GNP 4.3.3	September 26, 2001
NAD 1.1	Quality Assurance Boundary	C
NAD 3.9	Independent/Concurrent Verification	B
NAD 4.3	Plant Physical Changes	B

## **REFERENCES**

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<b><u>Number</u></b>	<b><u>Description</u></b>	<b><u>Rev/Date</u></b>
Audit 01-002	Engineering Summary (pages 7 and 8 of 16)	2 <sup>nd</sup> Quarter 2001
Audit 01-003	Engineering Summary (pages 9 and 10 of 17)	3 <sup>rd</sup> Quarter 2001
CW-04	Annunciator Number: 47034-22	Original and A
Night Order	Operability of Service Water System	November 19, 1999
NRC Document	SER for USI A-46 Program Implementation	April 14, 1998
00-002-00-002	SMSR to Install TLA-27 on Sim/PPCS	January 17, 2000
TS 3.4	Steam and Power Conversion System	Amendment # 123

## **50.59 EVALUATIONS**

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<b><u>Number</u></b>	<b><u>Description</u></b>	<b><u>Rev/Date</u></b>
98-04	Mod to Test Degraded Grid Under-Voltage Circuitry	February 8, 1998
00-05	Evaluate Min Available NPSH to RHR Pump During Post-LOCA Sump Recirculation in Response to GL 97-04	March 13, 2000
00-19	New Procedure to Test Ability of RHR Hx to Provide Backup Heat Removal Source to SFP	April 14, 2000
00-30	Remove RHR Press Permissive from RHR-299A(B), Install Jumper to Defeat Pmp Discharge Press Interlock	May 17, 2001
01-01	Add Relays and Power Supplies to Monitor RXCP Status. Changes to RG1.97 Program (SE for DCR-3051, Rev 1)	March 7, 2001
01-17	Replace CCW Pumps	April 30, 2001
01-20	Special Test Data Collection for Control Rm A/C System (Determine Heatup Rate for Future Chiller Replacement)	May 22, 2001
01-27	Separate SW Discharge Lines From Trains A&B EDG Heat Exchangers	July 2, 2001
01-37	Testing to Obtain Sensor Data Generated by Loose Parts Monitor (LPM). DCR 3186 Upgraded the LPM	August 23, 2001

## **50.59 EVALUATIONS**

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<b><u>Number</u></b>	<b><u>Description</u></b>	<b><u>Rev/Date</u></b>
01-39	Changes Method of Operation of the SFP Cooling System as Defined in the Current Approved Analysis in TS	September 30, 2001
01-40	Update USAR to Correctly Describe Calibration Ranges and Sensitivities of R-30 and SPING Radiation Detectors	September 10, 2001
01-49 SGR	Eliminate Specific Dynamic Effects of Primary Piping Ruptures with Approved Leak-Before-Break Methodology	October 4, 2001
01-55	SW Flow Test to Obtain System Flow and Pressure Data at Various Locations at Different Plant Conditions, for Verification and Bench Marking Purposes	November 12, 2001
01-59	Install Safety Train Circuitry to Auto Close SW-4A(B) Upon Receipt of an ESF Signal Coincident with SW Header Low Pressure, Isolating SW to the Turbine Building	November 20, 2001

## **50.59 SCREENS**

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<b><u>Number</u></b>	<b><u>Description</u></b>	<b><u>Rev/Date</u></b>
CMP-38-07B	ED C-QA-1 Spare Battery Charger BRA/B-108 Installation to Removal from BRB-101	October 5, 2001
DCR 3026	Spurious Grd Alarm Coincident with Deenergized Pzr Htrs	October 7, 1998
DCR 3165	Modify TDAFW Pump Bearing Oil Sight-Glass	May 21, 2000
DCR 3166	Pressurizer Level Transmitter EQ Splices	May 22, 2000
DCR 3331	Interposing Relays for Control Room Status Lights	November 8, 2001
DCR 3334	Replace Instrument Air Header Isolation Valve IA-1403	October 7, 2001
DCR 3342	Removal of EDG Speed Sensitive Switch	October 23, 2001
DCR 3343	Containment Fan Coil Units C and D Housing Alteration	October 30, 2001
DCR 3353	Removal of Raychem Splice Assoc. with SV33075 Coil	October 31, 2001
GMP 251	Common Electrical Preventive Maintenance Task	August 8, 2001
PMP-01-08	A's EDG Startup Air Compressor Relief and Check Valve Testing and Inspection	August 11, 2001
PMP-33-01	SI - Safety Injection System QA-1 Pump Maintenance	August 15, 2001

## **WORK REQUESTS**

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<b><u>Number</u></b>	<b><u>Description</u></b>	<b><u>Rev/Date</u></b>
99-217621	Lowered High Alarm Setpoint from 80 to 60 Degrees F for Night Order "Operability of Service Water System"	November 29, 1999
99-217777	Install Test Switch and Relay to Provide Means of Testing Degraded Grid Under-Voltage Relays on Train A	May 5, 2000
00-002089	Change High Alarm Setpoint for CW Inlet Temperature TLA to 76.2 Degree F per PM 3109	June 13, 2000