January 29, 2002

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 50-305/01-15(DRP)

Dear Mr. Reddemann:

On December 31, 2001, the NRC completed an inspection at your Kewaunee Nuclear Power Plant. The enclosed report documents the inspection results which were discussed on January 3, 2002, with you, Mr. T. Coutu, 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.

No findings of significance were identified.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). From these audits, the NRC has concluded that your security program is adequate at this time.

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 System (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/

Roger Lanksbury, Chief
Branch 5
Division of Reactor Projects

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

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:	50-305/01-15(DRP)
Licensee:	Nuclear Management Company, LLC
Facility:	Kewaunee Nuclear Power Plant
Location:	N 490 Highway 42 Kewaunee, WI 54216
Dates:	November 9 through December 31, 2001
Inspectors:	J. Lara, Senior Resident Inspector Z. Dunham, Resident Inspector D. Jones, Reactor Engineer
Approved By:	Roger Lanksbury, Chief Branch 5 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000305-01-15(DRP), on 11/09-12/29/2001, Nuclear Management Company, LLC, Kewaunee Nuclear Power Plant. Resident Inspector Report.

The inspection was conducted by resident inspectors and a regional inspector. There were no findings identified during this inspection. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the Significance Determination Process does not apply are indicated by "No Color" or by the severity level of the applicable violation. 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.

A. Inspector-Identified Findings

No findings of significance were identified.

B. Licensee-Identified Findings

No findings of significance were identified.

Report Details

Summary of Plant Status

At the beginning of the inspection period, the plant was shutdown for the completion of a refueling outage and the replacement of the steam generators. The Unit was started up and achieved criticality on December 2, 2001, and achieved 100 percent power on December 20. The plant was operated at approximately 100 percent power for the remainder of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

During November 2001, the inspectors reviewed the facility design and the licensee's procedures to evaluate the facility's susceptibility to cold weather conditions. Additionally, the inspectors walked down selected areas to ensure that plant equipment, instrumentation, and support systems would not be susceptible to freezing. The inspectors also reviewed Operations Department Instruction, "Cold Weather Operation," dated December 13, 2001, which prescribed station actions for cold weather conditions. Specific equipment reviewed by the inspectors included the Circulating Water Recirculating Pump, the Technical Support Center Diesel Generator, and various area heating units. The inspection included a review of the system design and maintenance history to verify that the equipment would meet its design functions during cold weather operations.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

a. Inspection Scope

The inspectors performed partial walkdowns of the emergency diesel generator fuel oil system on December 26, 2001, and the Auxiliary Feedwater System prior to the Unit startup on November 30, 2001. The inspectors reviewed the system lineup checklists, Updated Safety Analysis Report (USAR), Technical Specifications (TSs), normal operating procedures, and system drawings to verify the correct system lineup. Valve positions and electrical power availability were examined to verify that valve and electrical breaker positions were consistent and in accordance with the licensee's procedures and design documentation. The inspectors also examined the material condition of the system components.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Fire Zone Inspections

a. Inspection Scope

The inspectors walked down the following areas to assess the overall readiness of fire protection equipment and barriers:

- 'A' and 'B' Diesel Generator Rooms
- Turbine Building Basement
- Screenhouse
- Technical Support Center Diesel Generator Room
- Auxiliary Building

Emphasis was placed on the control of transient combustibles and ignition sources, the material condition of fire protection equipment, and the material condition and operational status of fire barriers used to mitigate fire damage or propagation. Additionally, fire hoses, sprinklers, portable fire extinguishers, and fire detection devices were inspected to verify that they were installed at their designated locations, were in satisfactory physical condition, and were unobstructed. Passive features such as fire doors, fire dampers, and fire zone penetration seals were also inspected to verify that they were in satisfactory condition and capable of providing an adequate fire barrier.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On December 17, 2001, the inspectors observed a simulator dynamic requalification exam to evaluate crew performance, formality of communications, and annunciator response. Additionally, the inspectors evaluated the crew's implementation of the facility's abnormal and emergency operating procedures, oversight and direction provided by the shift manager and control room supervisor, and the adequacy of identification and reporting of the event classification in accordance with the facility's emergency plan. The inspectors also compared the simulator board configuration with the control room board configuration to ensure that the simulator environment matched the actual control room environment as closely as possible. The inspectors observed the post-scenario critique to determine whether performance issues were accurately identified and addressed.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the Maintenance Rule, 10 CFR 50.65, for the systems listed below. The inspectors reviewed recent maintenance rule evaluations to assess: (1) scoping in accordance with 10 CFR 50.65; (2) characterization of systems, structures, and components (SSCs) failures; (3) SSC safety significance classification; (4) 10 CFR 50.65(a)(1) or (a)(2) classification for the SSCs; and (5) performance criteria for SSCs classified as (a)(2) or goals and corrective actions for SSCs classified as (a)(1). The inspectors also interviewed licensee staff and evaluated the licensee's monitoring and trending of performance data.

Specific systems and/or component failures evaluated were:

- Nuclear Instrumentation, System 48 - December 17, 2001
- Instrument Bus Inverter (BRA-111) Failure to Switch to Normal Power Supply, System 38 - December 17, 2001
- Turbine Building and Screenhouse Ventilation, System 16 - December 19, 2001

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and assessment of plant risk, scheduling, and configuration control during the planned and emergent work activities listed below. In particular, the licensee's planning and management of maintenance was evaluated to verify that on-line risk was acceptable and in accordance with the requirements of 10 CFR 50.65(a)(4). Additionally, the inspectors compared the assessed risk configuration against the actual plant conditions and any in-progress evolutions or external events to verify that the assessment was accurate, complete, and appropriate. Licensee actions to address increased on-line risk during these periods were also inspected to verify that actions were in accordance with approved administrative procedures.

- Maintenance activities scheduled week ending December 29, 2001
- Two trains of Auxiliary Feedwater out of service simultaneously for surveillance testing, December 5, 2001
- Instrument Bus Inverter failure to switch to normal power supply, December 17, 2001

b. Findings

No findings of significance were identified.

1R14 Non-Routine Evolutions (71111.14)

.1 Unit Heatup and Startup Following Steam Generator Replacement Outage

a. Inspection Scope

The inspectors observed operations personnel during the following activities to verify that Unit operations, heatup, and startup was conducted in a safe and conservative manner.

- Operations control and conduct of refueling cavity draindown following refueling operations.
- Control room activities to verify the adequacy of operations shift management oversight during non-routine evolutions.
- Reactor startup and dilution to criticality to ensure that all technical specifications were met prior to initial criticality.
- Control room staff performance of overspeed testing of main turbine following plant startup to evaluate control room communications and reactivity management.

The inspectors reviewed technical specifications, operations procedures, and facility administrative procedures to determine the acceptance criteria for the inspection activities.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed design basis information and technical specification requirements to verify the technical adequacy of the operability evaluations listed below and to verify that 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:

- Kewaunee Assessment Process (KAP) Work Order (WO) 01-08057, Instrument Power Breaker for Channel 4 Power Range Instrument, N-44, Inadvertently Opened, December 8, 2001
- KAP WO 01-19725, Missing Flash Arrester on ‘B’ Reactor Coolant Pump Oil Collection Tank, November 28, 2001

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds (OWAs) (71111.16)

.1 Operator Rounds

a. Inspection Scope

On December 16, 2001, the inspectors accompanied a Nuclear Auxiliary Operator during routine equipment rounds to determine whether there were any unidentified or proceduralized operator work-arounds which had not been captured in the licensee's operator work-around process. Specifically, the inspectors observed whether there were any equipment issues which required additional operator contingency actions which may impact emergency operations.

b. Findings

No findings of significance were identified.

.2 Tagout Review

a. Inspection Scope

On December 27, 2001, the inspectors conducted a review of all outstanding and open tagouts to determine whether there were any current equipment issues which may require actions or compensatory measures which could impact emergency operations or be required to ensure the fulfillment of a safety function.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed design descriptions and drawings to determine the scope of Design Change Request (DCR) 3338, which was approved to implement modifications to the Service Water (SW) Turbine Building isolation valves (SW-4A and SW-4B). The inspectors reviewed the associated safety evaluations to verify consideration of USAR, TS, and 10 CFR 50.59 requirements. Other inspection attributes included incorporation of design criteria such as channel redundancy, separation, and single failure analysis. The inspectors also reviewed the associated post-modification testing results to verify acceptable system performance and compliance with test acceptance criteria.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 DCR 3357, Replacing Valves and Actuator for SW-301A and SW-301B

a. Inspection Scope

On December 16, 2001, the inspectors reviewed the post-maintenance testing activities associated with the replacement of the 'B' Diesel Generator Jacket Water Cooler Outlet Isolation Valve, SW-301B. The inspectors reviewed test results of the installation of the new actuator and also walked down the affected equipment and components to verify that Valve SW-301B was left in a condition to perform its safety function. Documents reviewed included KAP WO 01-19918, 4-inch Valve Control Service Water from Diesel Generator Oil Cooler, and DCR 3357 "Replacing valves and actuator for SW-301A and SW-301B."

b. Findings

No findings of significance were identified.

.2 Auxiliary Feedwater Pump Discharge Check Valve

a. Inspection Scope

On December 5, 2001, the inspectors observed and reviewed the post-maintenance testing associated with inspection and maintenance of the 'A' train and turbine-driven auxiliary feedwater pump discharge check valves. The maintenance was conducted earlier during the licensee's refueling outage. The inspectors reviewed operations procedures and associated maintenance work orders to determine whether the tests were adequate for the scope of the maintenance which had been performed and that the test acceptance criteria were clear and demonstrated operational readiness consistent with design and licensing basis documents.

b. Findings

No findings of significance were identified.

.3 Pressurizer Block Valves

a. Inspection Scope

The inspectors reviewed the completed work orders and post-maintenance test results associated with the pressurizer block valves PR-1A and PR-1B to verify that the testing performed demonstrated valve operability based on the actual maintenance performed. Post-maintenance testing included dynamic testing and valve stroking tests in accordance with partial surveillance procedures.

b. Findings

No findings of significance were identified.

.4 120-Volts Alternating Current Inverter

a. Inspection Scope

The inspectors reviewed the documented work order and post-maintenance test results associated with the 120-volts alternating current vital inverter to determine if the test scope was appropriate based on the actual work performed. The licensee had performed corrective maintenance on the inverter due to failed static switch instrumentation cards. The testing performed included frequency, continuity, resistance, and voltage measurements, as well as a final functional check.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

.1 Refueling Activities

a. Inspection Scope

During the week of November 17, 2001, the inspectors periodically observed the licensee's fuel movement activities, which consisted of loading the core following the completion of the licensee's steam generator replacement project. The inspectors reviewed appropriate sections of the USAR, Procedure SP-53-079, "Refueling System Interlocks Test," Revision S, and Procedure RF-03.01, "Fuel Movement During a Refueling Outage," Revision E, to establish the inspection acceptance criteria. The inspectors also attempted to verify that containment closure was appropriately set, that appropriate communications were established between the control room and the operating floor of containment, that a licensed Senior Reactor Operator was designated in charge of the refueling operations, and that other requirements of TS 3.8, "Refueling Operations," were met during the fuel movement. Additionally, the inspectors reviewed refueling system interlocks test results to verify that they were satisfactorily completed. Finally, the inspectors observed the licensee's control of foreign material around the refueling cavity and the spent fuel pool.

b. Findings

No findings of significance were identified.

.2 Licensee Control of Outage Activities

a. Inspection Scope

Periodically during this inspection period while the Unit was shutdown for a refueling

outage, the inspectors reviewed General Nuclear Procedure 08.04.01, "Shutdown Safety Assessment," Revision D, to evaluate the assessments and to verify that the assessments accurately reflected shutdown conditions, that there was no unrecognized increase in plant risk, and that compensatory measures were implemented when appropriate. This evaluation included periodic walkdowns of safety-related electrical power systems, spent fuel pool cooling while the core was off-loaded to the spent fuel pool, and containment closure, when applicable. Additionally, prior to and during refueling activities, the inspectors walked down reactor coolant instrumentation to verify that refueling cavity level and temperature was properly monitored. The inspectors reviewed various operations department system lineup checklist and operating procedures, the USAR, and the TSs to determine the inspection acceptance criteria. Additionally, the inspectors conducted independent walkdowns of plant areas containing safety-related equipment to verify the implementation of seismic storage requirements and housekeeping.

b. Findings

No findings of significance were identified.

.3 Monitoring of Heatup and Startup Activities

a. Inspection Scope

During the unit heatup and startup, the inspectors performed and/or observed the following activities to ensure that all requirements were met and established prior to initiating mode changes and achieving initial criticality. The inspectors reviewed operations checklist, the TSs, and the USAR to establish the inspection criteria.

- Measured identified and unidentified Reactor Coolant System (RCS) leakage less than TS-allowed value prior to achieving criticality.
- Independent verification of plant heatup rates to ensure that rate limits were not exceeded.
- Independent walkdown of containment prior to startup to verify that debris had not been left which could affect performance of the containment sumps.
- Containment closeout issues resolved and integrity set prior to startup.
- Walkdowns of control room boards and indications to verify that equipment lineups and parameters were acceptable to support plant startup and unit criticality.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed surveillance testing on risk-significant equipment to verify that the equipment was capable of performing its intended safety function and that the

surveillance tests satisfied the requirements contained in the TSs and the licensee's procedures, and that the equipment was capable of meeting its design function. During the surveillance tests, the inspectors reviewed the test to verify that it was adequate to demonstrate operational readiness consistent with the design and licensing basis documents, and that the testing acceptance criteria were clear. Portions of the test were observed to verify that the test was performed as written, that all testing prerequisites were satisfied, and that the test data were complete, appropriately verified, and met the requirements of the testing procedure. Following the completion of the test where applicable, the inspectors conducted walkdowns of the affected equipment to verify that any 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:

- Surveillance Procedure (SP) 33-191, "Safety Injection Flow Test," Revision S - November 14, 2001
- Special Operating Procedure-SW-02-17, "SW Flow Test - Train B," Revision B - November 14, 2001
- SP 54-064, "Turbine Overspeed Trip Test," Revision Y - December 3, 2001
- SP 33-110, "Diesel Generator Automatic Test," Revision AC - November 23, 2001
- SP 34-99, "RHR Pump and Valve Test - IST," Revision AQ - December 19, 2001

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

a. Inspection Scope

The inspectors reviewed the licensee's PI data collection process and historical data from January 1 to October 31, 2001, to verify the accuracy of collected and submitted data. Additionally, the inspectors reviewed corrective action records, monthly operating reports, and control room logs to independently verify the data that the licensee had collected. The inspectors also utilized NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 1, to establish criteria for the acceptability and accuracy of the collected and reported data. The following PIs were evaluated:

- Emergency AC Power System Safety System Unavailability
- Heat Removal System [Auxiliary Feedwater] Safety System Unavailability

b. Findings

No findings of significance were identified.

4OA5 Other

.1 Steam Generator Replacement - Cutting, Welding, and Nondestructive Examination (NDE) 50001

a. Inspection Scope

The inspectors conducted a review of cutting, welding, and NDE procedures, welding and NDE personnel training and qualification records, work packages, and radiographs. The inspectors made in-process observations of the cutting of the RCS hot and cold legs and steam generator “A” girth weld, the automatic welding of steam generator “B” RCS hot and cold legs (FW-1 and FW-2) welds, and the manual welding of steam generators “A” and “B” girth welds. The inspectors also reviewed radiographs of the “A” and “B” steam generator girth welds, the “A” and “B” RCS hot and cold legs, main steam, and feedwater; magnetic particle surface examination records; liquid penetrant surface examination records; and pre-service ultrasonic eddy-current examination records. In addition, the inspectors conducted a review of post-weld heat treatment records for the main steam and girth welds. The reviews and observations were performed to verify that the licensee performed the work in accordance with applicable codes.

The inspectors also reviewed a sample of cutting, welding, and NDE problems documented in the licensee’s corrective action program, to assess conformance with 10 CFR Part 50 Appendix B, Criterion XVI, “Corrective Action,” requirements.

b. Findings

No findings of significance were identified.

.2 Steam Generator Replacement - Steam Generator Instrument Calibrations (50001)

A. Inspection Scope

The inspectors conducted a review of steam generator water level and feedwater flow instrumentation calibrations to ensure that instrumentation associated with the monitoring and control of the recently replaced steam generators would adequately perform their design function. Additionally, the inspectors reviewed primary-to-secondary leak rate test results following plant heatup and startup to verify the integrity of the facility’s recently replaced steam generators. The following documents and procedures were reviewed in addition to associated safety reviews to establish the inspection acceptance criteria:

- SP 05A-28A, "Steam Generator Level Transmitters Calibration," Revision K
- SP 05A-034C, "Feedwater Flow Transmitters Calibration," Revision O
- SP-05A-300, "Steam Generator A Wide Range Level Transmitter Calibration," Revision D
- SP 36-082, "Reactor Coolant System Leak Rate Check," Revision Z
- RCC-088, "Primary to Secondary Leak Rate Data," Revision M

b. Findings

No findings of significance were identified.

.3 Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles (Temporary Instruction 2515/145)

a. Inspection Scope

The inspectors performed a review of the licensees' activities in response to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," to verify compliance with applicable regulatory requirements. In accordance with the guidance of NRC Bulletin 2001-01, the Kewaunee Nuclear Power Plant was characterized as belonging to the sub-population of plants (Bin 3) that were considered to have a moderate susceptibility to primary stress corrosion cracking based upon a susceptibility ranking of more than 5 but less than 30 effective full power years of operation from that of the Oconee Nuclear Station, Unit 3 condition. As a result, the Kewaunee Nuclear Plant responded to NRC Bulletin 2001-01 by performing a direct visual examination of the reactor vessel head. The inspectors interviewed inspection personnel, reviewed procedures and inspection reports, including photographic documentation, to assess the licensee's efforts in conducting an "effective" visual examination of the reactor vessel head.

b. Evaluation of Inspection Requirements

a. Were the licensee's examinations performed by qualified and knowledgeable personnel?

The inspectors determined that the examinations were performed by personnel certified in both VT-1 and VT-2 Methods to at least Level II, with one individual certified to a Level III. In addition, the licensee provided the individuals with training specific to the guidelines described in the Electric Power Research Institute (EPRI), "Visual Examination for Leakage of PWR Reactor Head Penetrations."

b. Were the licensee's examinations performed in accordance with approved and adequate procedures?

The inspectors verified that the examinations were conducted in accordance with an approved plant, Nuclear Engineering Procedure (NEP) No. 15, Revision 0, "Visual Examination for In-service Inspection," and the guidelines established in EPRI's "Visual Examination for Leakage of PWR Reactor Head Penetrations." The inspectors determined that the procedure was appropriate for the examinations.

3. Were the licensee's examinations adequately able to identify, disposition, and resolve deficiencies?

The inspectors determined through a review of post-examination records, discussions with the personnel that conducted the examinations, and a review of the procedure, that the examinations were sufficient to identify any deficiencies. The licensee's

examinations did not identify any deficiencies, therefore, the inspectors did not assess the licensee's efforts to disposition or resolve deficiencies.

4. Were the licensee's examinations capable of identifying the primary stress corrosion cracking phenomenon described in the Bulletin?

The inspectors determined through interviews with inspection personnel, and reviews of procedures and inspection reports, including photographic documentation of the examinations, that the licensee's efforts were capable of identifying the phenomenon described in the Bulletin. The inspectors determined that the inspection personnel had access to all the head penetrations, 42 in total, with no obstructions or interferences.

5. What was the condition of the reactor vessel head (debris, insulation, dirt, boron from other sources, physical layout, viewing obstructions)?

The Kewaunee pressure vessel head had block contoured vessel head insulation, consisting of Mirror Panels fabricated of 4-inch thick perforated metal block insulation. The inspectors determined that prior to the examinations, the licensee completely removed the insulation and shroud. The inspectors also determined through discussions with the inspection personnel that the as-found pressure vessel head condition was clean (free of debris, insulation, dirt), with no viewing obstructions to the exam. The inspection personnel fully examined the 42 pressure vessel head penetrations, including the 3/4" head vent.

6. Could small boron deposits, as described in the bulletin, be identified and characterized?

The inspectors verified, through interviews with inspection personnel and review of the photographic record of the examination, that small boron deposits, as described in the Bulletin, could be identified; given the cleanliness and accessibility of the pressure vessel head penetrations. However, no indications were found on the 42 penetrations.

7. What materiel deficiencies (associated with the concerns identified in the bulletin) were identified that required repair?

Through a review of the examination records, the inspectors determined the inspection personnel did not identify any materiel deficiencies associated with any of the 42 pressure vessel head penetrations.

8. What, if any, significant items that could impede effective examinations and/or ALARA issues were encountered?

The inspectors verified that, upon removal of the shroud and pressure vessel head insulation, there were no impediments to the examinations. Collective radiation doses received as a part of the examinations included 1.706 person-rem, associated with removal of the insulation, and 0.339 person-rem, associated with the direct visual inspection, for a total of 2.045 person-rem.

c. Findings

No findings of significance were identified.

4OA6 Management Meetings

Exit Meeting Summary

On January 3, 2002, the resident inspectors presented the inspection results to Mr. M. Reddemann, Mr. T. Coutu, and other members of the Nuclear Management Company 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.

Interim Exit Meeting Summary

Senior Official at Exit:	Mark Reddemann, Site Vice President
Date:	November 7 and 21, 2001
Proprietary:	No
Subject:	Steam Generator Replacement Inspection

4OA7 Licensee-Identified Violation

None.

KEY POINTS OF CONTACT

Nuclear Management Company, LLC

W. Bosacki, Installation Engineer
R. Farrell, Outage Manager
J. Fletcher, Security Manager
G. Harrington, Licensing
T. Coutu, Plant Manager, Kewaunee Plant
J. Krueger, Steam Generator Replacement Shift Manager
M. Kwitek, Assistant Plant Manager, Maintenance
J. Palmer, Mechanical Maintenance Superintendent
M. Reddemann, Site Vice President
J. Schweitzer, Manager, Engineering and Technical Support
J. Stoeger, Superintendent, Operations
T. Taylor, Assistant Plant Manager, Operations
M. Van Noy, Steam Generator Replacement Licensing Engineer
T. Webb, Nuclear Licensing Director

Nuclear Regulatory Commission - RIII

R. Lanksbury, Branch Chief, DRP, Branch 5

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
ALARA	As Low As Is Reasonably Achievable
CFR	Code of Federal Regulations
DCR	Design Change Request
DRP	Division of Reactor Projects, Region III
EOP	Emergency Operating Procedure
EPRI	Electric Power Research Institute
KAP	Kewaunee Assessment Process
LER	Licensee Event Report
NCV	Non-Cited Violation
NDE	Nondestructive Examination
NRC	Nuclear Regulatory Commission
OWA	Operator Work-Around
PI	Performance Indicator
RCS	Reactor Coolant System
SP	Surveillance Procedure
SSC	System, Structure, and Component
SW	Service Water
TS	Technical Specification
URI	Unresolved Item
USAR	Updated Safety Analysis Report
WO	Work Order

LIST OF DOCUMENTS REVIEWED

1RO1 Adverse Weather Protection

	Operations Department Instruction - Cold Weather Operation	December 13, 2001
USAR, Section 2	Site	Revision 16
RCC-418	Technical Support Center Diesel Generator Cooling Water Sampling	Revision A

1RO4 Equipment Alignment

N-DGM-CLA	Diesel Generator A Pre-startup Checklist	Revision I
N-DGM-CLB	Diesel Generator B Pre-startup Checklist	Revision H
USAR, Section 6.6	Auxiliary Feedwater System	Revision 16
USAR, Section 8.2.3	Emergency Power	Revision 16
N-FW-05B-CL	Auxiliary Feedwater System Pre-startup Checklist	Revision AI

1RO5 Fire Protection

FPP 08-07	Control of Ignition Sources	Revision D
FPP 08-08	Control of Transient Combustibles	Revision A
FPP 08-09	Barrier Control	Revision C
N-FP-08-CL	Fire Protection System Checklist	Revision AL
	Appendix R Design Description	December 14, 2000
	Kewaunee Fire Protection Program Plan	Revision 4
KAP WO 01-08205	Fire Pump Jockey Pump Discharge Check Valve Back Leakage	

1R12 Maintenance Rule Implementation

NAD 08.20	Maintenance Rule Implementation	Revision B
GNP 08.20.01	Maintenance Rule Scoping and Performance Criteria	Revision B

GNP 08.20.2	Maintenance Rule Data Evaluation	Revision B
GNP 08.20.3	Maintenance Rule Periodic Reviews	Revision A
GNP 08.20.4	Maintenance Rule MRFF and MPFF Evaluations	Revision A
GNP-08.20.05	Maintenance Rule (a)(1)/(a)(2) Evaluations	Revision A
KAP WO 01-11491	N-32 Not Pegging High When Transitioning Out of Source Range	
KAP WO 01-16663	Meter 4122901 Out of Tolerance During SP 48-287A-1	
KAP WO 01-19846	N-32 Output Failing Downscale	
KAP WO 01-08219	Inverter BRA-111 Switched to Alternate Supply	
A-DC-38	DC Supply Distribution System	Revision V
KAP WO 01-019837	BRA-111 Instrument Bus Inverter Trouble	
KAP WO 01-019957	BRA-111 Inverter Transferring to Alternate	
KAP WO 01-018427	BRA-111 Instrument Bus Inverter Trouble	
KAP WO 01-004148	Inspect/Clean Inverter Components	
KAP WO 01-004961	Clean/Inspect Diesel Generator A Room Vent Supply Fan	
KAP WO 01-004962	Clean/Inspect Diesel Generator B Room Vent Supply Fan	
PMP 16-04	TAV-QA-1 Screenhouse and Diesel Room Fan Maintenance	Revision M
TAV-QA-1	Screenhouse and Diesel Generator Room Fan Maintenance	Revision M

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

NAD 08.2	Work Request/Work Order	Revision D
GNP 08.21.01	Risk Assessment for Plant Configurations	Revision A
NAD 08.21	Configuration Risk Management	Revision A

GNP 08.02.01	Work Request/Work Order Processing	Revision F
Individual Plant Examination, Section 5	Core Damage Frequency Quantification	

1R14 Non-Routine Evolutions

N-0-01	Plant Startup from Cold Shutdown Condition to Hot Shutdown Condition	Revision AS
N-0-01-CLC	Plant Requirements Before Exceeding 350F	Revision V
N-0-01-CLD	Containment Integrity Checklist	Revision AI
N-0-02	Plant Startup From Hot Shutdown to 35 Percent Power	Revision AG
N-0-02-CLB	Pre-Critical Checklist	Revision AM
N-FH-53G	Reactor Cavity Draining to RWST Using ICS Full Flow Recirc Line	Revision A
N-RHR-34	Residual Heat Removal System Operation	Revision AP
SP 54-064	Turbine Overspeed Trip Test	Revision Y

1R15 Operability Evaluations

A-MI-87	Bistable Tripping for Failed Reactor Protection or Safeguards Inst.	Revision M
SP-48-004I	Nuclear Power Range Channel 3 (Blue) N-43 Quarterly Calibration	Revision B
KAP 01-019801	Install Flame Arrester on the B RXCP Oil Collection Tank	
KAP WO 02-00091	Incomplete Work Instructions	

1R17 Permanent Plant Modifications

Design Change 3338	Service Water Isolation to the Turbine Building	
Design Drawing ISIM-202-1	ISI Flow Diagram	Revision M/3338-1

Design Drawing E-1509	Schematic Diagram-Solenoid Valves SV-33043,044	Revision N/3338-1

1R19 Post-Maintenance Testing

KAP WO 01-019918	4 Inch Valve Control Service Water from D/G Oil Cooler	
DCR 3357	Replacing Valves and Actuator for SW-301A and SW-301B	
KAP WO 01-014601	AFW 4A Did Not Seat Properly	
KAP WO 01-014602	AFW 1C Could Have Similar Problems to Those Identified with AFW-1A & 4A	
SP 05B-283	Motor Driven AFW Pumps Full Flow Test- IST	Revision K
SP 05B-284	Turbine Driven AFW Pump Full Flow Test - IST	Revision L
KAP WO 01-020013	Two Work Orders did not Specify Appropriate Retest Requirements	
KAP WR 01-3577	Verify Valve Operability Following Scheduled Maintenance of PR-1A	
KAP WR 01-3578	Verify Valve Operability Following Scheduled Maintenance of PR-1B	
SP 55-167-5	Miscellaneous Systems Valve Timing Tests (IST)	Revision R
KAP WO 01-021310	BRA-111 Inst Inverter Problem Determined to be Internal	
E-3440	Drawing - S/D Static Inverter BRA-111	Revision C
X-K02534-3	Drawing - Schematic 7.5 KVA Inverter	Revision C
PMP 38-08	EDC-DC Supply & Distribution QA-1 7.5 KVA Inverter Maintenance	Revision F
KAP WO 01-08219	Invertor BRA-111 Switched to Alternate Supply and Would Not Switch Back to Normal	

1R20 Refueling and Other Outage Activities

RF-01.00	KNPP Refueling Procedure	Revision I

N-FH-53-CLB	Refueling - Containment Integrity CL, S/G Secondary Side Open	Revision E
RF-03.01	Fuel Movement During a Refueling Outage	Revision E
RF-03.02	Refueling Equipment Operating Instruction	Revision A
RXT-01.00	Initial Criticality by Dilution	Revision T
N-0-01-CLC	Plant Requirements Before Exceeding 350F	Revision V
N-0-01-CLD	Containment Integrity Checklist	Revision AI
N-0-02	Plant Startup From Hot Shutdown to 35 Percent Power	Revision AG
N-0-02-CLB	Pre-Critical Checklist	Revision AM

1R22 Surveillance Testing

SP 33-191	Safety Injection Flow Test	Revision S
C10856	Calculation - Determination of Acceptance Criteria for B Safety Injection Pump	
KAP 01-016362	SI Loop A And Loop B Cold Leg Flow Valve 667.8 GPM	
SOP-SW-02-17	SW Flow Test - Train B	Revision B
SP 54-064	Turbine Overspeed Trip Test	Revision Y
SP 33-110	Diesel Generator Automatic Test	Revision AC
IEEE 387-1977	Criteria for Diesel Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations	
SP 34-99	RHR Pump and Valve Test - IST	Revision AQ

4OA1 Performance Indicator Verification

NEI 99-02	Regulatory Assessment Performance Indicator Guideline	Revision 1
	Reactor Operator and Shift Manager Logs	January to October 31, 2001

4OA5 Other

RT-01-019	SG A, FW-1, Hot Leg Elbow/Safe-End Radiographs	
RT-01-020	SG A, FW-2, Cold Leg Safe-End/Elbow Radiographs	
RT-01-025	SG B, FW-1, Hot Leg Elbow/Safe-End Radiographs	
RT-01-026	SG B, FW-2, Cold Leg Safe-End/Elbow Radiographs	
RT-01-040	Steam Generator “A”, FW-1, Lower Assembly to Steam Dome Radiographs	
RT-01-043	Steam Generator “B”, FW-1, Lower Assembly to Steam Dome Radiographs	
RT-01-004	Steam Generator “A”, FW-18, Feedwater Nozzle Adapter to Nozzle Radiographs	
RT-01-045	Steam Generator “A”, FW-3, Main Steam Nozzle Reducer to Elbow Radiographs	
RT-01-061	Steam Generator “B”, FW-4, Feedwater Pipe to Pipe Radiographs	
PHT-1	Postweld Heat Treatment of Field Welds	December 2, 1992
GWS-TC	Thermocouple Attachment	April 1, 1996
CHP-006	Girth Weld Postweld Heat Treatment	October 9, 2001
MT-002	Steam Generator “B”, Transition Cone Side Weld End Prep	
SP 05A-28A	Steam Generator Level Transmitters Calibration	Revision K
SP 05A-034C	Feedwater Flow Transmitters Calibration	Revision O
SP-05A-300	Steam Generator A Wide Range Level Transmitter Calibration	Revision D
SP 36-082	Reactor Coolant System Leak Rate Check	Revision Z
RCC-088	Primary to Secondary Leak Rate Data	Revision M
RT-ASME III-87A	Radiographic Examination	February 10, 1999
NEP NO. 15.6	Liquid Penetrant Examination For Inservice Inspection	August 29, 1995

NEP NO. 15.13	Ultrasonic Examination Of Reactor Coolant Pipe For Inservice Inspection	January 20, 1998
M-SDB-373	Work Plan and Inspection Record (WP&IR), SG “B” Reinstall Steam Dome	August 21, 2001
M-SDB-373	Work Plan and Inspection Record (WP&IR), SG “B” Reinstall Steam Dome	August 21, 2001
M-RCS-366	Work Plan and Inspection Record (WP&IR), S.G. “A” RCS Severance and Rewelding, Temp. Col. Leg Supports, Col. Foot Bolts, and Col. Leg Adapter Supports	July 30, 2001
CP-M-5	System Cleanliness/Foreign Material Exclusion	April 20, 2001
CP-12	Control of Temporarily Removed Permanent Plant Equipment	March 30, 2001
WKP-S-ET 175	ET Inspection of Steam Generator Tubing	November 15, 2000
P3(G3)-A-Lh(CVN+70)	Manual Shielded Metal Arc Welding Procedure Specification	July 3, 2001
P8-T(RA)	Machine Gas Tungsten Arc Welding Procedure Specification	April 23, 2001
	Bechtel Non-Conformance Report Log	November 7, 2001