April 25, 2003

Mr. Thomas Coutu
Site Vice President
Kewaunee Nuclear Plant
Nuclear Management Company, LLC
N490 Hwy 42
Kewaunee, WI 54216-9511

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT
NRC INTEGRATED INSPECTION REPORT 50-305/03-02

Dear Mr. Coutu:

On March 31, 2003, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Kewaunee Nuclear Power Plant. The enclosed report documents the inspection findings which were discussed on April 1, 2003, with you and 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.

Based on the results of this inspection, the NRC identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of the Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region III, 801 Warrenville Road, Lisle, IL 60532-4351; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector Office at the Kewaunee facility.

Since the terrorist attacks on September 11, 2001, the NRC has issued two Orders (dated February 25, 2002, and January 7, 2003) and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance access authorization. The NRC also issued Temporary Instruction 2515/148 on August 28, 2002, that provided guidance to inspectors to audit and inspect licensee implementation of the interim compensatory measures required by the February 25th Order. Phase 1 of Temporary Instruction 2515/148 was completed at all commercial nuclear power plants during 2002, and the remaining inspections are scheduled for completion in 2003. Additionally, table-top security drills were conducted at several licensees to evaluate the impact of expanded adversary characteristics and the interim compensatory measures on licensee protection and mitigative strategies. Information gained and discrepancies identified during the audits and drills were reviewed and dispositioned by the Office of Nuclear Security and Incident Response. For 2003, the NRC will continue to monitor overall safeguards and security controls, conduct inspections, and resume force-on-force exercises at selected power plants. Should threat conditions change, the NRC may issue additional Orders, advisories, and temporary instructions to ensure adequate safety is being maintained at all commercial power reactors.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made 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/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Patrick Louden, Chief
Branch 5
Division of Reactor Projects

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

Enclosure: Inspection Report 50-305/03-02

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

DOCUMENT: G:\kewa\Kew 2003002.wpd

To receive a copy of this document, indicate in the box "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RIII		RIII	E				
NAME	MKunowski:dtp		PLouden					
DATE	04/23/03		04/25/03					

OFFICIAL RECORD COPY

ADAMS Distribution:
WDR
DFT
JGL1
RidsNrrDipmIipb
GEG
HBC
JFL
C. Ariano (hard copy)
DRPIII
DRSIII
PLB1
JRK1

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-305
License No:	DPR-43
Report No:	50-305/03-02
Licensee:	Nuclear Management Company, LLC
Facility:	Kewaunee Nuclear Power Plant
Location:	N490 Highway 42 Kewaunee, WI 54216
Dates:	December 29, 2002, through March 31, 2003
Inspectors:	J. Lara, Senior Resident Inspector Z. Dunham, Resident Inspector T. Madeda, Physical Security Inspector D. Nelson, Radiation Specialist
Approved By:	Patrick Louden, Chief Branch 5 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000305-03-02; Nuclear Management Company, LLC; on 12/29/02-3/31/03; Kewaunee Nuclear Power Plant; Operability Evaluations

This report covers a 3-month period of baseline resident inspection and announced baseline inspections in radiation protection and physical security. The inspections were conducted by the resident inspectors and Region III inspectors. One Green finding with an associated Non-Cited Violation (NCV) was identified. 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 may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000."

A. Inspection Findings

Cornerstone: Barrier Integrity

- Green. The inspectors identified a finding of very low risk significance for the licensee's failure to monitor and log axial flux difference after disabling the power range axial flux monitor and computer alarm.

  The finding was of greater than minor risk significance because the operators failure to log and assess axial flux difference with the alarm disabled as required by Technical Specifications inhibited the operators' ability to trend changing core flux conditions. This failure to log and assess axial flux difference could affect fuel cladding performance which is an attribute of the Barrier Integrity Cornerstone. The finding was of very low risk significance because although the finding impacted the Barrier Integrity Cornerstone, it affected the fuel barrier and not the reactor coolant system barrier and no actual abnormal axial flux difference existed during the time that the axial flux monitor alarm was disabled. The finding also affected the cross-cutting area of Human Performance because during the course of establishing a fixed signal in the Process Computer, operators were conducting activities beyond the bounds of approved procedural guidance. This finding was determined to be a Non-Cited Violation of Technical Specification 3.10.b.13. (Section 1R15)

B. Licensee-Identified Violations

No findings of significance were identified.

REPORT DETAILS

Summary of Plant Status

The plant was operated at approximately 100 percent power for most of the period.

1. REACTOR SAFETY

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

1R04 Equipment Alignment (71111.04)

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted partial walkdowns of the system trains listed below while the opposite train of equipment was out-of-service to verify that the systems were correctly aligned to perform their design safety function. In preparation for the walkdowns, the inspectors reviewed the system lineup checklists, normal operating procedures, abnormal and emergency operating procedures, and system drawings to verify the correct system lineup. During the walkdowns, the inspectors also examined valve positions and electrical power availability to verify that valve and electrical breaker positions were consistent with, and in accordance with, the licensee's procedures and design documentation. The material condition of the equipment was also inspected.

- Service Water Train 'A' - January 22, 2003
- Diesel Generator Train 'A' - February 6, 2003
- Residual Heat Removal Train 'B' - March 19, 2003

b. Findings

No findings of significance were identified.

.2 Complete Walkdown of Chemical and Volume Control System

a. Inspection Scope

During the week of December 30, 2002, the inspectors conducted a semi-annual walkdown of a risk significant system. The inspectors selected the chemical and volume control system since the system was ranked one of the ten most important systems for risk at the facility. To verify the proper system lineup, the inspectors reviewed operations procedures, including the system lineup checklist and normal and abnormal procedures, the Updated Safety Analysis Report (USAR), system drawings, and vendor manuals to verify that the licensee's procedures did not prescribe any actions which were contrary to the design basis requirements for the system. Additionally, the inspectors reviewed current temporary design changes, operator workarounds and the

licensee corrective action program database to determine if there were any outstanding system deficiencies which could prevent the system from performing its design function. Using the system lineup checklist, the inspectors walked down system components to verify that valves were correctly positioned, electrical power was correctly aligned, and that support systems were operational. During the walkdown, the inspectors also checked equipment labeling, verified that hangars and support structures were installed properly, and evaluated the overall material condition of the system. The inspectors also conducted a general review of the licensee's corrective action database records to determine whether the licensee was adequately identifying equipment alignment problems for other risk significant systems at an appropriate threshold.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

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

- Turbine Building Basement - January 22, 2003
- Monitor Tank, Contaminated Storage and Boric Acid Tank Area - January 31, 2003
- Auxiliary Building Basement - February 21, 2003
- Charging Pump Room - February 21, 2003
- Non-Safety Related 4.16 kV electrical buses 1 and 2 Rooms - February 21, 2003
- Hot Chemistry Lab and Shield Building Filter Assembly Area - March 21, 2003
- Auxiliary Building Fan Floor - March 25, 2003
- Condensate Storage Tanks and Reactor Water Makeup Storage Tanks Area - March 26, 2003

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, and portable fire extinguishers were inspected to verify that they 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 February 10, 2003, 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 actual control room board configuration for consistency between the two 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 Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the maintenance history of the systems and components listed below to determine the appropriateness of maintenance work practices and identification of potential common cause failures. Additionally, the inspectors evaluated the maintenance rule program implementation for each system and component. This evaluation included verifying the adequacy of system performance criteria, accuracy of unavailability time, and scoping within 10 CFR 50.65.

- Meteorological Wind Speed Instruments Out-of-Service - January 10, 2003
- Charging Pump Speed Control Issues - January 28, 2003
- Diesel Generator Agastat Relay Failure - March 17, 2003

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.

- Work Scheduled Week of January 13 through 17, 2003
- Work Scheduled Week of February 3 through 7, 2003
- Diesel Generator Train 'A' Overhaul - February 25, 2003
- Work Scheduled Week of March 24 through 28, 2003

b. Findings

No findings of significance were identified.

1R14 Non-Routine Evolutions (71111.14)

a. Inspection Scope

On February 26 and 27, 2003, the inspectors observed control room activities during plant up power maneuvers. The plant was being returned to full power following a Technical Specification (TS) down power when both emergency diesel generators were out-of-service. The inspectors observed control room communications, shift management oversight of reactor power maneuvers, and operator's control of reactivity in response to axial flux difference issues encountered during the return to power.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed design basis information and TS requirements to verify the technical adequacy of the operability evaluations listed below and to verify that system operability was properly justified and that the system remained available, such that no unrecognized increase in risk occurred.

The inspectors reviewed the following operability evaluations:

- Corrective Action Process (CAP) 14191, Untested SI [Safety Injection] Actuation Contact in Circuit for SW-1306A - January 3, 2003
- CAP 14321, Unclear Logging Requirements in A-CP-46 - January 13, 2003
- Turbine Driven Auxiliary Feedwater Pump Cooler Instrumentation - February 3, 2003
- CAP 15329, Venting of Air at Post LOCA [Loss-of-Coolant Accident] Hydrogen Control Panel - March 21, 2003
- CAP 15294, Instrument Air Dryer 1A and 1B in Diesel Generator Load Calculation and Associated Calculations - March 21, 2003

b. Findings

Introduction

The inspectors identified a finding of very low risk significance (Green) and a Non-Cited Violation (NCV) of TSs for the licensee's failure to monitor and log axial flux difference after disabling the power range axial flux monitor and computer alarm.

Description

On January 11 and January 12, 2003, control room operators received numerous alarms for Power Range Upper Radial Flux Tilt. The alarms were caused by Computer Point N2042A which was drifting. This computer point was associated with Power Range N-42 Upper Quadrant power level. In an effort to eliminate additional "nuisance" alarms, operators on January 12, inserted a fixed input value of 0.982 for N2042A, which was consistent with its nominal value. This prevented the computer point from drifting and causing further alarms. On January 13, the inspectors reviewed the licensee's actions to address the drifting computer point and determined that with a fixed value entered into the plant computer for N2042A, the computer axial flux differential monitor alarm was effectively disabled. Technical Specifications require that alarms be used to indicate nonconformance with flux difference requirements and that if those alarms were temporarily out-of-service, then axial flux difference be logged. The morning of January 13, the inspectors noted that operators did not log axial flux difference per TSs after the alarm was disabled. The inspectors brought this concern to the operations shift manager's attention. Subsequently, control room operators began the logging of axial flux difference at 8:00 a.m. on January 13.

Analysis

The inspectors determined that the licensee's failure to log axial flux difference in accordance with TSs was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was of greater than minor risk significance in accordance with Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." This conclusion was based on the fact that the operators' failure to log and assess axial flux difference with the alarm disabled as required by TSs inhibited the operators' ability to trend changing core flux conditions. This failure to log and assess axial flux difference could affect fuel cladding performance which is an attribute of the Barrier Integrity Cornerstone. The finding also affected the cross-cutting area of human performance because during the course of establishing a fixed signal to the N2042A computer point, operators were conducting activities beyond the bounds of approved procedural guidance.

Utilizing Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors characterized the finding to be of very low risk significance (Green) based on the following criteria. Although the finding impacted the Barrier Integrity Cornerstone, it affected the fuel barrier and not the reactor coolant system barrier and no actual abnormal axial flux difference existed during the time that the axial flux monitor was disabled.

Enforcement

Technical Specification 3.10.b.13 requires, in part, that if alarms are temporarily out-of-service, the axial flux difference shall be logged every hour for the first 24 hours, and half-hourly thereafter. Contrary to this requirement, from January 12, at 6:25 p.m., until January 13, at approximately 8:00 a.m., with the axial flux difference monitor alarm disabled, the licensee did not log axial flux difference and assess conformance with prescribed limits. The failure to log axial flux difference was determined to constitute a violation of TS 3.10.b.13. This issue was characterized to be of very low safety significance (Green) and was classified as a Severity Level IV violation. This Severity Level IV violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy. As immediate corrective actions, the licensee commenced logging axial flux difference upon recognition of the problem. The licensee documented the issue in CAP 14321 and CAP 14328. Additionally, the licensee submitted a licensee event report pursuant to 10 CFR 50.73(a)(2)(i)(B) for a failure to follow TSs. (NCV 50-305/03-02-01, Failure to Log Axial Flux Difference in Accordance with TSs).

1R16 Operator Workarounds (OWAs) (71111.16)

a. Inspection Scope

On March 27, 2003, the inspectors accompanied an equipment operator during routine equipment rounds to determine whether there were any unidentified or proceduralized OWAs which had not been captured in the licensee's OWA 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.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

On March 4, 2003, the inspectors reviewed Temporary Change Request (TCR) 02-20, "Temporary Electrical Raceway Changes to Support CCW HX [component cooling water heat exchanger] Replacement DCR [Design Change Request] 3449." This TCR required the relocation of Terminal Box 2401 since it provided physical interference with the planned replacement of both component cooling water heat exchangers during the upcoming refueling outage in April 2003. Terminal Box 2401 was a power distribution box for numerous radiation monitors located throughout the radiologically controlled area in addition to the containment building. While Terminal Box 2401 was relocated during March 3 to March 7, the following radiation monitors were out-of-service:

- R-1, Control Room Area Monitor
- R-2, Containment Vessel Area Monitor
- R-4, Charging Pump Room Monitor
- R-5, Fuel Handling Area Monitor

- R-6, Sampling Room Monitor
- R-7, Incore Instrument Seal Table Area Monitor
- R-9, Reactor Coolant System Letdown Line Room Monitor
- R-10, New Fuel Pit Criticality Monitor

Utilizing Inspection Procedure 71111.17, "Permanent Plant Modifications," the inspectors considered this TCR to fall under the category of preparation and staging for Design Change Request 3449, "Replace Component Cooling Water Heat Exchangers." The inspectors reviewed the licensee's associated 10 CFR 50.59 applicability review and design description to determine whether the temporary removal from service of the listed radiation monitors was appropriately evaluated by the licensee and whether there was any adverse impact on the operators to adequately respond to accident conditions.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors observed the post-maintenance testing activities associated with the maintenance and emergent work activities listed below to verify 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. Where applicable, the inspectors attended pre-job briefings to verify that the impact of the testing had been properly characterized; observed or reviewed the test to verify that the test was performed as written and all testing prerequisites were satisfied; and reviewed the test acceptance criteria. Following the completion of the test, the inspectors conducted walkdowns of the affected equipment, when applicable, to verify that the test equipment was removed and that the equipment was returned to a condition in which it could perform its safety function.

- Valve SW-1306B Design Modification - January 17, 2003
- Steam Generator Trip Relay Replacement - February 10, 2003
- Repair Air Regulator Leak on Auxiliary Feedwater Pump 'A' Discharge Control Valve Auxiliary Feedwater-2A - February 12, 2003
- Diesel Generator 'A' Maintenance Overhaul - February 25, 2003
- SI-351A Motor-Operated Valve Maintenance - March 20, 2003
- Control Room Air Conditioning Train 'B' Service Water Modification - March 27, 2003

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

.1 New Fuel Receipt and Inspection

a. Inspection Scope

On February 11 and 12, 2003, the inspectors observed the licensee's process for new fuel receipt and inspection. The inspectors verified that the licensee utilized appropriate foreign material exclusion control near the spent fuel pool, attended a pre-job briefing which discussed recent industry lessons-learned on handling of new fuel, and interviewed reactor engineers on the processes utilized for fuel inspection.

b. Findings

No findings of significance were identified.

.2 Review of Outage Plan

a. Inspection Scope

During March 2003, the inspectors reviewed the licensee's outage plan to verify that adequate defense-in-depth would be maintained, that scheduling of work activities did not violate TS requirements for decay heat removal and electrical power availability, and reviewed the licensee's shutdown safety assessment for accuracy and adequacy.

b. Findings

No findings of significance were identified.

.3 Licensee's Commitment to Generic Letter 88-17

a. Inspection Scope

On March 18 2003, the inspectors reviewed the licensee's commitments to Generic Letter 88-17, "Loss of Decay Heat Removal." Generic Letter 88-17 documented historical industry issues regarding loss of decay heat removal while at reduced inventory conditions and recommended actions that licensee's should take to minimize the risk associated with a loss of decay heat removal. The inspectors reviewed the adequacy of the licensee's commitments to the generic letter and verified that the commitments were adequately translated into operating procedures.

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 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 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:

- Turbine Trip Mechanism Test - January 9, 2003
- Safety Injection Train 'A' IST Test - January 17, 2003
- Channel 4 (Yellow) Instrument Channel Test - February 3, 2003
- Component Cooling Water Train 'A' IST Test - February 13, 2003
- Turbine Driven Auxiliary Feedwater Pump Operability Test - February 14, 2003
- Engineering Safeguards Logic Train 'A' Test - March 18, 2003

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

.1 Frazil Ice Formation and Associated Lowering Forebay Level

a. Inspection Scope

On January 24, 2003, the inspectors reviewed TCR 03-06, "Connect Temporary Supply of Hot Water to the Circulating Water Recirculation Pump Suction via CW-490 and CW-485," TCR 03-05, "Connect a Fire Hose from FP-211 to CW-490 to Provide Water for Recirculation Over the Intake Structure"; and TCR 03-08, "Add Temporary Warm Water to Recirculating Tank via CW-415." These TCR's were implemented to address frazil ice formation at the intake structure on January 23, which caused a forebay level excursion. The facility's forebay provided a suction source of water to the safety-related service water pumps. The inspectors also reviewed the associated 10 CFR 50.59 screenings, USAR design information, and TS to verify that modifications did not have an adverse affect on equipment operability. Additionally, the inspectors verified that the TCR's were installed in accordance with design documentation and that operating

instructions and procedures were appropriately updated to reflect the operation of the TCR's.

b. Findings

No findings of significance were identified.

.2 Installation of Valve Stem Clamps on ICS-5A, ICS-6A, and CC-6B

a. Inspection Scope

The inspectors reviewed TCR 03-01, "Install Valve Stem Clamp on CC-6B to Facilitate Actuator Maintenance"; TCR 03-03, "Install Valve Stem Clamp on ICS-5A to Facilitate Actuator Maintenance"; and TCR 03-04, "Install Valve Stem Clamp on ICS-6A to Facilitate Actuator Maintenance." These similar TCR's were evaluated as a single inspection sample. The inspectors evaluated the associated 10 CFR 50.59 screenings and design description to determine whether the affected valves were capable of performing their design function and whether the valves could be operated in the event of an emergency.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety, Public Radiation Safety

2OS1 Access Control (71121.01)

.1 Plant Walkdowns, Radiological Boundary Verifications, and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors conducted walkdowns of the radiologically restricted area to verify the adequacy of radiological boundaries and postings. Specifically, the inspectors walked down several radiation and high radiation area boundaries in the auxiliary building and spent fuel pool. Confirmatory radiation measurements were taken to verify that these areas were properly posted and controlled in accordance with 10 CFR Part 20, licensee procedures and TSs. The radiation work permit for NRC general tours was reviewed for electronic dosemeter alarm set points and protective clothing requirements.

b. Findings

No findings of significance were identified.

2PS2 Radioactive Material Processing and Transportation (71122.02)

.1 Radioactive Waste System

a. Inspection Scope

The inspectors reviewed the liquid and solid radioactive waste system description in the USAR and the most recent Radiological Effluent Release Report (2001) for information on the types and amounts of radioactive waste (radwaste) generated and disposed. The inspectors reviewed the scope of the licensee's audit program with regard to radioactive material processing and transportation programs to verify that it meets the requirements of 10 CFR 20.1101(c).

b. Findings

No findings of significance were identified.

.2 Walkdowns of Radioactive Waste Systems

a. Inspection Scope

The inspectors performed walkdowns of the liquid and solid radwaste processing systems located in the auxiliary building to verify that the systems agreed with the descriptions in the USAR and the Process Control Program, and to assess the material condition and operability of the systems. The inspectors reviewed the current processes for transferring waste resin into shipping containers to determine if appropriate waste stream mixing and/or sampling procedures were utilized. The inspectors also reviewed the methodologies for waste concentration averaging to determine if representative samples of the waste product were provided for the purposes of waste classification in 10 CFR 61.55. During this inspection, the licensee was not conducting waste processing.

b. Findings

No findings of significance were identified.

.3 Waste Characterization and Classification

a. Inspection Scope

The inspectors reviewed the licensee's radiochemical sample analysis results for each of the licensee's waste streams, including dry active waste, resins, and filters. The inspectors also reviewed the licensee's use of scaling factors to quantify difficult-to-measure radio-nuclides (e.g., pure alpha or beta emitting radio-nuclides). The reviews were conducted to verify that the licensee's program assured compliance with 10 CFR 61.55 and 10 CFR 61.56, as required by Appendix G of 10 CFR Part 20. The inspectors also reviewed the licensee's waste characterization

and classification program to ensure that the waste stream composition data accounted for changing operational parameters and thus remained valid between the annual sample analysis updates.

b. Findings

No findings of significance were identified.

.4 Shipment Preparation

a. Inspection Scope

Since there were no radioactive materials shipment during the inspection, the inspectors reviewed the records of training provided to personnel responsible for the conduct of radioactive waste processing and radioactive shipment preparation activities. The review was conducted to verify that the licensee's training program provided training consistent with NRC and Department of Transportation requirements.

b. Findings

No findings of significance were identified.

.5 Shipping Records

a. Inspection Scope

The inspectors reviewed four non-excepted package shipment manifests/documents completed in 2002 to verify compliance with NRC and Department of Transportation requirements (i.e., 10 CFR Parts 20 and 71 and 49 CFR Parts 172 and 173).

b. Findings

No findings of significance were identified.

.6 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the report of a focused self-assessment performed during August 6-20, 2001, on the radioactive material processing and transportation programs, and the Radiation Protection 2002 fourth quarter CAP quarterly report to evaluate the effectiveness of the self-assessment process to identify, characterize, and prioritize problems. The inspectors also selectively reviewed 2002 and 2003 CAP documents that addressed radioactive waste and radioactive materials shipping program deficiencies, to verify that the licensee had effectively implemented the CAP.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection

3PP4 Security Plan Changes (71130.04)

a. Inspection Scope

The inspectors reviewed Revision 18 to the Kewaunee Nuclear Power Plant Security Manual to verify that the changes did not decrease the effectiveness of the submitted document. The referenced revision was submitted in accordance with 10 CFR 50.54(p)(2) requirements by licensee letter dated December 20, 2002.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstone: Barrier Integrity

a. Inspection Scope

On January 8, 2003, the inspectors reviewed the licensee's Performance Indicator data collection process and historical data from the first quarter through the fourth quarter of 2002 to verify the accuracy of collected and submitted data. Additionally, the inspectors reviewed corrective action records, monthly operating reports, control room logs, and observed a primary sample collection and analysis to independently verify the data that the licensee had collected. The following Performance Indicators were evaluated:

- Reactor Coolant System Specific Activity
- Reactor Coolant System Leak Rate

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Logging of Axial Flux Difference Not Performed as Required by TSs

a. Inspection Scope

On March 17, 2003, as part of the Selected Issue Follow-up Inspection of Inspection Procedure 71152, the inspectors reviewed the licensee's documented corrective actions associated with the inspectors' identification that operators had not been logging axial

flux difference in accordance with TS (See Section 1R15 for details of the technical issue and associated enforcement discussion). As required by 10 CFR 50.73, the licensee submitted Licensee Event Report 50-305/2003-001 on March 17, 2003, as well as conducting a root cause evaluation into the issue. The inspectors reviewed the root cause evaluation and stated corrective actions. The inspectors noted that although the corrective actions were scheduled for completion, they had not been completed at the time of this review. The inspectors did review and evaluate interim corrective actions that the licensee had performed. Additionally, the inspectors evaluated the licensee's evaluation and disposition of performance issues, reportability, and application of risk insights for prioritization of issues and corrective actions.

b. Findings

No findings of significance were identified.

.2 Effect of System Back-pressure on Relief Valve Setpoints

a. Inspection Scope

As part of the Selected Issue Follow-up Inspection of Inspection Procedure 71152, the inspectors selected CAP 3445, Ensure Compliance With Code Per OM, Part 1, (dated March 1, 2002) and an associated Condition Evaluation CE002691, for review to ensure that the non-conforming condition had been appropriately evaluated. This CAP pertained to the failure to consider super-imposed back pressure when determining the appropriate relief valve lift pressure. The inspectors evaluated the licensee's review of this issue including evaluations and corrective actions referenced in CAP 3445. The inspectors also reviewed Calculation C11335, to evaluate the adequacy of the licensee's analysis of the effects of back pressure on relief valve outlets. The inspectors verified the implementation of Corrective Action PCR 2755 to revise a maintenance procedure.

b. Findings

No Findings of significance were identified.

4OA3 Event Follow-up (71153)

a. Inspection Scope

On February 26, 2003, the licensee commenced a TS required shutdown of the unit, when it was determined that both diesel generators were inoperable. The 'A' train diesel generator was out-of-service for planned maintenance and the 'B' diesel generator failed to start when the licensee attempted to start it per a TS required action statement. As a result of both diesel generators being out-of-service at the same time, the licensee declared an Unusual Event per the emergency plan. The inspectors responded to the site and evaluated the licensee's conduct of the unit downpower. Additionally, the inspectors reviewed plant parameters and trend data, attended licensee meetings to address the diesel generator failure to start, and verified that the licensee correctly applied the emergency plan. The inspectors also followed the licensee's action plan to restore one of the diesel generators to service. The licensee subsequently repaired the

'B' diesel generator later that same day, exited the Unusual Event, and commenced restoration of the unit to full power. The inspectors verified that the licensee met all requirements for returning the unit to full power by reviewing TS.

b. Findings

No findings of significance were identified.

4OA4 Cross-Cutting Findings

A finding described in Section 1R15 of this report had, as a primary cause, a Human Performance deficiency, in that, operators were conducting activities beyond the bounds of approved procedural guidance when trying to correct "nuisance" axial flux difference alarms.

4OA6 Meetings

Interim Exit Meeting Summary

Interim exits were conducted for:

- Safeguards inspection with Mr. M. Fencl on January 27, 2003
- Radiation Protection inspection with Mr. T. Coutu on March 11, 2003.

Exit Meeting

The inspectors presented the inspection results to Mr. T. Coutu and other members of licensee management at the conclusion of the inspection on April 1, 2003. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

KEY POINTS OF CONTACT

Nuclear Management Company, LLC

G. Arent, Regulatory Affairs
L. Armstrong, Engineering Director
S. Baker, Manager, Radiation Protection
T. Coutu, Site Vice President, Kewaunee Site
M. Fencl, Security Manager, Kewaunee/Point Beach
G. Harrington, Licensing Leader
J. McCarthy, Assistant Plant Manager, Operations
J. Palmer, Plant Mechanical Supervisor
S. Putman, Assistant Plant Manager, Maintenance
R. Repshas, Manager, Site Services
J. Stafford, Superintendent, Operations

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-305/03-02-01	NCV	Failure to Log Axial Flux Difference in Accordance with TSs

Closed

50-305/03-02-01	NCV	Failure to Log Axial Flux Difference in Accordance with TSs

Discussed

None

LIST OF ACRONYMS USED

CAP	Corrective Action Process
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects, Region III
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OWA	Operator Work-Around
TCR	Temporary Change Request
TS	Technical Specification
USAR	Updated Safety Analysis Report

LIST OF DOCUMENTS REVIEWED

1RO4 Equipment Alignment

N-SI-33-CL; Safety Injection System Prestartup Checklist; Revision AF

N-DGM-10-CLA; Diesel Generator A Prestartup Checklist; Revision I

N-FW-05B-CL; Auxiliary Feedwater System Prestartup Checklist; Revision AI

OPERXK-100-36; Flow Diagram - Chemical & Volume Control System; Revision AU

KNPP System Description - System No. 35; Chemical and Volume Control System (CVC); Revision 2

USAR, Section 9.2; Chemical and Volume Control System; Revision 17

N-CVC-35B-CL; Charging and Volume Control Prestartup Checklist; Revision AL

N-CVC-35B; Charging and Volume Control; Revision AG

A-CVC-35A; Malfunction of Reactor Makeup Control; Revision I

E-CVC-35; Emergency Boration; Revision P

SP-02-138A, Train A Service Water Pump and Valve Test - IST; Revision A

1R12 Maintenance Effectiveness

CAP 014634; Primary Meteorological Tower 60 Meter Wind Speed Instrument Out-of-Service

CAP 014635; Backup Meteorological Tower 10 Meter Indication Out-of-Service

N-MET-63; Meteorological Monitoring; Revision B

WR 03-000419; Backup Tower 10 Meter and Speed Not Functioning

WR 03-000420; Primary Tower 60 M Wind Speed Stuck

WR 03-000412; Backup Met Tower Wind Speed Sensor Cups Not Rotating

CAP 014612; Primary Meteorological Tower Out-Of-Service

CAP 014611; Backup Meteorological Tower Wind Speed Out-Of-Service

Maintenance Rule System Basis; Chemical & Volume Control; Revision 2

Maintenance Rule Scoping Questions - Attachment A; KNPP System No. 35 Chemical & Volume Control; Revision 1

SSC Performance Criteria Sheet - Attachment B; System No. 35 Chemical & Volume Control; Revision 2

MRE 001614; Charging Pump B Speed Control Problems

EDG Emergency Diesel Generator Performance Criteria Sheet; Revision1

Failure Analysis of Amerace Electronics, Agastat E7022PC004 Time Delay Relay from Kewaunee Nuclear Power Plant; March 6, 2003

EDG Maintenance Rule Scoping Questions; Revision 1

EDG Maintenance Rule System Basis; Revision 1

1R13 Maintenance Risk Assessment

Night Order; 'A' Emergency Diesel Generator On-Line Overhaul; February 24, 2003

Tagout ID 03-354; Protected Equipment Signs for 'A' Diesel Generator Outage

1R15 Operability Evaluations

CAP 14191; Untested SI Actuation Contact in Circuit for SW-1306A

E-2492; Schematic Diagram - Control Valves CV-31406, 31407; Revision H

WOG-02-081; Westinghouse Owners Group Transmittal of Guideline for Implementation of TSTF-358 (MUBHP-3015); May 23, 2002

GNP 08.21.01; Risk Assessment for Plant Configurations; Revision D

DC/PM 3163-01; SW1306A and SW1300A SI Signal Change; July 25, 2000

E-775; Wiring Diagram - Sequence Loading Panel DR106 Train 'A'; Revision BA

E-2051-1; Integrated Logic Diagram - Power Range Nuclear Instrumentation; Revision N

ARP 47032-L; Upper Quadrant Power Tilt Ratio High; Revision B

A-NI-48; Abnormal Nuclear Instrumentation; Revision S

A-CP-46; Abnormal Honeywell Plant Process Computer; Revision AK

Calculation C11356; CC Pump Motor Operation at 280 HP, Electrical System Impact

Calculation C-042-001; Safeguard Diesel Generator Loading

CAP 14328; Apparent Violation of Technical Specifications

CAP 14321; Unclear Logging Requirements in A-CP-46

CAP 15329, Venting of Air at Post LOCA Hydrogen

1R17 Permanent Plant Modifications

TCR 02-20; Temporary Electrical Raceway Changes to Support CCW HX Replacement DCR 3449

50.59 Applicability Review for TCR 02-20; March 6, 2003

1R19 Post-Maintenance Testing

GIP-016; Bench Testing Westinghouse MG-6 and BF Type Relays; Revision B

CRP 47-001423; RT3/XA Relay Replacement; Revision A

SP-42-047A; Diesel Generator A Operational Test; Revision U

WO 03-1423; During Performance of SP 47-062A Table 6-13, Light Out-RTX Coil Failure (l12) Did Not Come Back On After Step 4; February 10, 2003

CRP 47-001423; RT3/XA Relay Replacement; February 10, 2003

DC/PM 3375-3; Service Water Isolation for CRAC 'B' Chiller (Mechanical); December 16, 2002

Tagout ID 02-1539; CRAC '1B' Compressor, Install New Service Water Valve SW-1041B-2

PMP 33-06; Safety Injection Containment Sump QA-1 Motor Operated Valve Maintenance; Revision N

Preventative Work Order 02-11034; Perform Actuator Maintenance

E-1368; Schematic Diagram MCC 1-52E & F Motors 1-373 & 1-374; Revision M

SP-05B-283A, Motor Driven AFW Pump A Full Flow Test - IST, Revision C

1R20 Refueling and Other Outage Activities

RE-22; Receipt and Inspection of New Fuel; Revision M

NRC-89-1; Letter From Wisconsin Public Service to NRC "Response to Generic Letter 88-17"; January 3, 1989

Shutdown Safety Assessment for 2003 Outage; March 31, 2003

Kewaunee Nuclear Power Plant Refueling 26 Outage Schedule;

1R22 Surveillance Testing

SP-54-063; Turbine Trip Mechanism Tests; Revision AB

XK-101-24-1; Electro-Hydraulic Control & Lub System Diagram; January 30, 1997

E-2057; Integrated Logic Diagram - Turbine System; Revision Q

E-2059; Integrated Logic Diagram - Turbine System; Revision M

SP-47-316D; Channel 4 (Yellow) Instrument Channel Test; Revision L

SP-05B-333; Turbine Driven AFW Pump Operability Test; Original Revision

SP-55-155A; Engineered Safeguards Train A Logic Channel Test; Revision N

SP-33-098A, Train A Safety Injection Pump and Valve Test - IST, Original Revision

SP-31-168A, Train A Component Cooling Pump and Valve Test - IST; Revision A

1R23 Temporary Plant Modifications

TCR 03-06; Connect Temporary Supply of Hot Water to the CW Recirc Pump Suction via CW-490 and CW-485; January 24, 2003

TCR 03-05; Connect a Fire Hose from FP-211 to CW-490 to Provide Water for Recirculation Over the Intake Structure; January 23, 2003

TCR 03-08; Add Temporary Warm Water to Recirculating Tank via CW-415

Temporary Change to N-CW-04; Circulating Water System; Revision AB; January 24, 2003

CAP 14379; Circ Water Pump flow is Low in the Operating Band

CAP 14447; Unexpected Decrease in Forebay Level

CAP 14308; Forebay Level Decreasing

TCR 03-01; Install Valve Stem Clamp on CC-6B to Facilitate Actuator Maintenance

TCR 03-03; Install Valve Stem Clamp on ICS-5A to Facilitate Actuator Maintenance

TCR 03-04; Install Valve Stem Clamp on ICS-6A to Facilitate Actuator Maintenance

GNP 4.3.3; Plant Physical Change Control; Revision D

2PS2 Radioactive Material Processing and Transportation

HP-09.011; Waste Stream Analysis; Revision C

HP-09.031; Radioactive Material Shipping; Revision A

NAD-01.16; Solid Radioactive Waste Process Control Program (PCP); Revision E

KSA-RP-01-07; Focused Self-Assessment Report, Radioactive Material Processing and Transportation; dated October 23, 2001

Kewaunee Nuclear Power Plant, Radiation Protection Technologist Training Program; Revision A

HP-TP, Radiation Protection Training Program, HPI-02-TC, KPB Basic Radiological Protection; Revision 0

Updated Safety Analysis Report; Revision 16

020422; LSA II DAW, etc.; dated June 6. 2002

020711; LSA II DAW, etc.; dated September 24, 2002

121602-1; LSA II DAW, etc.; dated December 17, 2002

121802-1; LSA II DAW, etc.; dated December 18, 2002

KAP001109; Document KSA-RP-01-07; dated October 21, 2001

KAP000881; NRC Radioactive Processing and Transportation Inspection; dated November 5, 2002

KAP014630; No Formal Training Process Defined for Rad/Waste Operator; dated February 6, 2002

KAP015080; Inadequate Closure of OTH000408; dated March 5, 2002

3PP4 Physical Protection - Security Plan Change

Kewaunee Nuclear Power Plant Security Manual; Revision 18, dated December 20, 2002

4OA1 Performance Indicator Verification

RCC-062; RCS Liquid Activity; Revision L

SP-37-065; Reactor Coolant Chemistry Surveillance Procedure; Revision Q

RCC-085; Primary Sampling System; Revision H

SP-36-082; Reactor Coolant System Leak Rate Check; Revision AB

NEI 99-02; Regulatory Assessment Performance Indicator Guidelines; Revision 2

4OA2 Identification and Resolution of Problems

CAP 3445; Ensure Compliance With Code Per OM; Part 1

GMP 101-01; Relief, Safety, and Safety Relief Valve Testing; Revision P

Calculation C11335; Evaluation of Back Pressure Effects on Relief Valve outlets; Revision 0