

February 11, 2008

Mr. David A. Christian
President and Chief Nuclear Officer
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: KEWAUNEE POWER STATION - NRC INTEGRATED
INSPECTION REPORT 05000305/2007005

Dear Mr. Christian:

On December 31, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Kewaunee Power Station. The enclosed report documents the inspection results, which were discussed on January 9, 2008, with Mr. Steve Scace 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.

Based on the results of this inspection, one self-revealed and three NRC-identified findings of very low safety significance were identified. The findings involved violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as Non-Cited Violations (NCVs) in accordance with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, 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 a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Kewaunee Power Station.

D. Christian

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Sincerely,

/RA/

Michael A. Kunowski, Chief
Branch 5
Division of Reactor Projects

Docket Nos. 50-305
License Nos. DPR-43

Enclosure: Inspection Report 05000305/2007005
w/Attachment: Supplemental Information

cc w/encl: S. Scace, Site Vice President
T. Webb, Director, Nuclear Safety and
Licensing
C. Funderburk, Director, Nuclear Licensing
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J. Kitsembel, Public Service Commission of Wisconsin
State Liaison Officer, State of Wisconsin

D. Christian

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Letter to D. Christian from M. Kunowski dated February 11, 2008

SUBJECT: KEWAUNEE POWER STATION - NRC INTEGRATED
INSPECTION REPORT 05000305/2007005

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-305

License Nos: DPR-43

Report No: 05000305/2007005

Licensee: Dominion Energy Kewaunee, Inc.

Facility: Kewaunee Power Station

Location: Kewaunee, WI

Dates: October 1, 2007, through December 31, 2007

Inspectors: S. Burton, Senior Resident Inspector
P. Higgins, Resident Inspector
D. McNeil, Senior Operations Engineer
K. Barclay, Reactor Engineer
M. Jones, Reactor Engineer
M. Munir, Reactor Engineer
J. Cassidy, Radiation Specialist

Approved by: M. Kunowski, Chief
Branch 5
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000305/2007005; October 1, 2007, through December 31, 2007; Kewaunee Power Station. Maintenance Risk Assessments and Emergent Work Control, Operability Evaluations, Post-Maintenance Testing, and Identification and Resolution of Problems.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One self-revealed and three NRC-identified green findings were identified by the inspectors. These findings were considered Non-Cited Violations of NRC regulations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP 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 4, dated December 2006.

NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. A finding of very low safety significance and an associated Non-Cited Violation (NCV) of 10 CFR 50.65(a)(4), "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," was identified by the inspectors during startup of the reactor following a plant shutdown to replace leaking hydrogen coolers on the turbine generator. The licensee entered this issue into its corrective action program.

The finding is greater than minor because if left uncorrected the finding would become a more significant safety concern. Specifically, the licensee failed to correctly characterize the risk on October 12-13, 2007. The inspectors evaluated the finding using Appendix K of Inspection Manual Chapter 0609, "Maintenance Risk Assessment and Risk Management Significance Determination Process," and determined that this finding was of very low safety significance in accordance with Flowchart 1, "Assessment of Risk Deficit." (Section 1R13)

- Green. A finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the "B" turbine building service water header isolation valve failed to fully cycle on demand. Specifically, the licensee failed to provide adequate procedures to support installation and maintenance for certain designs of solenoid valves used in the instrument air system. A failure of an instrument air system solenoid valve caused the service water valve to fail. The licensee repaired the solenoid valve and entered the issue into its corrective action program.

The finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to provide adequate procedures to support the installation, maintenance, and operation of safety-related solenoid valve, SV-33044. Using Appendix A of Inspection Manual Chapter 0609, the inspectors answered "no" to all the screening questions in the Significance Determination Process Phase 1

Screening Worksheet in the Mitigating Systems column; therefore, this finding is of very low safety significance. This finding has a cross-cutting aspect in the area of human performance because related installation and maintenance procedures (resources) were inadequate and not up to date to ensure safety-related equipment was protected (H.2(c)). (Section 1R15)

- Green. A finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors during observation of a post-maintenance test on a steam trap associated with the turbine-driven auxiliary feedwater pump (TDAFWP) in accordance with plant procedure CMP-13-01 "TD-Turbine Room Traps and Drains-Trap Maintenance." Specifically, the licensee failed to provide adequate procedures to support the testing of the steam trap. The licensee has entered the issue into the corrective action program and will be revising the appropriate procedures.

The finding is greater than minor because the finding is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to provide adequate procedures to support the post-maintenance testing of steam traps in the TDAFWP system. Using Appendix A of Inspection Manual Chapter 0609, the inspectors answered "no" to all the screening questions in the Significance Determination Process Phase 1 Screening Worksheet in the Mitigating Systems column; therefore, this finding is of very low safety significance. This finding has a cross-cutting aspect in the area of human performance because the licensee had ample opportunity (resources) available to update procedure CMP-13-01 during multiple prior maintenance activities but did not (H.2(c)). (Section 1R19)

- Green. A finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors during a review of procedures related to the control and storage of material. Specifically, procedure GNP-01.31.01, "Plant Cleanliness and Storage," permitted uncontrolled storage of materials next to a Seismic Class 1 system. Additionally, opportunities existed to correct it and/or place compensatory measures in place after the NRC issued an NCV related to this issue in the first quarter of 2007. The licensee has entered the issue into the corrective action program and will be revising the procedure.

The finding is greater than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the procedure allowed uncontrolled storage of materials in the vicinity of Seismic Class 1 systems that could render the systems inoperable during a seismic event. Using Appendix A of Inspection Manual Chapter 0609, the inspectors answered "no" to all the screening questions in the Significance Determination Process Phase 1 Screening Worksheet in the Mitigating Systems column; therefore, this finding is of very low safety significance. This finding has a cross-cutting aspect in the area of problem identification and resolution because the licensee failed to take appropriate timely corrective actions or put compensatory actions in place after the NRC issued a Non-Cited Violation relating to this issue in the first quarter of 2007 (P.1(d)). (Section 4OA2)

Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

Summary of Plant Status

Kewaunee operated at full power for the entire inspection period except for brief downpowers to conduct planned surveillance testing activities with the following exception:

- The reactor was shutdown from October 4 -12, 2007, to facilitate repairs on the main turbine generator hydrogen coolers. Full power was restored on October 13.

2. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Winter Seasonal Readiness Preparations

a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for winter conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Safety Analysis Report (USAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the Attachment. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues: heat tracing, condensate storage, ventilation, and intake structure and systems.

This inspection constitutes one winter seasonal readiness preparations sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- “B” train of Safety Injection; and
- “B” train of Component Cooling Water System

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, USAR, Technical Specification (TS) requirements, Administrative TS, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted two partial system walkdown samples as defined by Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- fire protection impairments for the turbine building basement, auxiliary building basement, screen house tunnel, cable spreading room, technical support center computer room, and the auxiliary building mezzanine;
- Fire Zones TU-90, TU-91, TU-92, TU-93, “A” and “B” emergency diesel generators and associated day tank rooms;

- Fire Zones SC-70A, SC-70B, screen house and access tunnel;
- Fire Zones TU-97, TU-98, AX-30, “A” and “B” battery rooms and relay room;
- Fire Zone AX-23, refueling water storage tank and containment spray pump room;
- Fire Zones TU-94, TU-95, TU-96, turbine building basement, 480-volt switchgear rooms, and carbon dioxide tank room;
- Fire Zone TU-22, turbine building mezzanine and operating floor;
- Fire Zones AX-20, AX-21, AX-22, AX-26, 4160-volt switchgear rooms, and steam generator blow-down tanks; and
- Fire Zones AX-23B, AX-23C, AX-23D, AX-25, charging pumps, boric acid concentrator pump, and residual heat removal (RHR) pump pit areas.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out-of-service, degraded, or inoperable fire protection equipment, systems, or features in accordance with the licensee’s fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant’s Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant’s ability to respond to a security event. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee’s corrective action program.

These activities constituted nine quarterly fire protection inspection sample as defined by Inspection Procedure 71111.05-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On December 4, 2007, the inspectors observed a crew of licensed operators in the plant’s simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew’s clarity and formality of communications;
- ability to take timely actions in the conservative direction;

- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements.

This inspection constitutes one quarterly licensed operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

.2 Annual Operating Test Results and Biennial Written Examination Results

a. Inspection Scope

The inspectors reviewed the pass/fail results of the individual biennial written tests administered by the licensee during calendar year 2007. The inspectors also reviewed the results for the operating and simulator tests (required to be given annually per 10 CFR 55.59(a)(2)) administered by the licensee during calendar year 2007. The overall written examination and operating test results were compared with the significance determination process in accordance with NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- Nuclear instrumentation system; and
- Reactor protection system relays.

The inspectors reviewed events where ineffective equipment maintenance has resulted in invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

This inspection constitutes two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- pressurizer valve PS-1B added to outage scope;
- safe shutdown assessment for short duration outage;
- steam generator "A" power-operated relief valve inadvertent opening when the associated main steam isolation valve was closed;
- risk management during outage when reactor coolant system (RCS) temperature increased above 200 degrees Fahrenheit (°F);
- risk management when auxiliary building ventilation was unavailable during special ventilation zone testing; and
- risk management when the "G" instrument air compressor tripped and was out-of-service.

These activities were selected based on their potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope

of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These activities constituted six samples as defined by Inspection Procedure 71111.13-05.

b. Findings

Failure to Characterize and Manage Risk In Accordance With Maintenance Rule With the Turbine-Driven Auxiliary Feedwater Pump (TDAFWP) in Pull-to-Lock

Introduction: A finding of very low safety significance (Green) and an associated Non-Cited Violation (NCV) of 10 CFR 50.65(a)(4), "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," was identified by the inspectors during startup of the reactor following a plant shutdown to replace leaking hydrogen coolers on the turbine generator.

Description: On October 12, 2007, operators were using plant startup procedures following a plant shutdown to replace leaking hydrogen coolers on the turbine generator. The RCS temperature was above 350°F, and the RCS was being cooled by the motor-driven auxiliary feed water pumps. The calculation from the Shift Technical Adviser (STA) calculation for the daily risk indicated that plant risk would remain in the green region all day. The inspectors noted that the TDAFWP control switch was in the pull-to-lock position, which defeated the automatic starting feature of this pump. The inspectors also noted that no compensatory measures, such as a dedicated operator to start the TDAFWP if required, were in effect in the control room at that time.

The inspectors recalled that during plant power operations, and without compensatory measures in effect, plant risk was historically characterized as a yellow risk condition when the TDAFWP control switch was in the pull to lock position. Additionally, the inspectors noted that the procedure for managing plant risk above 200°F was the same as for power operations, and therefore were unsure why the risk would be characterized differently during plant startup. The inspectors questioned the STA about the basis for not increasing risk with the TDAFWP in pull-to-lock during startup. The STA was unsure for the differences between the operating and startup risk assessments and indicated he would check with the licensee's risk probabilistic risk assessment group. Subsequent investigation by the licensee resulted in numerous condition reports (CRs), meetings between plant management and the inspectors, and an apparent cause evaluation that identified that the risk estimates were incorrect and underestimated on October 12-13, 2007.

The issues that contributed to an underestimation of risk included a failure to properly account for the TDAFW being in pull-to-lock, a failure to properly characterize the configuration of the residual heat removal (RHR) pumps, inadequate procedures, training program deficiencies, and communications errors. Because the contributing causes covered a broad spectrum and were equally weighted, the inspectors did not attribute a cross-cutting aspect to this issue.

Analysis: The inspectors determined that the licensee's underestimation of risk on October 12-13, 2007, was a performance deficiency warranting further review. The inspectors concluded that the finding was greater than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated September 20, 2007, because if left uncorrected the finding would become a more significant safety concern. Specifically, improper risk management increases the risk to public health and safety. Specifically, the licensee failed to correctly characterize the risk on October 12-13, 2007.

The inspectors evaluated the finding using Appendix K of IMC 0609, "Maintenance Risk Assessment and Risk Management Significance Determination Process," and determined that this finding was of very low safety significance (Green) in accordance with Flowchart 1, "Assessment of Risk Deficit," dated May 19, 2005.

Enforcement: 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," paragraph (a)(4), states, in part, that "Before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventative maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities." Contrary to this, the licensee failed to manage the increase in risk that resulted from various activities on October 12-13, 2007. The licensee entered this issue into the plant corrective action program as condition reports CR022304, CR022302, CR022358, CR022696, CR022637, CR022638, CR022251, CR022631, and CR025371. Corrective actions included training program modifications, employee training, related procedure changes, and modifications of the risk assessments being performed during the startup. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section VI.A of the NRC enforcement policy (NCV 05000305/2007005-01).

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- boric acid leak on valve RHR-299B;
- "B" turbine building service water (SW) header isolation valve fails to close;
- voltage drop on diesel generator cables not included in load analysis; and
- potential contamination of "A" and "B" emergency diesel generator governor oil.

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and USAR to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures

in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment.

This inspection constitutes four samples as defined in Inspection Procedure 71111.15.-05

b. Findings

Solenoid Valve for Valve SW-4B Not Installed Correctly

Introduction: A finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the "B" turbine building SW header isolation valve failed to fully cycle on demand.

Description: On October 15, 2007, a failure of solenoid valve, SV-33044, the instrument air positioning valve for the air-operated turbine building SW header isolation valve, SW-4B, was self-revealed when the control room received an associated air accumulator pressure low alarm. This condition occurred during an attempt to reposition SW-4B where SW-4B failed to fully reposition and it was discovered that SV-33044 was stuck in the mid-position.

The inspectors reviewed the associated operability assessments and corrective actions related to the failure of the valve to operate. The inspectors concluded that the licensee's assessments related to the failure mechanism were accurate. The licensee determined that the failure of SV-33044 to fully stroke was a result of aging and an improperly installed exhaust port vent pipe. The licensee's investigations found that the valve's vent piping was installed with a restriction to exhaust air from the valve. This condition combined with an older and weaker valve resulted in a failure that would not have occurred as solely as a function of the valve's age. The inspectors reviewed the manufacturer's technical requirements and found that the licensee's periodic replacement schedule for the valve was acceptable, but the installation of the exhaust piping was not in accordance with requirements; these observations supported the licensee's conclusions.

The inspectors reviewed the work instructions for the initial installation of SV-33044 and found no specifications that would have insured that manufacture design requirements for exhaust port piping installation were met. For this reason, the inspectors concluded that the initial work instructions were not adequate to support long-term proper operation of the valve.

Analysis: The licensee's failure to translate manufacturer's design requirements for the installation of SV-33044 was a performance deficiency warranting further review. The inspectors concluded that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated September 20, 2007, because the finding was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the

cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the licensee failed to provide adequate procedures to support the installation and operation of safety-related solenoid valve, SV-33044.

The inspectors evaluated the finding using Appendix A, of IMC 0609, "Significance Determination Process," dated January 10, 2008, and answered no to all of the questions for the Mitigating Systems cornerstone, therefore, the finding was determined to be of very low safety significance (Green). This finding has a cross-cutting aspect in the area of human performance because related installation and maintenance procedures (resources) were inadequate and not up to date to ensure safety-related equipment was protected (H.2(c)).

Enforcement: 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that, "Activities affecting quality, shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings." Contrary to this, the inspectors identified that work instructions for the installation of safety-related valve SV-33044 were not adequate to support proper installation. The licensee entered this issue into its corrective action program as condition report CR022459 and corrective action CA021357. Corrective actions by the licensee included immediately isolating valve SW-4B until repair of the related solenoid valve was completed, and tracking and removal of any additional tailpipes on the 87 solenoid valves of similar design. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section VI.A of the NRC enforcement policy (NCV 05000305/2007005-02).

1R19 Post Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following post-maintenance (PM) activities and procedures to verify that they were adequate to ensure system operability and functional capability:

- "B" feed water regulating and bypass valve retest after maintenance;
- pressurizer spray valve PM test and visual examinations;
- "1C" turbine ventilation fan coil unit after maintenance;
- "A1" traveling water screen after maintenance;
- TDAFWP steam trap after maintenance;
- emergency diesel generator fuel oil piping after leak repairs;
- "G" instrument air compressor after maintenance;
- component cooling water supply valve to RHR heat exchanger "B" after maintenance; and
- RHR to safety injection valve 299B after maintenance.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate

for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion), and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the USAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with PM tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment.

This inspection constitutes nine samples as defined in Inspection Procedure 71111.19.

b. Findings

Inadequate Procedures for PM Testing of Steam Traps in the TDAFWP System

Introduction: A finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors during observation of a PM test on a steam trap for the TDAFWP in accordance with plant procedure CMP-13-01 "TD-Turbine Room Traps and Drains-Trap Maintenance." Specifically, the licensee failed to provide adequate procedures to support the PM testing of steam traps in the TDAFWP system.

Description: On November 14, 2007, maintenance procedure CMP-13-01, "TD-Turbine Room Traps and Drains-Trap Maintenance," was implemented to perform an overhaul of steam trap number 26. Steam trap 26 was used to drain condensate from the piping upstream of the motor-operated steam admittance valve for the safety-related TDAFWP and from the piping upstream of the TDAFWP trip/throttle valve. The inspectors observed the PM test performed in accordance with the maintenance procedure following the overhaul. The PM test in the procedure stated, "With trap in service, measure inlet and outlet temperature of steam trap using a temperature indicating device, or use listening device, to determine proper steam trap operation." The inspectors noted that the procedure did not provide acceptance criteria for either temperature or sound. The inspectors questioned the mechanic performing the test about what were acceptable inlet and outlet temperatures, or what proper steam trap operation would sound like and the mechanic indicated that he did not know.

During a follow-up discussion with the TDAFW system engineer, the inspectors asked for a specification of the design objective for the steam trap. The system engineer was not able to provide this information. The inspectors also determined that Operations Procedure N-TD-13, "Turbine Room Traps and Drains," which describe actions necessary for startup, steady state operation, and shut down of turbine room traps and drains, was not adequate to determine proper steam trap operation. The inspectors concluded that NRC Information Notice 93-51, "Repetitive Overspeed Tripping of Turbine-Driven Auxiliary Feedwater Pumps," described repetitive over-speed tripping of a TDAFWP due to an inoperable or degraded steam trap which allowed excessive condensate buildup in the steam supply line upstream of the trip/throttle valve; and that

this information notice provided the licensee with prior opportunity to identify and define the purpose of the steam traps and develop procedures with appropriate acceptance criteria.

Therefore, the inspectors determined, following review of plant procedures, interviews with plant management, engineering, and maintenance personnel, and a review of NRC operating experience information, that plant procedures were not adequate to support proper PM testing and operation of the TDAFWP steam traps. These procedures did not discuss or provide specific acceptance criteria for acceptable versus unacceptable steam trap operation for both temperature and sound, and, therefore, did not support a conclusion that designed objective for the steam trap was met during operation or following maintenance.

Analysis: The inspectors determined that the licensee's failure to provide adequate acceptance criteria for steam trap performance during PM testing was a performance deficiency warranting further review. The inspectors concluded that the finding was greater than minor in accordance with IMC 0612, Power Reactor Inspection Reports, Appendix B, "Issue Screening," dated September 20, 2007, because the finding was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the licensee failed to provide adequate procedures to support the PM testing of steam traps in the TDAFWP system.

The inspectors evaluated the finding using Appendix A, of IMC 0609, "Significance Determination Process," dated January 10, 2008, and answered no to all of the questions for the Mitigating Systems cornerstone; therefore the finding was determined to be of very low safety significance (Green) in accordance.

The inspectors also determined that the primary cause for this finding was related to the cross-cutting area of human performance, resources, because ample opportunity was available to correct Procedure CMP-13-01 during multiple prior maintenance activities. Specifically, procedures to performed proper PM testing of steam traps which could affect operation of safety-related systems were not complete, accurate, and up-to-date (H.2(c)).

Enforcement: 10 CFR, Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states in part that, activities affecting quality, shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to this, the inspectors identified that procedure CMP-13-01, "TD-Turbine Room Traps and Drains-Trap Maintenance," was not adequate to support proper PM testing of TDAFWP system steam trap Number 26. The licensee entered this issue into its corrective action program as condition reports CR026606 and CR026282. Corrective actions by the licensee include development of appropriate acceptance surveillance and PM testing criteria. Additionally, the licensee implemented interim actions to monitor trap performance. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000305/2007005-03).

1R20 Outage Activities (71111.20)

.1 Other Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for a planned mid-cycle outage that began on October 4, 2007, and continued through October 12. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed the reactor shutdown and cooldown, outage equipment configuration and risk management, electrical lineups, selected clearances, control and monitoring of decay heat removal, control of containment activities, startup and heatup activities, and identification and resolution of problems associated with the outage. The outage had been scheduled to repair leaks on the main generator hydrogen cooler.

This inspection constitutes one other outage sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Routine Surveillance Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- leak test of RCS supply valves to the RHR pumps.

The inspectors observed in plant activities and reviewed procedures and associated records to determine whether: preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as left setpoints were within required ranges; and the calibration frequencies were in accordance with TSs, the USAR, procedures, and applicable commitments; measuring and test equipment calibration was current; test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied; test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used; test data and results

were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program. Documents reviewed are listed in the Attachment.

This inspection constitutes one routine surveillance testing sample as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

.2 In-service Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- as found surveillance testing of FW-7B prior to maintenance.

In addition the inspectors verified, where applicable, for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers Code. Documents reviewed are listed in the Attachment.

This inspection constitutes one inservice inspection sample as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

.3 Reactor Coolant System Leak Detection Inspection

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- surveillance for increased RCS leakage performed on October 22, 2007.

Documents reviewed are listed in the Attachment.

This inspection constitutes one RCS leak detection inspection sample as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications:

- temporary gagging of ASV-30; and
- feedwater regulating and bypass valve timing tests.

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected systems. The inspectors also compared the licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance.

This inspection constitutes two samples as defined in Inspection Procedure 71111.23-05.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on October 23, 2007, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the technical support center to verify that event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package listed in the Attachment.

This inspection constitutes one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings of significance were identified.

3. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS2 As-Low-As-Is-Reasonably-Achievable (ALARA) Planning and Controls 71121.02

.1 Radiological Work Planning

a. Inspection Scope

The inspectors compared the results achieved (dose rate reductions, person-rem used) with the intended dose established in the licensee's ALARA planning for dose significant work activities during the refueling outage KR-28. The inspectors assessed the reasons for any inconsistencies between intended and actual work activity doses.

This inspection constitutes one sample as defined in Inspection Procedure 71121.02

b. Findings

No findings of significance were identified.

.2 Verification of Dose Estimates and Exposure Tracking Systems

a. Inspection Scope

The inspectors reviewed the licensee's method for adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered.

The inspectors assessed whether adjustments to estimated exposure (intended dose) were based on sound radiation protection and ALARA principles.

This inspection constitutes one sample as defined in Inspection Procedure 71121.02

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems 71122.01

.1 Groundwater Protection Initiative

a. Inspection Scope

The inspectors reviewed the licensee's procedures to assess whether a program was either already in-place or being developed for identifying and assessing potential spills/leaks of radioactively contaminated fluids. The inspectors reviewed the licensee's 10 CFR 50.75(g) file, which documented historical spills/leaks of contaminated liquids. The inspectors selectively reviewed the site's historical spills/leaks focusing on those occurrences with the potential for radiological impact. The inspectors reviewed the licensee's evaluation of those incidents to assess the adequacy of the licensee's evaluations; including the associated projected dose to the public, as applicable. The inspectors reviewed vendor reports which evaluated the hydrogeologic characteristics of the site. Additionally, the inspectors discussed with the licensee its plans for enhancing its existing groundwater monitoring program for identifying potential onsite leaks and spills. These reviews were performed to determine if the licensee had or was developing a program for early detection of spills/leaks, understood the site's groundwater flow characteristics and pathways to the environment, and to determine if the licensee had the capability through its groundwater monitoring initiatives to assess the radiological impact of a future spill/leak should it occur.

This inspection, in addition to the inspection activities documented in Inspection Report 05000305/2006003, constitute two samples as defined in Inspection Procedure 71122.01.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications PI for the first quarter 2006 through the third quarter 2007. To determine

the accuracy of the PI data, the inspectors used the PI definitions and guidance in Revision 5 of the Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline." The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC Integrated Inspection reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator; none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one unplanned scrams with complications sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.2 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures PI for the first quarter 2006 through the third quarter 2007. To determine the accuracy of the PI data reported during this period, the inspectors used the definitions and guidance in Revision 5 of NEI 99-02 and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73." The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports and NRC Integrated Inspection reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one safety system functional failures sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.3 Reactor Coolant System (RCS) Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Leakage PI for the first quarter 2006 through the third quarter 2007. To determine the accuracy of the PI data reported during those periods, the inspectors used PI definitions and guidance in Revision 5 of NEI 99-02. The inspectors reviewed the licensee's operator logs, RCS leakage tracking data, issue reports, event reports and NRC Integrated Inspection reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or

transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one RCS leakage sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety and Occupational Radiation Safety

.1 Routine Review of items Entered Into the Corrective Action Program

a. Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program (CAP) at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Corrective Action Program documents generated for minor issues are listed in the Attachment for this report.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented earlier in this report.

.2 Daily Corrective Action Program Reviews

a. Scope

To assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

.3 Semi-Annual Trend Review

a. Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six-month period of July through December 2007, although some examples tend beyond those dates where the scope of the trend warranted.

The review included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This review constituted one semi-annual trend inspection sample.

b. Findings

No findings of significance were identified.

.4 Annual Sample: Review of Operator Workarounds (OWAs)

a. Inspection Scope

The inspectors evaluated the licensee's implementation of its process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the OWAs on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of OWAs. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into its corrective action program, and proposed or implemented appropriate and timely corrective actions that addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and

operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds.

The above constitutes completion of one operator workarounds annual inspection sample.

b. Findings

No findings of significance were identified.

.5 Selected Issue Follow-up Inspection: Control of Foreign Material in Containment

a. Inspection Scope

As the result of two similar NRC findings in the last eighteen months, the inspectors performed a review of the licensee's controls for foreign materials and scaffolding in containment. The review looked at past problems with foreign material, portable equipment, and scaffolding in containment, and the subsequent corrective actions as well as CAPs that were associated with a trend.

The inspectors evaluated the licensee's corrective actions, which included action requests, condition evaluations and procedure change requests. The inspectors also reviewed the adequacy of the current revisions of the licensee's Quarterly Containment Inspection procedure and the Cold Shutdown Containment Inspection procedure.

The above constitutes completion of one in-depth problem identification and resolution sample.

b. Findings

No findings of significance were identified.

.6 Selected Issue Follow-up Inspection: Inadequate Seismic Storage Requirements

a. Inspection Scope

While performing a plant status walk-down; the inspectors noted a number of unsecured equipment carts on the 657-foot elevation of the auxiliary building near the auxiliary building special and normal ventilation systems. The inspectors reviewed GNP-01.31.01, "Plant Cleanliness and Storage," and identified that it allowed uncontrolled storage of portable equipment in the vicinity of Seismic Class 1 systems. This deficiency was identified as a finding and NCV in the first quarterly inspection report for 2007 (Inspection Report 05000305/200702). The inspectors chose to review the corrective actions and extent of condition for this first quarter finding as a selected issue follow-up.

The above constitutes completion of one in-depth problem identification and resolution sample.

b. Findings

(1) Inadequate Seismic Storage Requirements

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," during a review of the control and storage of material. Specifically, procedure GNP-01.31.01, "Plant Cleanliness and Storage," permitted uncontrolled storage of materials next to a Seismic Class 1 system.

Description: On December 4, 2007, the inspectors noted a number of unsecured equipment carts near the auxiliary building in the vicinity of the auxiliary building special and normal ventilation systems. The inspectors reviewed GNP-01.31.01, "Plant Cleanliness and Storage," and found that it allowed uncontrolled storage of portable equipment in the vicinity of the Seismic Class 1 system. This same deficiency was identified as a finding in the first quarter inspection report for 2007 (NCV 05000305/2007002-05).

The inspectors reviewed the condition report from the original finding, CAP043166, "Inspectors Raise Concern with Improper Storage Allowed by Procedure GNP 01.31.01", and found that the deadline for the evaluation and correction of GNP 01.31.01 had been extended three times and was currently set at March 30, 2008. The inspectors found that procedure GNP 11.08.01, "Action Request Process," Step 6.8.2.1, indicated that the licensee should consider "interim actions that may be necessary to ensure the potential for further adverse conditions is minimized." In addition, procedure PI KW 200, "Corrective Action," which replaced GNP 01.31.01, Step 3.7.2, states that, "if the threat is continuous, implement corrective actions immediately, or implement compensatory actions to reduce the threat or mitigate the consequences." However, the inspectors found no evidence that compensatory measures had been implemented that would prevent reoccurrence while the procedure was being evaluated and corrected. The current deadline for completion of the evaluation and procedure change was after the beginning of the refueling outage and after outage-related equipment would be pre-staged.

As part of the inspection sample the inspectors toured the plant and found two additional instances where GNP-01.31.01 allowed uncontrolled storage of portable equipment in the vicinity of Seismic Class 1 systems. The first instance was in the turbine building basement, where the inspector found two fans in the vicinity of the TDAFWP steam supply line, which was Class 1 designated equipment. The storage requirements for this portion of the turbine building basement were not defined in GNP-01.31.01. The second instance was in the auxiliary building on the 618-foot elevation adjacent to the SW-1400 and DW-161 valves. Both valves and portions of the piping are Seismic Class 1. There was no portable equipment in the vicinity, but GNP-01.31.01 does not preclude uncontrolled storage of portable equipment directly adjacent to those components.

USAR, Appendix B, Special Design Procedures, included Component Cooling System and Auxiliary Feedwater System, as such, the inspectors concluded that the procedures used for protection of Class 1 systems, GNP-01.31.01, was insufficient in that it did not provide standards for storage that protects the Class 1 equipment delineated in Appendix B of the USAR.

Analysis: The inspectors determined that GNP-01.31.01 was inadequately developed and narrowly scoped. Additionally, opportunities existed to correct it and/or place compensatory measures in place after the NRC issued an NCV related to this issue in the first quarter. These observations constituted performance deficiencies warranting further evaluation.

Using Appendix B of IMC 0612, dated September 20, 2007, the inspectors determined that the finding was greater than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the procedure allowed uncontrolled storage of materials in the vicinity of Seismic Class 1 systems that could render the systems inoperable during a seismic event.

Using Appendix A of IMC 0609, the inspectors answered “no” to all the screening questions in the Significance Determination Process Phase 1 Screening Worksheet in the Mitigating Systems column; therefore, this finding is of very low safety significance (Green).

The inspectors also determined that the finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee failed to take appropriate timely corrective actions or place compensatory actions in place after the NRC issued an NCV relating to this issue in the first quarter of 2007 (P.1(d)).

Enforcement: 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” states, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances. Contrary to this, GNP-01.31.01, “Plant Cleanliness and Storage,” failed to prohibit uncontrolled storage of materials next to the seismically classified, safety-related systems. The licensee entered this item into its corrective action program as CAP043166. Corrective actions, to date, included the conduct of plant tours of the auxiliary and turbine buildings to ensure equipment storage was appropriate with respect to safety-related equipment and immediate updates to GNP-01.31.01. Because this violation was of very low safety significance and was entered into the licensee’s corrective action program, this violation was being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000305/2007005-04).

4OA5 Other Activities

.1 (Closed) Unresolved Item (URI) 05000305/2007006-04: No Procedure for Determining Availability of Offsite Power Supply When Contingency Analyzer Is Out-of-Service.

During the Component Design Bases Inspection (CDBI) at Kewaunee Power Station, conducted between January 29, 2007, and March 2, 2007, the inspectors identified an URI related to the contingency analyzer. Specifically, the licensee did not have a procedure for determining the availability of adequate offsite power supply when notified by the Transmission System Operator (TSO) that the real-time contingency analysis (RTCA) software program was not available or was out-of-service.

At the time of the CDBI, the inspectors noted that station procedure A-EG-43, Abnormal Grid Conditions, Revision E, relied on notification from the TSO, American Transmission

Company (ATC), about potential degraded voltage condition on the grid to preclude the separation of safety buses due to actuation of the degraded voltage relays. The ATC employs a software program that predicts voltage at the Kewaunee switchyard following a grid disturbance, such as a unit trip. If this tool was not available or out-of-service, ATC procedure RTO-OP-03 stated that the licensee was to be notified. However, Procedure A-EG-43 did not provide criteria for determining operability of the offsite power supply nor direct operators to take actions in response to this notification. These criteria and actions are needed to ensure the grid and the safety buses were promptly evaluated for operability. The licensee initiated corrective action CAP 041278 to address this issue.

The inspectors noted that Generic Letter 2006-02, discusses the use of transmission load flow analysis tools to assist nuclear power plants in monitoring grid conditions for determining the operability of offsite power under plant TSs.

In light of the above described condition, the inspectors reviewed licensee's response to Generic Letter 2006-02 "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power", in general, and specifically, question 2(f), which was applicable to the URI described above. The licensee's response to this question stated that in the event that the TSO loses the ability to monitor or predict the operation of the transmission system affecting off site power to Kewaunee, the TSO would notify the Midwest Independent Transmission System Operator (MISO), validate MISO's ability to monitor and predict the operation of the transmission system, and then communicate to Kewaunee. This communication was to be made as soon as practical or per Procedure RTP-OP-03. Should MISO also lose its ability to monitor or predict the operation of the transmission system affecting off-site power to Kewaunee, MISO was to notify the TSO. MISO's Abnormal Operating Procedures (AOPs) govern its transmission system operation for failures of different components of analytical and communication tools. For loss of its RTCA software program, MISO would consider the results of the local transmission operator's analytical tools. For loss of both sets of tools, the MISO Operating Engineer would rely on off-line power flow tools to replicate operating conditions and predict contingent operation.

The inspectors also noted that when the TSO was unable to determine whether off site power voltage and capacity was adequate, the TSO would notify Kewaunee per an interface agreement. The plant would then enter the condition into its CAP as part of the operability and reportability determination processes. The inspectors also took note of the fact that subsequent to the inspection, Procedure A-EG-43 was replaced with new Procedure OP-KW-AOP-EG-00, Abnormal Operating Procedure, Revision 0. Step 13 of the procedure discusses the actions to be taken by the operators in response to the notification from the TSO.

Based on the inspectors review of the licensee's response to Generic Letter 2006-02 and review of Abnormal Operating Procedure OP-KW-AOP-EG-001, the inspectors believed that the existing interface agreement, communication protocols, and the procedure in place, adequately addresses the issue of how Kewaunee would deal with grid degraded voltage condition notification from the TSO. The CAP was deemed to be an appropriate method to assess the condition and to begin the operability and reportability determination processes. As such, this unresolved item is closed.

4OA6 MANAGEMENT MEETINGS

.1 Exit Meeting Summary

On January 9, 2008, the inspector presented the inspection results to Mr. S. Scace and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

An interim exit meeting was conducted for

- a. Access Control to Radiologically Significant Areas and Groundwater Protection Initiative with Mr. T. Webb, on October 5, 2007, and Mr. M. Hale on December 20, 2007.
- b. Biennial Operator Requalification Program Inspection with Mr. L. Baron, Supervisor, Initial License Training, on December 5, 2007.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

S. Scace, Site Vice President
M. Crist, Plant Manager
L. Armstrong, Nuclear Engineering Director
T. Breene, Nuclear Licensing Manager
J. Ruttar, Nuclear Operations Manager
W. Henry, Nuclear Maintenance Manager
S. Wood, Nuclear Emergency Preparedness Manager
J. Hale, Radiation Protection and Chemistry Manager
J. Madden, Nuclear Oversight Manager
T. Webb, Nuclear Station Safety and Licensing Director
F. Winks, Nuclear Training Manager
L. Baron, Supervisor, Initial License Training
R. Adams, Health Physicist
B. Lembeck, Radiation Protection/ALARA Supervisor
R. Pochron, Health Physics Coordinator
T. Snider, Health Physicist

Nuclear Regulatory Commission

M. Kunowski, Chief, Reactor Projects Branch 5
D. McNeil, Senior Operations Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000305/2007005-01	NCV	Failure to Characterize and Manage Risk In Accordance With Maintenance Rule With the Turbine-Driven Auxiliary Feedwater Pump in Pull-to-Lock (Section 1R13)
05000305/2007005-02	NCV	Solenoid Valve SW-4B Not Installed Properly (Section 1R15)
05000305/2007005-03	NCV	Inadequate Procedures for Post-Maintenance Testing of Steam Traps in the TDAFWP System (Section 1R19)
05000305/2007005-04	NCV	Inadequate Seismic Storage Procedure (Section 4OA2.6)

Closed

05000305/2007006-04	URI	No Procedure for Determining Availability of Off site Power Supply When Contingency Analyzer is Out-of-Service (Section 4OA5)
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LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector 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 on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1R01 Adverse Weather Protection

Corrective Action Documents:

- PCR 011019; Include Frazil Ice Operations In GNP 12.06.01, Cold Weather Operations

Procedures:

- GNP-12.06.01; Hot and Cold Weather Operations; Revision 5
- GNP-12.06.01; Hot and Cold Weather Operations; Revision 6
- N-HS-22; Heating System; Revision 37
- N-HS-22-CL; Heating System Checklist; Revision 40

1R04 Equipment Alignment

Procedures:

- SP-31-168B; Train B Component Cooling Pump and Valve Test – IST; Revision 15
- SP-33-098B; Train B Safety Injection Pump and Valve Test – IST; Revision 9

1R05 Fire Protection

Corrective Action Documents:

- CA 022623; NRC Question Regarding Rod Insertion Limit Alarms
- CA 022624; NRC Question Regarding Rod Insertion Limit Alarms
- CA 022625; NRC Question Regarding Rod Insertion Limit Alarms
- CA 022626; NRC Question Regarding Rod Insertion Limit Alarms
- CR 026179; NRC Question Regarding Rod Insertion Limit Alarms
- CR 026549; Condition Report Generated to Track the Implementation of Improved Technical Specification
- Kewaunee Power Station Active Fire Protection System Impairment Form 06-141; Cable Spreading Room Sprinkler System; Lack of Suppression Coverage on Certain Appendix "R" Cable Trays; December 15, 2006
- Kewaunee Power Station Active Fire Protection System Impairment Form 07-81; Appendix R Lighting Is Non-Functional in Zones AX-23A, AX-24, TU-92 and TU-95C; August 24, 2007
- Kewaunee Power Station Active Fire Protection System Impairment Form 07-91; Smoke Detector 1101-1, Located in the Screen House Tunnel, Is in Trouble Alarm; September 10, 2007
- Kewaunee Power Station Active Fire Protection System Impairment Form 07-95; Appendix R Light RAO2 Determined To Be Out-of-Service Due to Low Water Level and "Fast Charge" Indication; September 20, 2007
- Kewaunee Power Station Active Fire Protection System Impairment Form 07-100; Scaffold Is Blocking Appendix R Light #EC-RAM-24; October 8, 2007
- Kewaunee Power Station Active Fire Protection System Impairment Form 07-104; Appendix R Emergency Light RTB-11 Found To Be Performing Incorrectly during PMP-41-06B; November 3, 2007

1R11 Licensed Operator Regualification Program

Corrective Action Documents:

- CR 023102; EP Drill Cue Card for ENS Notification Was Incorrect
- CR 023133; Control Room Communicator Headset Difficult to Use
- CR 023187; Control Room/TSC Drill Communication
- CR 023188; Annual Control Room Notifier for NAO's and NCO's
- CR 023242; Notification Issue Discovered During October 13, 2007 Plant Emergency Drill
- CR 023259; October 23, 2007 Emergency Preparedness Drill, Initial Notifications Two Minutes Late
- CR 023308; Drill Debrief Comment on October 23, 2007
- CR 023338; Confusion of Simulator Control Room Fax vs Plant Control Room Fax During Drill
- CR 023687; EP Exercise – Operating Crew had Difficulty Notifying Site Personnel
- Kewaunee Power Station 2005 Biennial Evaluated Exercise Report – November 1, 2005
- Kewaunee Power Station October 2007 Functional Exercise (KOCT07FE) Management Critique
- Kewaunee Power Station December 2007 Biennial Exercise (KDEC07EX) Management Critique
- Kewaunee Power Station December 4, 2007 Emergency Exercise Time Line Data
- Kewaunee Power Station 2007 EP Exercise Evaluation Team Notes Data

1R12 Maintenance Effectiveness

Corrective Action Documents:

- A1E000015; Track the N-31 Maintenance Rule (a)(1) Action Plan in Condition Report System
- A1E000023; Track the Reactor Protection Maintenance Rule (a)(1) Action Plan
- A1G000037; Track the N-31 Maintenance Rule (a)(1) Action Plan Condition Report System
- CA 014760; Reactor Protection System Components
- CA 014938; Investigate 700 Ohm Resistance Between Circuit and Plant Ground
- CA 014941; Obtain PRB Funding for this Nuclear Instrumentation Replacement Design Change Request
- CA 014943; Obtain FPRB Funding for this Nuclear Instrumentation Replacement Design Change Request
- CA 014945; Perform a Vendor Plant Study
- CA 014946; Install Design Change Request to Replace Power Range Nuclear Instrumentation Drawers
- CAP Search for Reactor Protection System; November 9, 2007
- CAP Search for Reactor Protection System; November 21, 2007
- CR 025005; Review the Maintenance Rule Performance Criteria for Nuclear Instrumentation
- CR Search for Reactor Protection System; November 9, 2007
- CR Search for Reactor Protection System; November 21, 2007
- MRE 002880; Power Range Drawer N42A Failing. Condition Report Indications Drifting Low
- MRE 002929; Out of Specification During SP-48-004B
- MRE 002932; Out of Tolerance During Performance of SP-48-004D
- MRE 002985; Perform an Maintenance Rule Evaluation on Work Request 06-4175: N-31 Failure
- MRE 002995; Low Range High Flux Reactor Trip
- MRE 002997; Power Range Nuclear Instrumentation N-42 Failure
- MRE 003054; CAP for Work Request 07-000981
- Kewaunee Power Station Excore Nuclear Instrumentation System Data; System 48, Function 01; April 2006 through September 2007

- Kewaunee Power Station Nuclear Instrumentation N-41, N-42, N-43, and N-44 Data; April 2006 through September 2007
- Kewaunee Power Station Reactor Protection Reactor Coolant Temperature Instruments Data; May 2006 through October 2007
- Kewaunee Power Station Reactor Protection System Monthly Activity Data; May 2006 through October 2007
- Kewaunee Power Station System Overview; Nuclear Instrumentation – Category A; Maintenance Rule Category (a)(1); Third Quarter of 2007
- Maintenance Rule (a)(1) Evaluation – Reactor Protection; June 10, 2007
- Maintenance Rule System Basis; Nuclear Instrumentation; Revision 6
- Maintenance Rule System Basis; Reactor Protection and Reactor Coolant Temperature Instruments; Revision 9
- Root Cause Evaluation 000745; Low Range High Flux Reactor Trip; Revision 3
- Root Cause Evaluation K-2007-0757; Reactor Trip During Performance of SP-48-0041; August 22, 2007
- Root Cause Evaluation K-2007-0757; Reactor Trip During Performance of SP-48-0041; Revision 1

1R13 Maintenance Risk Assessments and Emergent Work Control

Corrective Action Documents:

- CA 019395; Containment Spray Pump B Breaker 16108 Over Current Trip
- CA 019399; Containment Spray Pump B Breaker 16108 Over Current Trip
- CA 022021; Containment Spray Pump B Breaker 16108 Over Current Trip
- CA 022307; Containment Spray Pump B Breaker 16108 Over Current Trip
- CR 020783; Review of Reactor Coolant System Leakage
- CR 021694; SD-3A Opened Fully When MS-1A Was Closed
- CR 022251; Probable Risk Assessment Model in Safety Monitor
- CR 022302; Probable Risk Assessment Not Updated for AFW Lineup During Startup
- CR 022304; Probable Risk Assessment Model Updated for Safety Injection Pumps Inoperable Per Procedure N-O-02
- CR 022358; Components Missing in Probable Risk Assessment Model Lead to Unidentified Yellow Risk Condition
- CR 022468; Containment Spray Pump B Breaker 16108 Over Current Trip
- CR 022631; Update of Service Water Abnormal Operating Procedure – Removed Step to Evaluate Ventilation in Flooding Scenario
- CR 022637; Unidentified Yellow Probable Risk Assessment Condition
- CR 022638; Procedure SP-14-026B Delayed Due to Probable Risk Assessment Concerns
- CR 022696; Request for Additional Training on Risk Assessment
- CR 025371; Unidentified Yellow Risk Due to Inadequate Risk Guidance for Startups
- MRE 000944; Containment Spray Pump B Breaker 16108 Over Current Trip
- RCE 000059; Containment Spray Pump B Breaker 16108 Over Current Trip
- Apparent Cause Evaluation Data for CR 022358; Components Missing in Probable Risk Assessment Model Lead to Unidentified Yellow Risk Condition
- Drawing XK-100-2501; Control Valve; Mounting for Switches and Positioner; Revision F5
- Emergent Work Risk Evaluation Data; October 10, 2007
- Emergent Work Risk Evaluation Data; October 11, 2006
- Emergent Work Risk Evaluation Data; October 17, 2006
- Emergent Work Risk Evaluation Data; October 19, 2006
- Emergent Work Risk Evaluation Data; October 20, 2006
- Emergent Work Risk Evaluation Data; October 23, 2006

- Kewaunee Nuclear Power Plant Visual Examination Record; 3" RC to Pressurizer; Procedure NEP-15.05; Revision B
- Kewaunee Power Station Containment Inspection Checklist; September 5, 2007
- Kewaunee Power Station Control Room Narrative Log Data; October 4, 2007, through October 7, 2007
- Kewaunee Power Station Interim Root Cause Evaluation 2007-0059; Containment Spray Pump B Breaker 16108 Over Current Trip
- Kewaunee Power Station Reactor Coolant System Leakage; Cycle 29; November 3, 2006, through October 3, 2007
- Kewaunee Power Station Probabilistic Risk Assessment; Part V PRA Risk Analysis; Volume KPS.RA.005 – Evaluation of Risk Due to AFW Pumps Placed in Pullout During Startup From a Maintenance Outage; Revision 0
- Maintenance Rule 10 CFR 50.65(a)(4) Risk Projection for Week Starting October 8, 2007
- Maintenance Rule 10 CFR 50.65(a)(4) Risk Projection for Week Starting October 12, 2007
- Maintenance Rule 10 CFR 50.65(a)(4) Risk Projection for Week Starting October 15, 2007
- Maintenance Rule 10 CFR 50.65(a)(4) Risk Projection for Week Starting October 22, 2007
- Safety Monitor 3.5 – Risk Profile Report Data; October 31, 2007
- Shutdown Safety Assessment Checklist Data; October 6, 2007 – October 10, 2007

Procedures:

- GNP-08.21.01; Risk Assessment for Plant Configurations; Revision 12
- N-FW-05B-CL; Auxiliary Feedwater System Prestartup Checklist; Revision AM
- NF-AA-NAF-0003; Nuclear Analysis and Fuel Department Document Control; Revision 0
- NF-AA-PRA-101-0410; Probabilistic Risk Assessment Procedures and Methods: PRA Configuration Control Program; Revision 1

1R15 Operability Evaluations

Corrective Action Documents:

- CA 029102; Automatic Reactor Trip
- CA 030498; Diesel Generator Loads Cable Losses Not Included in Diesel Generator Loading
- CA 030499; Reactor Trip During Performance of SP-48-0041
- CA 030549; Incorrect Control Power Transformer Installed in Control Circuit
- CA 031283; Additional Emergency Diesel Generator Loading Based on Emergency Operating Procedures
- CA 031638; New NRC Performance Indicator
- CA 031673; Verify Past Loading on Emergency Diesel Generators Did Not Result in a Safety System Functional Failure
- LA 000345; Determination of LER 2007-007 If a Safety System Functional Failure
- LA 000346; Determination of LER 2007-006 If a Safety System Functional Failure
- LA 000561; Perform Mitigating System Performance Index/Safety System Functional Failure Review for LER 2007-002
- Installation and Maintenance Instructions; 4-Way Nuclear Power Plant Solenoid-Operated Pilot Valves; 2-Position Single or Dual Solenoids; Series NP8344
- Kewaunee Power Station Licensee Event Report 2006-001; Main Feedwater Pump A Trip During Planned Power Reduction Followed by a Manual Reactor Trip; June 23, 2006
- Kewaunee Power Station Licensee Event Report 2006-002; Safety-Related Relay Racks with Improper Quality Classification of Foxboro Signal Conditioning Modules; June 19, 2006
- Kewaunee Power Station Licensee Event Report 2006-003; Residual Heat Removal Pumps Declared Inoperable Due to Flooding Vulnerability; July 5, 2006

- Kewaunee Power Station Licensee Event Report 2006-004; Incorrect Assumption Regarding De-Rating of Emergency Diesel Generators During Loading Operation; December 28, 2006
- Kewaunee Power Station Licensee Event Report 2006-005; Seal Water Flow to the Service Water Pump Bearings Found Degraded; July 31, 2006
- Kewaunee Power Station Licensee Event Report 2006-006; Safety Injection Accumulator Level to Volume Correlation and Alarm Setpoints Non-Conservative; September 7, 2006
- Kewaunee Power Station Licensee Event Report 2006-007; Reactor Coolant System Resistance Temperature Detector Cross Calibration Procedure has the Potential to Exceed the Technical Specification Limiting Condition for Operation Allowed Time Limit; August 11, 2006
- Kewaunee Power Station Licensee Event Report 2006-008; Diesel Generator Operability Testing Interval Exceeded; September 11, 2006
- Kewaunee Power Station Licensee Event Report 2006-009; Emergency Diesel Generator Fuel Oil Leak; October 16, 2006
- Kewaunee Power Station Licensee Event Report 2006-010; Inadequate Calibration of Radiation Monitor R-19; October 2, 2006
- Kewaunee Power Station Licensee Event Report 2006-012; Reactor Trip From Loss of Instrument Bus; December 29, 2006
- Kewaunee Power Station Licensee Event Report 2006-013; Reactor Trip From Nuclear Instrumentation Low Range-High Flux Trip Caused by Blind Relay Contact Failure; January 9, 2007
- Kewaunee Power Station Licensee Event Report 2007-001; Reactor Trip During Turbine Trip Mechanism Testing; March 12, 2007
- Kewaunee Power Station Licensee Event Report 2007-002; Issues With AMAG/Westinghouse Calculations for Full Power Result in Reduced Power Operation; February 19, 2007
- Kewaunee Power Station Licensee Event Report 2007-003; Emergency Diesel Generator Design Loading Calculations Non-Conservative Due to Old Design Issues; April 4, 2007
- Kewaunee Power Station Licensee Event Report 2007-004; Reactor Trip During Quarterly Nuclear Instrumentation Calibration Procedure; April 25, 2007
- Kewaunee Power Station Licensee Event Report 2007-005; Incorrect Control Power Transformers Results in Inoperable Safety-Related Loads; May 2, 2007
- Kewaunee Power Station Licensee Event Report 2007-006; Reactor Coolant System Pressure-Temperature Limits Momentarily Exceeded During Solid Plant Operation; May 31, 2007
- Kewaunee Power Station Licensee Event Report 2007-007; Unexpected Safety Injection Response with Safeguards Buses Connected to the Reserve Auxiliary Transformer; May 22, 2007
- Kewaunee Power Station Licensee Event Report 2007-008; Inadequate Emergency Diesel Generator Testing When Redundant Emergency Diesel Generator Was Inoperable; August 17, 2007
- Kewaunee Power Station Safety System Functional Failure Data; Mitigating Events; January 9, 2007, through August 17, 2007
- Kewaunee Power Station Scrams With Complications Data; October 30, 2006, through February 27, 2007
- Kewaunee Power Station Reactor Coolant System Leakrate Data for 2006
- Kewaunee Power Station Reactor Coolant System Leakrate Data for 2007

1R19 Post Maintenance Testing

Corrective Action Documents:

- CR 020783; Review of Reactor Coolant System Leakage

- Drawing XK-100-2501; Control Valve; Mounting for Switches and Positioner; Revision F5
- Emergent Work Risk Evaluation Data; November 19, 2007
- Kewaunee Nuclear Power Plant Visual Examination Record; 3" RC to Pressurizer; Procedure NEP-15.05; Revision B
- Kewaunee Power Station Containment Inspection Checklist; September 5, 2007
- Kewaunee Power Station Control Room Narrative Log Data; October 4, 2007, through October 7, 2007
- Kewaunee Power Station Reactor Coolant System Leakage; Cycle 29; November 3, 2006, through October 3, 2007
- Kewaunee Power Station System Leakage Test Record for Repair/Replacement Activities ASME Boiler and Pressure Vessel Code Section XI; 1998 Edition 2000 Addenda; Revision E

Procedures:

- OP-KW-OSP-DGE-001B; Diesel Generator B Monthly Availability Test; Revision 1
- PMP-01-09; AS – Station Air Compressors F and G Maintenance QA-2; Revision L
- 50.59 Applicability Review for PMP-01-09; AS – Station Air Compressors F and G Maintenance QA-2; Revision L
- PMP-16-01; TAV- Turbine Building Ventilation Fan Maintenance; Revision 24
- MA-KW-MPM-SW-005; Traveling Screen 1A1 Drive Train Maintenance and Chain Adjustment; Revision 0
- SP-05A-202; Feedwater Regulating and Bypass Valves Timing test – IST; Revision R
- 50.59 Applicability Review for SP-05A-202; Feedwater Regulating and Bypass Valves Timing test – IST; Revision R

Work Orders:

- Preventive Work Order 07-001885-000; Inspect/Clean/Test Actuator CC400B/MV32120 Component Cooling to Residual Heat Removal Heat Exchanger B
- Preventive Work Order 07-003085-000; Inspect/Clean/Test Actuator RHR299B/MV32135 Residual Heat Removal Heat Exchanger Outlet to Safety Injection Pump B
- Work Order 07-009546-000; Check Equipment ID Tag to Ensure Proper Component as Being the Leaking Lube Oil Piping
- Work Order 07-012092-000; Install New Pipe Union
- Work Order 07-013149-000; Perform Necessary Baseline Testing, Disassembly of Instrumentation, Reassembly and Post-Maintenance Testing of Actuator on PS-1B
- Work Order KW100309182; Air Discharge From Air compressor G

1R20 Outage Activities

Corrective Action Documents:

- Kewaunee Power Station ECP Fixed Rod Height Data; October 12 through 19, 2007
- Kewaunee Power Station Forced Outage FO29-5 Production Project Data; October 6, 2007
- Kewaunee Power Station Forced Outage FO29-5 Production Project Data; October 8, 2007
- Kewaunee Power Station Forced Outage FO29-5 Production Project Data; October 10, 2007
- Reactivity Plan; Ramp from 99.6 Percent to Shutdown; October 4, 2007

Procedures:

- E-O; Reactor Trip or Safety Injection; Revision 34
- N-CRD-49B; Reactor Startup; Revision 45
- N-0-03; Plant Operation Greater Than 35 Percent Power; Revision 62
- 50.59 Applicability Review N-0-03; Plant Operation Greater than 35 Percent Power; Revision 62

- N-0-04; 35 Percent Power to Hot Shutdown Condition; Revision 37
- N-0-05; Plant Cooldown from Hot Shutdown to Cold Shutdown Condition; Revision BM
- 50.59 Applicability Review of N-0-05; Plant cooldown from Hot Shutdown to Cold Shutdown Condition; Revision BM
- N-SI-33-CL; Safety Injection System Prestartup Checklist
- N-TB-54; Turbine and Generator Operation; Revision 79
- OP-KW-NOP-RCS-005; Draining the Reactor Coolant System; Revision 0
- SP-05A-202; Feedwater Regulating and Bypass Valves Timing Test - IST; Revision R
- 50.59 Applicability Review of SP-05A-202; Feedwater Regulating and Bypass Valves Timing Test - IST; Revision R

Work Orders:

- CR 021692; Active Leak at PS-1B
- CR 021694; SD-3A Opened Fully When MS-1A Was Closed
- CR 021736; Check Valve MD-300-2 Is Leaking Past Its Seat
- CR 021795; Items Left Unattended in Containment With RCS Temperature Greater than 200 Degrees
- CR 021813; Potential Improvements for RCS Leakage Monitoring/Detection

1R22 Surveillance Testing

Procedures:

- SP-05A-202; Feedwater Regulating and Bypass Valves Timing Test – IST; Revision R
- 50.59 Applicability Review of SP-05A-202; Feedwater Regulating and Bypass Valves Timing test – IST; Revision R
- SP-34-298; RCS Loop Supply to RHR Pumps, RHR-1A/1B Leak Check; Revision D

1R23 Temporary Plant Modifications

Corrective Action Documents:

- TMod 2007-8; Isolating ASV-30; The Blocked Closed ASV Damper Will Provide the Credited Boundary in Lieu of the Ductwork Within the Auxiliary Building Fan Floor Area
- 50.59 Applicability Review of TMod 2007-8; Isolating ASV-30

1EP6 Drill Evaluation

Corrective Action Documents:

- Kewaunee Power Station Emergency Exercise Objectives, Critique, and Evaluation Data; October 23, 2007

2OS2 As Low As Is Reasonably Achievable Planning And Controls

Corrective Action Documents:

- CR021547; Procedure for Televue HP-06.114 Is Inadequate; October 3, 2007; (NRC Identified)
- CR021542; Informational Posting on Door 255; October 3, 2007;(NRC-Identified)
- CR021657; Information Not Retrievable From the Records Vault; October 4, 2007; (NRC-Identified)
- CR021552; ALARA Planning and Controls Concerns; October 4, 2007; (NRC-Identified)

- CR021656; Improvements With Work In Progress Review Forms; October 4, 2007; (NRC-Identified)
- ALARA Plan and Associated ALARA Reviews; 2006-012 Scaffolding; August 22, 2006
- ALARA Plan and Associated ALARA Reviews; 2006-001 Refuel; August 22, 2006
- ALARA Plan and Associated ALARA Reviews; 2006-005 RCPs; August 22, 2006
- ALARA Plan and Associated ALARA Reviews; 2006-014 In Service Inspection; August 18, 2006
- ALARA Plan and Associated ALARA Reviews; 2006-003 In Service Inspection; August 18, 2006
- Kewaunee Power Station Radiation Protection ALARA Report to Include KR28; June 25, 2007
- Radiation Work Permit and Associated ALARA Reviews; RWP 452 Internal Valve Maintenance; Revisions 0 through 1

Procedures:

- HP-04.001; ALARA Plan; Revision H
- NAD-01.23; ALARA Program; Revision H
- GNP-01.23.04; ALARA Program Implementation; Revision 8
- HP-04.007; ALARA Plan Writers Guide; Revision A
- HP-01.16; Radiation Work Permit – Preparation, Issuance, and Termination; Revision 14

2PS1 Radioactive Gaseous And Liquid Effluent Treatment And Monitoring Systems

Corrective Action Documents:

- Apparent Cause Evaluation 3444; Tritium Identified in Settling Plugs; date not provided
- Kewaunee Power Station; Offsite Dose Calculation Manual (ODCM); Revision 11; February 22, 2007
- Report of Well Installation Services; STS Consultants, LTD.; August 28, 2007

Procedures:

- - NAD-01.20; Radiological Environmental Monitoring Program; Revision F; January 15, 2004

40A1 Performance Indicator Verification

Corrective Action Documents:

- Licensee Performance Indicator Report Package and References, Work Orders, Corrective Actions, and Operator Logs.

40A2 Problem Identification and Resolution

Corrective Action Documents:

- CAP 024321; No Controls Regarding Removal of Pedestal Crane Equipment
- CAP 028705; Results From Previous Containment Inspections Not Readily Available
- CAP 038513; Containment Inspection Results per GNP-12.17.01
- CAP 038722; Safety-Related Area Scaffold Not Conforming to GNP-127 for Hot Shutdown Mode
- CAP 040746; Scaffold Material Stored in Seismic Area;
- CAP 044985; Recording Receipt of a NRC Non-Cited Violation Documented in NRC Inspection Report 2007-002 on May 10, 2007
- CEO 016275; Results From Previous Containment Inspections Not Readily Available
- CEO 020003; Sheet Metal Ramps and Flooring Stored in the Personnel Air Lock Is Not Secured

- CEO 020132; Inspectors Raise Concern with Improper Storage Allowed by Procedure GNP-01.31.01
- CEO 020537; Foreign Material in Containment – NRC Non-Cited Violation in Inspection Report 2007-002-07
- CR 017605; NRC Concerns with Continuing Issues of Improper Seismic Housekeeping Control
- CR 018665; GNP-03.01.01 Incorrectly Implemented for Temporary Change
- CR 021692; Active Leak at PS-18
- CR 022266; Residual Heat Removal Pump A Seal Leakage
- CR 022486; Inadequate Inspections for Boric Acid Leakage
- CR 025370; Residual Heat Removal Pump A Seal Leakage
- CR 026220; Tool Boxes Left on Auxiliary Building Fan Floor
- CR 026711; NRC Inspection 95002 – Potential Adverse Trend for Identification of Leaks
- CR 027377; NRC Question Related to Turbine-Driven Auxiliary Feedwater Pump Steam Lines in Turbine Building
- CR 027555; Question From Senior Resident on Trending
- PCR 015090; Containment Tool boxes Were Closed, However the Covers Were Not Secured
- Kewaunee Power Station Central Reporting System Data; Boric Acid Leaks; December 18, 2007
- Kewaunee Power Station Central Reporting System Data; Non-Boric Acid Leaks; December 18, 2007
- Kewaunee Power Station Performance Summary; Boric Acid Corrosion Control – Category A; Third Quarter of 2007
- Kewaunee Power Station Performance Summary; Emergency Diesel Generators – Category A; Third Quarter of 2007
- Kewaunee Power Station Updated Safety Analysis Report; Table B.2-1; Classification of Structures, Systems and Components; Revision 20
- Kewaunee Power Station Work Order Overview Report Data; December 19, 2007
- Non-RCA Catch Containers Equipment Reliability Index Metric 7 Data; December 2006 through November 2007
- Root Cause Evaluation 2007-039; Substantive Crosscutting Issue in the Area of Human Performance

Procedures:

- PI-KW-200; Corrective Action; Revision 3
- GNP-01.31.01; Plant Cleanliness and Storage; Revision 14
- GNP-01.31.01; Plant Cleanliness and Storage; Revision 15
- GNP-11.08.01; Action Request Process; Revision AE
- 50.59 Applicability Review for GNP-11.08.01; Action Request Process; Revision AD
- GNP-12.17.01; Cold Shutdown Containment Inspection; Revision 9
- GNP-12.17.02; Containment Inspection During Operations; Revision 9
- DNAP-0114; Dominion Nuclear Self-Evaluation Program; Revision 3
- MA-AA-1002; Leakage Management; Revision 3
- PI-AA-200-2001; Trending; Revision 0
- PI-KW-200; Corrective Action; Revision 3

4OA3 Followup of Events and Notices of Enforcement Discretion

Corrective Action Documents:

- CR 020783; Review of Reactor Coolant System Leakage
- CR 021993; Numerous Personal Contamination Events Occurred Moving PS-1B Components

- CR 024037; Degradation of Protected Area Barrier
- Drawing XK-100-2501; Control Valve; Mounting for Switches and Positioner; Revision F5
- Kewaunee Nuclear Power Plant Visual Examination Record; 3" RC to Pressurizer; Procedure NEP-15.05; Revision B
- Kewaunee Power Station Containment Inspection Checklist; September 5, 2007
- Kewaunee Power Station Control Room Narrative Log Data; October 4, 2007, through October 7, 2007
- Kewaunee Power Station Personnel Contamination Data Sheets of October 5, 2007, and October 8, 2007
- Kewaunee Power Station Reactor Coolant System Leakage; Cycle 29; November 3, 2006, through October 3, 2007

4OA5 Other Activities

Corrective Action Documents:

- Kewaunee Power Station Response to Generic Letter 2006-02; Grid Reliability and the Impact on Plant Risk and the Operability of Off-site Power; February 1, 2006

LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
ASME	American Society of Mechanical Engineers
ATC	American Transmission Company
CAP	Corrective Action Program
CDBI	Component Design Bases Inspection
CFR	Code of Federal Regulations
CR	Condition Report
DRP	Division of Reactor Projects
IMC	Inspection Manual Chapter
MISO	Midwest Independent Transmission System Operator
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PI	Performance Indicator
PM	Post-Maintenance
PMT	Post-Maintenance Testing
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RTCA	Real Time Contingency Analysis
SDP	Significance Determination Process
STA	Shift Technical Advisor
SW	Service Water
TDAFWP	Turbine-Driven Auxiliary Feed Water Pump
TS	Technical Specification
TSO	Transmission System Operator
USAR	Updated Safety Analysis Report
URI	Unresolved Item