UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

February 4, 2011

Mr. David A. Heacock
President and Chief Nuclear Officer
Dominion Energy Kewaunee, Inc.
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: KEWAUNEE POWER STATION INTEGRATED INSPECTION REPORT 05000305/2010005

Dear Mr. Heacock:

On December 31, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Kewaunee Power Station. The enclosed report documents the inspection findings, which were discussed on January 4, 2011, with Mr. Stephen 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, three NRC-identified findings and one self-revealed finding of very low safety significance were identified. These findings were determined to involve violations of NRC requirements. However, because of the very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy, dated September 30, 2010. Additionally, four licensee-identified violations are listed in Section 4OA7 of this report.

If you contest the subject or severity of these NCVs, 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 Resident Inspector Office at the Kewaunee Power Station. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Kewaunee Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000305/2010005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServe

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-305
License No:	DPR-43
Report No:	05000305/2010005
Licensee:	Dominion Energy Kewaunee, Inc.
Facility:	Kewaunee Power Station
Location:	Kewaunee, WI
Dates:	October 1, 2010, through December 31, 2010
Inspectors:	R. Krsek, Senior Resident Inspector K. Barclay, Resident Inspector P. Cardona-Morales, Reactor Engineer R. Winter, Reactor Engineer J. Cassidy, Senior Health Physicist C. Zoia, Operations Engineer J. Jandovitz, Project Engineer M. Phalen, Senior Health Physicist M. Bielby, Senior Operations Engineer D. Reeser, Operations Engineer D. Passehl, Senior Reactor Analyst
Approved by:	Michael A. Kunowski, Chief Branch 5 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000305/2010005; 10/01/2010 – 12/31/2010; Kewaunee Power Station; Annual Heat Sink Performance, Operability Evaluations, and Surveillance Testing.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. The inspectors identified three Green findings and one self-revealed finding. The findings were 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.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

- Green. A finding of very low safety-significance and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when a nuclear control operator (NCO) failed to perform a procedure step, which resulted in the main feedwater regulating valve FW-7A partially closing while the reactor was at full power. Specifically, Step 6.11.2 of procedure SP-47-316A, "Channel 1 (Red) Instrument Channel Test Channel Operational Test," directed the NCO to place the main feedwater regulating valve FW-7A in manual to preclude valve movement during a simulated portion of the test; however, the NCO marked the step "not applicable" and subsequently did not perform it. The licensee initiated condition reports (CRs) CR396649 and CR405809, performed an apparent cause evaluation (ACE), and initiated corrective actions (CAs) to address the issues identified in the causal evaluation.

  The finding was determined to be more than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated December 24, 2009, because it was associated with the Initiating Events Cornerstone attribute of human performance and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to follow the procedure initiated a secondary-side plant transient. The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Tables 3b and 4a for the Initiating Events Cornerstone, dated January 10, 2008. The inspectors answered "no" to the Initiating Events Cornerstone Transient Initiator question and screened the finding as having very low significance (Green). The finding has a cross-cutting aspect in the area of human performance, Work Practices, because the personnel work practices did not support human performance. Specifically, licensee personnel failed to follow procedures (H.4(b)). (Section 1R22.2)

Cornerstone: Mitigating Systems

- Green. A finding of very low safety-significance and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to correctly translate the applicable regulatory requirements and the design basis into procedures and instructions. Specifically, the licensee failed to adequately translate the containment fan coil unit (CFCU) service water flow acceptance criteria from the current design basis calculations into the CFCU performance monitoring procedures, which resulted in the incorrect acceptance criteria in plant test procedures. The licensee took immediate corrective actions to correct the acceptance criteria in the test procedures and to perform an operability determination on CFCU C, the only one of the four CFCUs that showed a recent decrease in flow. At the end of the inspection period, the licensee was completing an apparent cause evaluation and developing additional long-term corrective actions.

  The finding was determined to be more than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated December 24, 2009, because it was associated with the Mitigating Systems Cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to ensure that procedure PMP-18-13, "Containment Fan Coil Unit Performance Monitoring (AQ-1)," contained the correct acceptance criteria for testing the CFCUs. The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Tables 3b and 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The inspectors answered "no" to the Mitigating Systems questions and screened the finding as having very low significance (Green). This finding has a cross-cutting aspect in the area of human performance, Resources, because the licensee did not maintain complete, accurate, and up-to-date procedures. Specifically, the correct acceptance criteria for testing the CFCUs from the design basis calculations were not specified in the CFCU testing procedure (H.2(c)). (Section 1R07.1)

- Green. A finding of very low significance and associated non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings", was identified by the inspectors for the failure to develop and implement an adequate surveillance test procedure to accurately assess the as-found trip setpoint for the pressure switches associated with the turbine building service water isolation function and various other safety-related functions. The licensee initiated condition report CR401813, performed an apparent cause evaluation, and initiated corrective actions to address the issues identified in the casual evaluation.

  The finding was determined to be more than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated December 24, 2009, because it was associated with the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affected the cornerstone attribute of Equipment Performance. The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination

Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Tables 3b and 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The inspectors answered "no" to the Mitigating Systems questions and screened the finding as having very low significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution, Operating Experience, because the licensee did not evaluate and communicate external operating experience to internal stakeholders in a timely manner (P.2(a)). (Section 1R15.1)

- Green. A finding of very low safety-significance and associated non-cited (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for multiple inadequate procedures, which directed closing the common train safety injection minimum flow recirculation line valves, an activity affecting quality. Specifically, station procedures directed operators to close the safety injection pump minimum flow recirculation valves in order to complete valve-timing tests, and to engage an interlock that allowed closure of the containment sump recirculation valves. However, the procedures and licensed operators failed to recognize that closure of either minimum flow recirculation valve affected the operability and availability of both safety injection pumps for certain design basis accidents because the minimum flow recirculation path was isolated. The licensee subsequently entered the issue into its corrective action program as CR393930. The licensee corrected the procedure inadequacies and completed a root cause evaluation that recommended several corrective actions to prevent recurrence.

  The finding was determined to be more than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated December 24, 2009, because it was associated with the Mitigating System Cornerstone attribute of procedure quality, and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to ensure that procedures implemented during power operations ensured the operability of both trains of safety injection. The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Tables 3b and 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The inspectors answered "yes" to the Mitigating Systems question that confirmed the finding represented a loss of system safety function. The Region III Senior Reactor Analyst (SRA) performed an SDP Phase 2 analysis and a Phase 3 analysis. The Phase 3 analysis determined that the resultant delta core damage frequency (CDF) was less than 1E-6 and delta large early release frequency (LERF) was less than 1E-7, which represented a Green finding. The dominant scenario involved a small break loss of coolant accident with operator failure to perform a rapid cool down. The finding has a cross-cutting aspect in the area of human performance, Decision Making, because although the licensee procedures cautioned that starting a safety injection pump following the closure of a minimum flow recirculation valve would result in damage to the pump, the licensee staff failed to use conservative decision making to question the adequacy of the prescribed procedure actions (H.1(b)). (Section 1R22.1)

B. Licensee-Identified Violations

Violations of very low safety significance that were identified by the licensee have been reviewed by inspectors. Corrective actions planned or taken by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Kewaunee operated at full power for the inspection period except for brief downpowers to conduct planned maintenance and surveillance activities.

1. REACTOR SAFETY

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

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 (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action (CA) procedures. Documents reviewed are listed in the Attachment to this report. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues:

- service water (SW) system; and
- emergency diesel generators (EDGs).

This inspection constituted one winter seasonal readiness preparations sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings 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:

- EDG train B;
- offsite power to busses 5 and 6;
- safety injection (SI) train B;
- SW train B; and
- auxiliary feedwater (AFW) train A.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety (RS) 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, the USAR, Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports (CRs), 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 CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted five partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On November 16-17, 2010, the inspectors performed a complete system alignment inspection of the residual heat removal (RHR) system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, and operability of support systems, and to ensure that

ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

Also, additional activities were performed during this system walkdown that were associated with Temporary Instruction (TI) 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems." These activities are described in Section 1R04.3 of this report.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings were identified.

.3 System Walkdown Associated With TI 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems."

a. Inspection Scope and Documentation

On November 16-17, 2010, the inspectors conducted a walkdown of the RHR system in sufficient detail to reasonably assure the acceptability of the licensee's walkdowns (TI 2515/177, Section 04.02.d). The inspectors also verified that the information obtained during the licensee's walkdowns was consistent with the items identified during the inspectors' independent walkdown (TI 2515/177, Section 04.02.c.3).

In addition, the inspectors verified that the licensee had isometric drawings that describe the RHR system configurations and had acceptably confirmed the accuracy of the drawings (TI 2515/177, Section 04.02.a). The inspectors verified the following related to the isometric drawings:

- high point vents were identified;
- high points that do not have vents were acceptably recognizable;
- other areas where gas can accumulate and potentially impact subject system operability, such as at orifices in horizontal pipes, isolated branch lines, heat exchangers, improperly sloped piping, and under closed valves, were acceptably described in the drawings or in referenced documentation;
- horizontal pipe centerline elevation deviations and pipe slopes in nominally horizontal lines that exceed specified criteria were identified;
- all pipes and fittings were clearly shown; and
- the drawings were up-to-date with respect to recent hardware changes and that any discrepancies between as-built configurations and the drawings were documented and entered into the CAP for resolution.

The inspectors verified that Piping and Instrumentation Diagrams (P&IDs) accurately described the subject systems, that they were up-to-date with respect to recent hardware changes, and any discrepancies between as-built configurations, the isometric

drawings, and the P&IDs were documented and entered into the CAP for resolution (TI 2515/177, Section 04.02.b).

Documents reviewed are listed in the Attachment to this report.

This inspection effort counts towards the completion of TI 2515/177, which will be closed in a later inspection report.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- fire zone AX-22; main shop, tank, and pump room;
- fire zone AX 23D; component cooling water pump 1B room;
- fire zone AX-35; control room air conditioning equipment room;
- fire zone AX-35; control room; and
- fire zone TU-94; carbon dioxide tank room.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection (FP) program that: adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive FP features in good material condition; and implemented adequate compensatory measures for out-of-service, degraded, or inoperable FP equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on the overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional risk insights, or the potential to impact equipment which could initiate or mitigate a plant transient. The inspectors verified that: fire hoses and extinguishers were in the designated locations and available for immediate use; fire detectors and sprinklers were unobstructed; 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 CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On November 30, 2010, the inspectors observed a fire brigade activation after a simulated fire started in the decontamination building in the protected area. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: proper wearing of turnout gear and self-contained breathing apparatus; proper use and layout of fire hoses; employment of appropriate firefighting techniques; sufficient firefighting equipment brought to the scene; effectiveness of fire brigade leader communications, command, and control; search for victims and propagation of the fire into other plant areas; smoke removal operations; utilization of pre-planned strategies; adherence to the pre-planned drill scenario; and drill objectives. Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection inspection sample as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the USAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. Documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's CA documents with respect to past flood-related items identified in the CAP to verify the adequacy of the CAs. The inspectors performed a walkdown of the following plant area to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- carbon dioxide tank room, auxiliary feedwater pump rooms, 480-volt switchgear rooms, and emergency diesel generator rooms.

This inspection constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings were identified.

1R07 Annual Heat Sink Performance (71111.07)

.1 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee's testing of the containment fan coil unit (CFCU) heat exchangers to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions. Documents reviewed for this inspection are listed in the Attachment to this report.

This annual heat sink performance inspection constituted one sample as defined in IP 71111.07-05.

b. Findings

Incorrect Containment Fan Coil Unit Acceptance Criteria

Introduction: A finding of very low safety significance and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to correctly translate the applicable regulatory requirements and the design basis into procedures and instructions. Specifically, the licensee failed to adequately translate the CFCU service water flow acceptance criteria from the current design basis calculations into the CFCU performance monitoring procedures, which resulted in the incorrect acceptance criteria in plant test procedures.

Description: The inspectors reviewed the most recent test data and acceptance criteria for all four CFCUs during semiannual testing conducted in 2010 under procedure PMP-18-13, "Containment Fan Coil Unit Performance Monitoring (QA-1)." The inspectors noted that the acceptance criteria for service water flow to CFCU A was 850 gallons per minute (gpm), while the remaining three CFCUs B, C, and D, had an acceptance criteria of 800 gpm. The inspectors also reviewed calculation C11159, "Determination of Minimum Pressure Required Downstream of CFCUs," Revision 2, dated October 19, 2009, that stated, in part, that the minimum post-accident service water flow through CFCUs A and B was 850 gpm.

The inspectors discussed their concerns with the licensee, who then identified that the design basis calculation for service water flow to the CFCUs, C11163, "Containment Fan Coil Unit Performance Degradation Due to Service Water System Flow Reduction Special Study," Revision 3, dated December 28, 2009, established a minimum post-accident SW flow through all CFCUs of 850 gpm. The licensee acknowledged that

PMP-18-13, Revision 5, dated April 20, 2010, did not contain the correct acceptance criteria for all four CFCUs based on the calculation of record. Further review by the inspectors identified that the 2010 CFCU test data were satisfactory even with the new acceptance criteria, with one exception. On October 26, 2010, CFCU C had an approximately 110 gpm decrease from the May 10, 2010, test with a value of only 839 gpm. The licensee initiated CR408146 and performed an Operability Determination (OD).

The licensee's OD determined that because CFCU C did not have any tubes plugged in the heat exchanger, a SW flow above 810 gpm was adequate. The licensee concluded that the component was operable but nonconforming in accordance with plant procedures. The licensee also corrected the acceptance criteria in procedure PMP-18-13 and initiated a causal evaluation to determine what caused the incorrect translation of the calculation results into the implementing test procedure.

Analysis: The inspectors determined that the failure to correctly translate the applicable regulatory requirements and the design basis into procedures and instructions, was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and was a performance deficiency warranting a significance evaluation.

The finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated December 24, 2009, because it was associated with the Mitigating Systems Cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to ensure that procedure PMP-18-13 contained the correct acceptance criteria for testing the CFCUs.

The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Tables 3b and 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The inspectors answered "no" to the Mitigating Systems questions and screened the finding as having very low significance (Green).

This finding has a cross-cutting aspect in the area of human performance, Resources, because the licensee did not maintain complete, accurate, and up-to-date procedures. Specifically, the correct acceptance criteria for testing the CFCUs from the design basis calculations were not specified in the CFCU testing procedure (H.2(c)).

Enforcement: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into procedures and instructions.

Contrary to this, on April 22, 2010, the licensee failed to establish measures to assure that applicable regulatory requirements and the design basis were correctly translated into procedures and instructions. Specifically, the licensee failed to adequately translate the acceptance criteria for the CFCU heat exchangers service water flow into procedures GNP 01.32.01, Revision 7, and PMP-18-13, Revision 5. Because this violation was of very low safety-significance and was entered into the licensee's CAP as CR408146, this violation is being treated as an NCV, consistent with Section 2.3.2 of the

NRC Enforcement Policy. (NCV 05000305/2010005-01; Incorrect Containment Fan Coil Unit Acceptance Criteria)

The licensee took immediate corrective actions to correct the acceptance criteria in the test procedure and performed an OD on CFCU C. At the end of the inspection period, the licensee was completing an apparent cause evaluation (ACE) and developing additional long-term corrective actions.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On November 23 and November 30, 2010, the inspectors observed a crew of licensed operators in the plant during licensed operator requalification job performance measures to verify that operator performance was adequate; that evaluators were identifying and documenting crew performance problems; and that training was conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- operator's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- correct use and implementation of abnormal and emergency procedures; and
- in-plant simulated manipulations.

The crew's performance in these areas was compared to the licensee's conduct of operations procedure and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings were identified.

.2 Facility Operating History (71111.11B)

Completion of Sections .2 through .10 constituted one biennial licensed operator requalification inspection sample as defined in IP 71111.11B.

a. Inspection Scope

The inspectors reviewed the plant's operating history from October 2008 through November 2010 to identify operating experience that was expected to be addressed by the Licensed Operator Requalification Training (LORT) program. The inspectors verified that the identified operating experience had been addressed by the facility licensee in accordance with the station's approved Systems Approach to Training (SAT) program to satisfy the requirements of 10 CFR 55.59(c). Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.3 Licensee Requalification Examinations

a. Inspection Scope

The inspectors performed an inspection of the licensee's LORT test/examination program for compliance with the station's SAT program which would satisfy the requirements of 10 CFR 55.59(c)(4). The reviewed operating examination material consisted of six operating tests, each containing two or three (as appropriate) dynamic simulator scenarios and six job performance measures (JPMs). The written examinations reviewed consisted of two written examinations which were Part B, Administrative Controls and Procedure Limits. The station does not use Part A, Static Simulator Examinations. Each written examination contained 32 questions, 26 of which were open reference and 6 were selected outside the 2-year sample plan. The inspectors reviewed the 2010 annual requalification operating test and 2009 biennial written examination material to evaluate general quality, construction, and difficulty level. The inspectors assessed the level of examination material duplication from week-to-week during the current year operating test and previous year's biennial written examination. The inspectors reviewed the methodology for developing the examinations, including the LORT program 2-year sample plan, probabilistic risk assessment insights, previously identified operator performance deficiencies, and plant modifications. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.4 Licensee Administration of Requalification Examinations

a. Inspection Scope

The inspectors observed the administration of a requalification operating test to assess the licensee's effectiveness in conducting the test to ensure compliance with 10 CFR 55.59(c)(4). The inspectors evaluated the performance of one shift crew in parallel with the facility evaluators during two dynamic simulator scenarios and evaluated various licensed crew members concurrently with facility evaluators during the administration of several JPMs. The inspectors assessed the facility evaluators' ability to determine adequate crew and individual performance using objective, measurable standards. The inspectors observed the training staff personnel administer the operating test, including conducting pre-examination briefings, evaluations of operator performance, and individual and crew evaluations upon completion of the operating test. The inspectors evaluated the ability of the simulator to support the examinations. A specific evaluation of simulator performance was conducted and documented in the section below titled, "Conformance with Simulator Requirements Specified in 10 CFR 55.46." Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.5 Examination Security

a. Inspection Scope

The inspectors observed and reviewed the licensee's overall licensed operator requalification examination security program related to examination physical security (e.g., access restrictions and simulator considerations) and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors also reviewed the facility licensee's examination security procedure, any CAs related to past or present examination security problems at the facility, and the implementation of security and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the examination process. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.6 Licensee Training Feedback System

a. Inspection Scope

The inspectors assessed the methods and effectiveness of the licensee's processes for revising and maintaining its LORT program up-to-date, including the use of feedback from plant events and industry experience information. The inspectors reviewed the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. The inspectors evaluated the licensee's ability to assess the effectiveness of its LORT program and their ability to implement appropriate corrective actions. This evaluation was performed to verify compliance with 10 CFR 55.59(c) and the licensee's SAT program. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.7 Licensee Remedial Training Program

a. Inspection Scope

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the previous biennial requalification examinations and the training from the current examination cycle to ensure that they addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans. This evaluation was performed in accordance with 10 CFR 55.59(c) and with respect to the licensee's SAT program. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.8 Conformance with Operator License Conditions

a. Inspection Scope

The inspectors reviewed the facility and individual operator licensees' conformance with the requirements of 10 CFR Part 55. The inspectors reviewed the facility licensee's program for maintaining active operator licenses and to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the procedural guidance and the process for tracking on-shift hours for licensed operators and which control room positions were granted watch-standing credit for maintaining active operator licenses. The inspectors reviewed the facility licensee's LORT program to assess compliance with the requalification program requirements as described by 10 CFR 55.59(c). Additionally, medical records for five licensed operators were reviewed for compliance with 10 CFR 55.53(l). Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.9 Conformance with Simulator Requirements Specified in 10 CFR 55.46

a. Inspection Scope

The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, "Simulation Facilities." The inspectors also reviewed a sample of simulator performance test records (i.e., transient tests, malfunction tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy process to ensure that simulator fidelity was maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics. The inspectors conducted interviews with members of the licensee's simulator staff about the configuration control process and completed the IP 71111.11, Appendix C, checklist to evaluate whether or not the licensee's plant-referenced simulator was operating adequately as required by 10 CFR 55.46(c) and (d). Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.10 Annual Operating Test Results (71111.11B)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the individual JPM operating tests, and the simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee from November 1 through December 17, 2010, as part of the licensee's operator licensing requalification cycle. These results were compared to the thresholds established in IMC 0609, Appendix I, "Licensed Operator Requalification

Significance Determination Process (SDP)." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11, "Licensed Operator Requalification Program." Documents reviewed are listed in the Attachment to this report.

Completion of this section constituted one biennial licensed operator requalification inspection sample as defined in IP 71111.11B.

b. Findings

No findings 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:

- boric acid transfer pump;
- AFW system; and
- auxiliary building.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or 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 CAs 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 that maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted three quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings 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 (SR) equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work during the following weeks:

- October 18, 2010;
- December 13, 2010; and
- December 20, 2010.

These activities were selected based on the potential risk significance relative to the RS 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. Documents reviewed are listed in the Attachment to this report.

These maintenance risk assessments and emergent work control activities constituted three samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed an operating experience evaluation and associated corrective action for potential operability concerns related to SR pressure switch preconditioning.

The inspectors selected this potential operability issue based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluation to ensure that subject components or systems remained available such that no unrecognized increase in risk occurred. The inspectors

determined, where appropriate, compliance with bounding limitations associated with the evaluation. Additionally, the inspectors reviewed a sampling of CA documents to verify that the licensee was identifying and correcting deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted one sample as defined in IP 71111.15-05.

b. Findings

Unacceptable Preconditioning of Safety-Related Pressure Switches

Introduction: A finding of very low significance and associated non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings", was identified by the inspectors for the licensee's failure to develop and implement an adequate surveillance test procedure to accurately assess the as-found trip setpoint for the pressure switches associated with the turbine building service water isolation function and various other safety-related functions.

Description: During a follow-up review of Task Interface Agreement 2009-006 "Unacceptable Preconditioning of Safety-Related Pressure Switches During Required Surveillance Testing at Monticello," issued by the NRC in September 2009, the inspectors identified that the Point Beach licensee's surveillance testing procedures for various SR pressure switches involved unacceptable preconditioning. In particular, the inspectors noted that during the MA-KW-ISP-SW-001A procedure, "Service Water Header A Pressure Switch Calibration," Revision 8, the pressure switches in question were initially subject to SW pressure. The basic testing methodology associated with these pressure switches was as follows: 1) isolate the pressure switch to be tested; 2) uncap the test connection; 3) connect the test equipment to the test connection; 4) increase the pressure until the pressure switch resets and record the reset test data; 5) bleed off the pressure until the pressure switch trips and record the as-found trip setpoint; and 6) remove the test equipment and restore the pressure switch to operation. This testing methodology caused the pressure switch and associated contacts to change state when the system pressure was relieved in Step 2; again when pressure was applied to reset the pressure switch in Step 4; then a third time when the pressure was bled off to obtain the as-found trip setpoint in Step 5. This testing methodology subjected the pressure switch to a maximum pressure differential (operating pressure to atmospheric) and fully cycled the pressure switch prior to obtaining the as-found trip setpoint data. This particular surveillance was performed on the SW header A and B pressure switches on July 14, 2010. The inspectors review also identified that no engineering justification had been performed by the licensee to show that testing of these pressure switches in the above manner did not impact the accuracy and reliability of the SR pressure switches.

The inspectors noted that the existing licensee pressure switch testing methodology ensured operability of the pressure switches subsequent to the performance of the applicable surveillance test, since the required as-left pressure switch setpoint was adjusted (if required) prior to the completion of the surveillance. The inspectors determined that the existing testing methodology potentially masked existing conditions; such as sticking contacts, mechanical binding, and setpoint drift; and could mask existing operability concerns because the pressure switch was fully cycled prior to obtaining the as-found trip setpoint data.

The inspectors questioned the licensee about their testing method and found that the licensee had external operating experience related to the testing method in question. The licensee had determined in March 2010 that Kewaunee's testing method was similar to the incorrect one used at Monticello and that Kewaunee did not have an evaluation finding the method to be acceptable. The licensee created an operating experience CA in April 2010 to perform an evaluation showing that the existing methods would not be changed and that the preconditioning was acceptable. However, the inspectors found that the evaluation was still not completed and the completion date had been extended multiple times.

Inspection Manual Chapter (IMC) 9900 states, in part, that unacceptable preconditioning is defined as the alteration, variation, manipulation, or adjustment of the physical condition of an SSC before or during TS surveillance or American Society of Mechanical Engineers (ASME) code testing that will alter one or more of SSCs operational parameters, which results in acceptable test results. Such changes could mask the actual as-found condition of the SSC and possibly result in an inability to verify the operability of the SSC. In addition, unacceptable preconditioning could make it difficult to determine whether the SSC would perform its intended function during an event in which the SSC might be needed. Therefore, the inspectors concluded that since the licensee had not performed an evaluation that showed that the preconditioning of the pressure switches was acceptable, the licensee's surveillance testing methodology that cycled a pressure switch prior to obtaining as-found trip setpoint data constituted unacceptable preconditioning of the pressure switch.

Further investigation by the inspectors revealed that additional pressure switches, which were relied upon to initiate TS-related protective functions in the areas of shield building ventilation, containment vacuum breaker opening, low forebay level circulating water pump trips, and auxiliary feedwater pump low suction and discharge pressure trips, were tested in a manner similar to that described above with no engineering justification.

Analysis: The inspectors determined that the failure to develop and implement an adequate surveillance test procedure to accurately assess the as-found trip setpoint for the pressure switches associated with the turbine building SW isolation function and other SR functions constituted a performance deficiency warranting significance evaluation.

The finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated December 24, 2009, because it was associated with the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affected the cornerstone attribute of equipment performance.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Tables 3b and 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The inspectors answered "no" to the Mitigating Systems questions and screened the finding as having very low significance (Green).

This finding has a cross-cutting aspect in the area of problem identification and resolution, Operating Experience, because the licensee did not evaluate and communicate external operating experience to internal stakeholders in a timely manner. Specifically, when it was identified on March 30, 2010, that Kewaunee had similar testing methodologies, a CR should have been generated communicating that no evaluation existed for the current method of testing. The licensee created an operating experience CA item in April 2010 that was not completed until after the NRC questioned the issue in November 2010 (P.2(a)).

Enforcement: Title 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 of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Contrary to this, on July 14, 2010, the licensee failed to prescribe a documented instruction that was appropriate to the circumstances for the testing of the pressure switches for the turbine building service water isolation function, an activity affecting quality. Specifically, procedure MA-KW-ISP-SW-001A incorporated a testing methodology that inappropriately manipulated the pressure switches prior to obtaining as-found data, thus resulting in unacceptable preconditioning. Because this violation was of very low safety significance and was entered into the licensee's CAP as CR401813, it is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000305/2010005-02; Unacceptable Preconditioning of Safety-Related Pressure Switches)

The licensee performed an apparent cause evaluation, modified procedures where the physical configuration permitted preventing the preconditioning, and completed the evaluation which determined that the method did not produce unacceptable preconditioning.

.2 Operability Evaluations

a. Inspection Scope

The inspectors also reviewed the following issues:

- OD397; Perform Prompt Operability Determination For Increase in DG B Start Time;
- CR398674; Question Regarding Adequacy of 50.59 Products for Design Change Request (DCR) 3048;
- CR399711; Incorrect Lubricant Added to Turbine Outboard Bearing on Turbine-Driven AFW Pump;
- CR381722; Turbine Building (TB) Fan Coil Unit (FCU) 1A Cooling Coil Leak; and
- OD239, Dispersion Assumptions Used in Design Basis Dose Analysis Cannot Be Validated.

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 TSs 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 reviewed a sampling of CA documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted five samples as defined in IP 71111.15-05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications:

- TMOD 2010-02: EDG fuel oil storage level indicator; and
- control of jumpers during auxiliary feedwater pump testing.

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the USAR, and the TSs, 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. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two temporary modification samples as defined in IP 71111.18-05.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- four-way dual acting air solenoid valve replacement for valve SW-4A;
- turbine basement FCU 1B after maintenance;
- EDG A after maintenance;
- test equipment installation and removal for main feedwater regulating valve (MFWRV) FW 7A;
- EDG A air compressor belt replacement;
- screenhouse exhaust fan B preventative maintenance;
- turbine building FCU C and D piping replacement;
- containment cooling water (CCW) pump B; and
- auxiliary feedwater pump 1A following preventive maintenance.

These activities were selected based upon the SSC'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 TSs, 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 post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with the importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted nine post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 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 the intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- train B RHR and valve test conducted under SP-34-099B in September 2010 (inservice test).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and 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 frequency 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 for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, ASME code, and reference values were consistent with the system design basis;
- 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 SR 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 CAP.

Also, additional activities were performed during the review of the train B RHR and valve test that were associated with TI 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems." These activities are described in Section 1R22.4 of this report.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted one inservice testing sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Closure of Safety Injection Minimum Flow Recirculation Valves

Introduction: A finding of very low safety-significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for multiple inadequate procedures, which directed closing the common train SI minimum flow recirculation line valves. Specifically, station procedures directed operators to close the SI pump minimum flow recirculation valves in order to complete valve timing tests, and to engage an interlock which allowed closure of the containment sump recirculation valves for testing. However, the procedures and licensed operators failed to recognize that closure of either of the minimum flow recirculation valves affected the operability and availability of both SI pumps for certain design basis accidents because the minimum flow recirculation path was isolated.

Description: On August 31, the inspectors reviewed and observed the performance of procedure SP-34-099B, "Train B RHR Pump and Valve Test." During the performance of the procedure, the inspectors noted that the caution statement prior to step 6.35 stated the following, "Starting a Safety Injection Pump with SI-208 or SI-209 closed may damage the pump." The inspectors noted that from step 6.35 when minimum flow recirculation valve SI-208 was closed to step 6.41 when the valve was reopened a total of 79 minutes had elapsed. The inspectors observed that no dedicated operator was staged and that the crew had not discussed the possibility of reopening either SI-208 or SI-209 in the event an SI signal occurred during the evolution. When questioned, operations staff stated that they did not believe the closure of either SI-208 or SI-209 affected the operability or availability of the SI pumps A and B.

The inspectors reviewed drawings, procedures, and design documentation associated with the SI system. The inspectors noted that the SI pumps A and B were 11-stage, horizontal centrifugal high head pumps with a design shutoff head of approximately 2200 pounds per square inch gauge (psig). The minimum flow recirculation line was shared for both SI pumps. This common line contained two isolation valves in series, SI-208 and SI-209, to support minimum flow recirculation operation of the SI pumps to the refueling water storage tank. The inservice testing basis valve data sheet for the SI-208 and SI-209 valves also stated, in part, that the valves performed a passive safety function in the open position and were required to be open to prevent damage to the SI pumps as a result of operating in low flow or dead-headed conditions. In addition, the inspectors noted that NRC NCV 05000305/2006007-04 documented a Green finding for the licensee's failure to properly evaluate the minimum flow recirculation requirements of the high head SI pump. The subsequent CR033997 and associated OD, OPR-150, documented that for certain small break loss of coolant accidents, small

main steam line breaks, and Appendix R fire scenarios, the SI pumps would need the minimum flow recirculation line to ensure pump operability due to the low flow and high reactor coolant system pressures present during those select scenarios. However, the licensee's evaluation of the finding in 2006 was narrowly focused on the adequacy of the current value of 47 gpm recirculation flow instead of a vendor-recommended 70 gpm. The inspectors also determined that the licensee's response to NRC Bulletin 88-04, "Potential Residual Heat Removal Pump Loss," although scant with detail, acknowledged that for a small number of accident scenarios the SI pumps operated on minimum flow recirculation. Finally, the inspectors noted that based on available industry operating history and data, high head SI pumps of this size cannot support operation for greater than approximately one minute, without an adequate minimum flow recirculation path to ensure the pump remains within operating temperature limits.

The inspectors presented the data for the inoperability of the SI pumps to licensee operations and engineering staff, who acknowledged that the minimum flow recirculation lines were needed for a certain, small number of design bases accidents and initiated CR391458. As an immediate action, an operations night order was issued to prohibit the closure of the SI-208 and SI-209 valves at power, since closure of either valve resulted in inoperability of both SI pumps and was a violation of TS 3.3.b.1.A, which required two trains of SI to be operable while the reactor is critical. The licensee also placed the following procedures that directed closure of the valves on administrative hold:

- SP-34-099A, "Train A Residual Heat Removal Pump and Valve Test";
- PMP-33-06, "Containment Sump Motor Operated Valve Electrical Maintenance";
- SP-34-099B, "Train B Residual Heat Removal Pump and Valve Test";
- GOP-103, "Startup from Residual Heat Removal to Hot Shutdown – Mode 3";
- MOP-RHR-001A, "Residual Heat Removal Pump A Maintenance at Power";
- MOP-RHR-001B, "Residual Heat Removal Pump B Maintenance at Power";
- NOP-RHR-001, "Residual Heat Removal System Operation";
- ORT-SI-001A, "Train A Containment Sump B Water Level Verification";
- ORT-SI-001B, "Train B Containment Sump B Water Level Verification";
- ORT-SI-002A, "Train A Containment Sump Isolation Valves Cycling and Draining"; and
- ORT-SI-002B, "Train B Containment Sump Isolation Valves Cycling and Draining."

During the initial part of the licensee's investigation for the root cause evaluation, the licensee determined that the two minimum flow recirculation valves were historically closed to enable an interlock that allows the containment sump B recirculation isolation valves SI-350A, SI-350B, SI-351A, and SI-351B to be closed for testing or maintenance. As a remedial CA, the licensee performed an engineering technical evaluation to evaluate the use of a jumper to bypass the interlock in order to cycle the containment sump B recirculation isolation valves.

The licensee also determined during their initial investigation that there were multiple opportunities to address this issue in the past history of the plant based on NRC generic communications, industry operating experience, and internal operating experience. However, the prior evaluations either incorrectly concluded that there was low risk, or did not fully evaluate the design or response of the system for the full range of design basis accidents. The licensee did discover that the first available evaluation of this issue, in response to NRC Information Notice 85-94, "Potential for Loss of Minimum Flow Paths

Leading to ECCS Pump Damage During a LOCA," did recognize that closure of either of the valves rendered both trains inoperable; however, the recommended CAs to stop cycling the valves were not implemented.

Analysis: The inspectors determined that the licensee's failure to ensure that procedures contained all the necessary prescribed actions to ensure the operability and availability of the SI pumps was contrary to the requirements of 10 CFR Part 50, Appendix B, Criterion V, and was a performance deficiency warranting a significance evaluation.

The finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated December 24, 2009, because it was associated with the Mitigating System Cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to ensure that procedures implemented during power operations ensured the operability of both trains of safety injection.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Tables 3b and 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The inspectors answered "yes" to the Mitigating Systems question that confirmed the finding represented a loss of system safety function.

The finding was determined to require additional significance review because the finding potentially resulted in the loss of high pressure injection and recirculation, and the loss of feed and bleed safety functions under scenarios where an SI signal was generated and reactor coolant system (RCS) pressure was above the shutoff head of the SI pumps. The Region III Senior Reactor Analyst (SRA) performed an SDP Phase 2 analysis.

Using the Risk-Informed Inspection Notebook [Notebook] for Kewaunee (i.e., the SDP Phase 2 Notebook), the performance deficiency was evaluated to affect the SI pumps. The SI pumps are credited for high pressure injection and recirculation safety functions. The exposure time was less than three days. For findings on the SI pumps, Table 2 of the Notebook identified that all initiators, except loss of service water, large break loss of coolant accident, and anticipated transient without scrams scenarios, should be evaluated. However, the finding only affected those events where the SI pumps may start due to a SI signal and attempt to run before the RCS is depressurized enough to allow flow. These events evaluated from the Phase 2 Notebook were:

- small break loss of coolant accident (SLOCA);
- stuck open pressurizer power-operated relief valve;
- main steam line break;
- steam generator tube rupture (SGTR).

The Phase 2 result was White. The SRA performed an SDP Phase 3 analysis.

The Kewaunee SPAR Model Version 8.15 and SAPHIRE 8 Version 8.0.7.13 was used to perform the analysis. Modifications were made to the base model to include credit for

charging pumps during SGTR events and to correct a modeling error for operator action during SGTR scenarios. A change set was created representing common cause failure to run of the SI pumps. All of the event trees except large and medium loss of coolant scenarios were solved since rapid RCS depressurization during these events did not impact the SI pumps. The total exposure time assumed was 29 hours based on the inspectors' review of past records detailing the amount of time that SI-208 or SI-209 was closed during the year.

The resultant delta core damage frequency (CDF) was less than 1E-6 and delta large early release frequency (LERF) was less than 1E-7, which represents a Green finding. The dominant scenario involved a small break LOCA with operator failure to perform a rapid cooldown.

The finding has a cross-cutting aspect in the areas of human performance, Decision Making, because the licensee failed to use conservative assumptions and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. Specifically, although the licensee procedures cautioned that starting an SI pump following the closure of a minimum flow recirculation valve would result in damage to the pump, the licensee staff failed to use conservative decision-making to question the adequacy of the prescribed procedure actions (H.1(b)).

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented procedures of a type appropriate to the circumstances.

Contrary to this, prior to September 8, 2010, the licensee inappropriately closed the SI minimum flow recirculation lines as prescribed in 11 procedures performed during power operations, activities affecting quality, and failed to specify all the necessary actions to ensure the operability and availability of the SI pumps during the performance of those procedures. Specifically, the licensee failed to recognize that the closure of either of the minimum flow recirculation line valves at power in procedures PMP-33-06, SP-34-099A, SP-34-099B, GOP-103, MOP-RHR-001A, MOP-RHR-001B, NOP-RHR-001, ORT-SI-001A, ORT-SI-001B, ORT-SI-002A, and ORT-SI-002B, resulted in the inoperability of both SI pumps. Because this violation was of a very low safety-significance and because it was entered into the licensee's CAP (as CR391458), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000305/2010005-03; Inappropriate Isolation of the Safety Injection Pump Minimum Flow Recirculation Lines)

The licensee performed a remedial CA to issue a night order to licensed operators to prohibit the closure of the SI minimum flow recirculation valves. At the end of the inspection period, the licensee completed a root cause evaluation that determined processes used to assess operating experience impact on operability did not contain adequate guidance to drive a formal operability assessment against licensing basis requirements. In addition, the root cause evaluation recommended several CAs to prevent occurrence.

.2 Failure to Follow Red Channel Instrument Test Procedure

a. Inspection Scope

The inspectors reviewed the test results for the September 2010 performance of the Channel 1 (Red) Instrument Channel Test conducted under SP-47-316A to determine whether risk-significant systems and equipment were capable of performing the intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements. The inspectors reviewed procedures and associated records to determine the following:

- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and 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 frequency 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;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- 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 CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted one routine testing sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Failure to Follow Red Channel Instrument Test Procedure

Introduction: A finding of very low safety-significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was self-revealed when a nuclear control operator (NCO) failed to perform a procedure step, which resulted in the MFWRV, FW-7A, partially closing while the reactor was at full power. Specifically, SP-47-316A, “Channel 1 (Red) Instrument Channel Test Channel Operational Test,” step 6.11.2 directed the NCO to place the FW-7A in manual to preclude valve movement during a simulated portion of the test; however, the NCO marked that step "not applicable," and subsequently did not perform that step.

Description: Surveillance procedure SP-47-316A tested the channel 1 (red) instrumentation for the reactor protection system (RPS) and involved coordination between instrumentation and control (I&C) technicians and the NCO. Step 6.11.2 directed the NCO to place the FW-7A control switch to manual in the control room, to preclude actual valve operator movement in the field during the I&C technicians simulated portions of the test. Step 6.11.3 allowed steps 6.11.4 through step 6.11.6 to be marked "not applicable," and, therefore, not performed under certain conditions. The NCO recollected that the white channel for steam and feed flow were selected, which led him to a faulty mental model that since the white channel was selected, he would not have to take the MFWRV to manual because the red channel was being tested. Consequently, the NCO marked step 6.11.2 "not applicable," and continued on with the next procedure step. However, the NCO failed to remember that for steam generator level, the red channel was always the controlling channel.

Later in the procedure, when the I&C technicians injected a test signal into the RPS circuitry, the FW-7A began to close, which, in turn, caused the steam generator A levels to decrease. Before a significant secondary side transient occurred, the NCO realized the valve was closing because FW-7A was still in automatic and placed the control switch in manual, which restored steam generator A water levels. Without operator action, the transient would have resulted in a reactor trip on low steam generator water level.

Further review of the incident by the licensee revealed that the NCO also did not follow the requirement of procedure AD-AA-102, “Procedure Use and Adherence,” that required the operator to obtain concurrence from his supervision prior to marking a non-conditional step "not applicable." The NCO had not made his assumptions known to the rest of the operations crew prior to the failure to perform step 6.11.2 as written. The licensee’s causal evaluation also identified that the pre-job brief focused on the I&C portions of the test and did not include the critical steps of the operations portion of the procedure. As an immediate action, all RPS instrumentation channel surveillance pre-job briefs were modified to include operations critical steps.

Analysis: The inspectors determined that the licensee’s failure to implement procedure steps as prescribed in a TS surveillance test was contrary to the requirements of 10 CFR Part 50, Appendix B, Criterion V, and was a performance deficiency warranting a significance evaluation.

The finding was determined to be more than minor in accordance with IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening,” dated December 24, 2009, because it was associated with the Initiating Events Cornerstone attribute of human performance and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to follow the procedure resulted in a secondary-side plant transient.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” Tables 3b and 4a for the Initiating Events Cornerstone, dated January 10, 2008. The inspectors answered "no" to the Initiating Events Cornerstone Transient Initiator question and screened the finding as having very low significance (Green).

The finding has a cross-cutting aspect in the area of human performance, Work Practices, because the personnel work practices did not support human performance. Specifically, licensee personnel failed to follow procedures (H.4(b)).

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings, requires, in part, that activities affecting quality be prescribed and accomplished by documented procedures of a type appropriate to the circumstances.

Contrary to this, on September 27, 2010, during the performance of procedure SP-47-316A, “Channel 1 (Red) Instrument Channel Test,” an activity affecting quality, the NCO failed to perform step 6.11.2 as prescribed. Specifically, the NCO marked step 6.11.2 "not applicable," vice performing the step as written, which directed the NCO to place the FW-7A MFWRV in manual. Consequently, when an I&C technician introduced a test signal to the circuit at step 6.11.8, FW-7A began to close causing feedwater flow to steam generator A to decrease. As a result of the lowering steam generator level, the NCO recognized the error, placed the FW-7A flow control switch in manual, and restored steam generator level. Because this violation was of a very low safety-significance and because it was entered into the licensee’s CAP (as CR396649 and CR405809), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000305/2010005-04; Failure to Follow Red Channel Instrument Test Procedure)

The licensee performed an apparent cause evaluation (ACE) that determined the apparent cause was a human performance issue in that the NCO had a faulty mindset about which channel for steam generator level was controlling. The licensee subsequently implemented several corrective actions that included: remediation of the NCO prior to being placed back onshift; generation of a standing order to require operations management review of all steps marked "not applicable" in any procedure being performed; operations management reinforcement with staff of the requirements for the use of not applicable in procedure steps and for placekeeping; and initiation of a request for training for additional licensed operator training on the interactions between the inputs to steam generator level control and feedwater regulating valve operation.

.3 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 the intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- turbine-driven AFW pump (inservice test);
- motor-driven AFW pump B (inservice test); and
- auxiliary building zone special ventilation Train A (routine test).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and 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 frequency 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 for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, ASME code, and reference values were consistent with the system design basis;
- 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 SR 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 CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted one routine surveillance testing sample, and two inservice testing samples as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

.4 Surveillance Testing Associated With TI 2515/177, “Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems.”

a. Inspection Scope

When reviewing the train B RHR and valve test conducted under SP-34-099B, the inspectors verified that the system procedures were acceptable for (1) testing the

RHR system with power operation, shutdown operation, maintenance, and subject system modifications, (2) void determination and elimination methods, and (3) post-event evaluation.

The inspectors reviewed procedures used for conducting surveillances and determination of void volumes to ensure that the void criteria was satisfied and will be reasonably ensured to be satisfied until the next scheduled void surveillance (TI 2515/177, Section 04.03.a). Also, the inspectors reviewed procedures used for filling and venting following conditions which may have introduced voids into the subject systems to verify that the procedures acceptably addressed testing for such voids and provided acceptable processes for their reduction or elimination (TI 2515/177, Section 04.03.b). Specifically, the inspectors verified that:

- gas intrusion prevention, refill, venting, monitoring, trending, evaluation, and void correction activities were acceptably controlled by approved operating procedures (TI 2515/177, Section 04.03.c.1);
- procedure*s* ensured the system did not contain voids that may jeopardize operability (TI 2515/177, Section 04.03.c.2);
- procedures established that void criteria were satisfied and will be reasonably ensured to be satisfied until the next scheduled void surveillance (TI 2515/177, Section 04.03.c.3);
- the licensee entered changes into the CAP as needed to ensure acceptable response to issues. In addition, the inspectors confirmed that a clear schedule for completion is included for CAP entries that have not been completed (TI 2515/177, Section 04.03.c.5); and
- procedures included independent verification that critical steps were completed (TI 2515/177, Section 04.03.c.6).

The inspectors verified the following with respect to surveillance and void detection:

- specified surveillance frequencies were consistent with TS surveillance requirements (TI 2515/177, Section 04.03.d.1);
- surveillance frequencies were stated or, when conducted more often than required by TSs, the process for their determination was described (TI 2515/177, Section 04.03.d.2);
- surveillances methods were acceptably established to achieve the needed accuracy (TI 2515/177, Section 04.03.d.3);
- surveillance procedures included up-to-date acceptance criteria (TI 2515/177, Section 04.03.d.4);
- procedures included effective follow-up actions when acceptance criteria are exceeded or when trending indicates that criteria may be approached before the next scheduled surveillance (TI 2515/177, Section 04.03.d.5);
- measured void volume uncertainty was considered when comparing test data to acceptance criteria (TI2515/177, Section 04.03.d.6);
- venting procedures and practices utilized criteria such as adequate venting durations and observing a steady stream of water (TI 2515/177, Section 04.03.d.7);
- an effective sequencing of void removal steps was followed to ensure that gas does not move into previously filled system volumes (TI 2515/177, Section 04.03.d.8);

- qualitative void assessment methods included expectations that the void will be significantly less than allowed by acceptance criteria (TI 2515/177, Section 04.03.d.9);
- venting results were trended periodically to confirm that the systems were sufficiently full of water and that the venting frequencies were adequate. The inspectors also verified that records on the quantity of gas at each location are maintained and trended as a means of preemptively identifying degrading gas accumulations (TI 2515/177, Section 04.03.d.10);
- surveillances were conducted at any location where a void may form, including high points, dead legs, and locations under closed valves in vertical pipes (TI 2515/177, Section 04.03.d.11);
- the licensee ensure that systems were not preconditioned by other procedures that may cause a system to be filled, such as by testing, prior to the void surveillance (TI 2515/177, Section 04.03.d.12); and
- procedures included gas sampling for unexpected void increases if the source of the void was unknown and sampling was needed to assist in determining the source (TI 2515/177, Section 04.03.d.13).

The inspectors verified the following with respect to filling and venting:

- revisions to fill and vent procedures to address new vents or different venting sequences were acceptably accomplished (TI 2515/177, Section 04.03.e.1); and
- fill and vent procedures provided instructions to modify restoration guidance to address changes in maintenance work scope or to reflect different boundaries from those assumed in the procedure (TI 2515/177, Section 04.03.e.2).

The inspectors verified the following with respect to void control:

- void removal methods were acceptably addressed by approved procedures (TI 2515/177, Section 04.03.f.1); and
- the licensee had reasonably ensured that the RHR pumps were free of damage following a gas-related event in which pump acceptance criteria were exceeded (TI 2515/177, Section 04.03.f.2).

Documents reviewed are listed in the Attachment to this report.

This inspection effort counts towards the completion of TI 2515/177, which will be closed in a later inspection report.

b. Findings

No findings were identified.

1EP2 Alert and Notification System Evaluation (71114.02)

.1 Alert and Notification System Evaluation

a. Inspection Scope

The inspectors reviewed documents and conducted discussions with Emergency Preparedness (EP) staff regarding the operation, maintenance, and periodic testing of

the Alert and Notification System (ANS) in the Kewaunee Power Station's (KPS) plume pathway Emergency Planning Zone. The inspectors reviewed monthly trend reports and siren test failure records from June 2008 through November 2010. Information gathered during document reviews and interviews was used to determine whether the ANS equipment was maintained and tested in accordance with EP commitments and procedures. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one sample as defined in IP 71114.02-05.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)

.1 Emergency Response Organization Staffing and Augmentation System

a. Inspection Scope

The inspectors reviewed and discussed with plant EP staff the EP commitments and procedures that addressed the primary and alternate methods of initiating an Emergency Response Organization (ERO) activation to augment the onshift ERO, as well as the provisions for maintaining the plant's ERO emergency telephone book. The inspectors also reviewed reports and a sample of CAP records of unannounced off-hour augmentation tests, which were conducted from June 2008 through November 2010 to determine the adequacy of post-drill critiques and associated CAs. The inspectors also reviewed a sample of the EP training records for ERO personnel who were assigned to key and support positions to determine the status of their training as it related to their assigned ERO positions. Also, the inspectors conducted a walkdown of the technical support center to evaluate material condition and readiness of the facility. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one sample as defined in IP 71114.03-05.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, emergency action level (EAL) and emergency plan changes were implemented based on the licensee's determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in effectiveness of the plan, and that the revised plan as changed continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. Revisions to the EALs and emergency plan reviewed by the inspectors included Kewaunee Power Station Emergency Plan, Revision 34; and Kewaunee Power Station Emergency Action Level Technical Basis Document, Revision 6. The inspectors conducted a sampling

review of the emergency plan changes and a review of the EAL changes to evaluate for potential decreases in effectiveness of the plan. However, this review does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. Documents reviewed are listed in the Attachment to this report.

This emergency action level and emergency plan changes inspection constituted one sample as defined in IP 71114.04-05.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses (71114.05)

.1 Correction of Emergency Preparedness Weaknesses

a. Inspection Scope

The inspectors reviewed a sample of nuclear oversight staff's 2009 and 2010 annual audits of the KPS EP program to determine that these independent assessments met the requirements of 10 CFR 50.54(t). The inspectors also reviewed critique reports and samples of CAP records associated with the station's full scale exercises, as well as various EP drills conducted in 2008, 2009, and 2010, in order to determine that the licensee fulfilled its drill commitments and to evaluate the licensee's efforts to identify, track, and resolve concerns identified during these activities. Additionally, the inspectors reviewed a sample of EP items and CAs related to the facility's EP program and activities to determine whether CAs were completed in accordance with the site's CAP. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one sample as defined in IP 71114.05-05.

b. Findings

Unresolved Item (URI) 2010005-05, Changes to Reactor Building Ventilation Flow Rates Potentially Decreases the Effectiveness of the Plan Without Prior NRC Approval

Introduction: The inspectors reviewed CRs that documented changes implemented in 1980 to the reactor building ventilation flow rates. These changes impacted the calibrations of radiation detection instruments that were used in determining entry conditions for EALs at KPS and may potentially decrease the effectiveness of the licensee's emergency plan.

Description: KPS implemented DCR No. 947 in 1980. This DCR reduced the containment purge fan flow rate from 33,000 cubic feet per minute (cfm) to 26,000 cfm. This change in flow rate was not captured in licensee engineering drawings or in the licensee's off-site dose calculation manual (ODCM). Not having the correct containment purge fan flow rate universally documented in plant procedures or engineering documents led to the miscalibration of the containment gas (R12) and containment ventilation (R21) radiation monitors. These radiation monitors are used to help classify plant emergency conditions for the specific EAL schemes (i.e., RG1.1, RG1.2, RS1.1, RS1.2, RA1.1, and RU1.1). The result of this error was that the station could potentially

classify emergencies inaccurately. For example, if the plant had entered the General Emergency EALs (RG1.1 and RG1.2) based on these radiation monitor outputs, the error could result in an inaccurate protective action recommendation.

Pending further review and verification by NRC staff of the impact of the miscalibration of the radiation monitors (R12 and R21) on KPS' EAL scheme, including a determination of a decrease in effectiveness of the emergency plan, this issue was considered a URI (URI 05000305/2010005-05, Changes to Reactor Building Ventilation Flow Rates Potentially Decreases the Effectiveness of the Plan Without Prior NRC Approval).

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

This inspection constituted one complete sample as defined in IP 71124.01-05 and supplements NRC inspection activities documented in NRC Inspection Report 05000305/2010002.

.1 Instructions to Workers (02.03)

a. Inspection Scope

For work activities that could suddenly and severely increase radiological conditions, the inspectors assessed the licensee's means to inform workers of changes that could significantly impact their occupational dose. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

This inspection constituted one complete sample as defined in IP 71124.07-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating reports and the results of any licensee assessments since the last inspection to verify that the radiological environmental monitoring program (REMP) was implemented in accordance with the TSs and ODCM. This review included report changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, inter-laboratory comparison program, and analysis of data.

The inspectors reviewed the ODCM to identify locations of environmental monitoring stations.

The inspectors reviewed the USAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

The inspectors reviewed quality assurance audit results of the program to assist in choosing inspection "smart samples" and audits and technical evaluations performed on the vendor laboratory program.

The inspectors reviewed the annual effluent release report and the 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," report, to determine if the licensee was sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.2 Site Inspection (02.02)

a. Inspection Scope

The inspectors walked down select air sampling stations and thermoluminescent dosimeter (TLD) monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition. Consistent with smart sampling, the air sampling stations were selected based on the locations with the highest X/Q, D/Q wind sectors, and TLDs were selected based on the most risk-significant locations (e.g., those that have the highest potential for public dose impact).

For the air samplers and TLDs selected, the inspectors reviewed the calibration and maintenance records to verify that they demonstrated adequate operability of these components.

The inspectors performed an assessment of whether the licensee had initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from different environmental media (e.g., ground and surface water, milk, vegetation, sediment, and soil) as available to verify that environmental sampling was representative of the release pathways as specified in the ODCM and that sampling techniques were in accordance with procedures.

Based on direct observation and review of records, the inspectors assessed whether the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the USAR, NRC Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments in the control room and, if applicable, at the tower were operable.

The inspectors evaluated whether missed and/or anomalous environmental samples were identified and reported in the annual environmental monitoring report. The inspectors selected events that involved a missed sample, inoperable sampler,

lost TLD, or anomalous measurement to verify that the licensee had identified the cause and had implemented CAs. The inspectors reviewed the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection) and reviewed the associated radioactive effluent release data that was the source of the released material.

Inspectors selected SSCs that involved or could reasonably involve licensed material for which there was a credible mechanism for licensed material to reach ground water, and assessed whether the licensee had implemented a sampling and monitoring program sufficient to detect leakage of these SSCs to groundwater.

The inspectors evaluated whether records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection were retained in a retrievable manner.

The inspectors reviewed any significant changes made by the licensee to the ODCM as the result of changes to the land census, long-term meteorological conditions (3-year average), or modifications to the sampler stations since the last inspection. They reviewed technical justifications for any changed sampling locations to verify that the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors assessed whether the appropriate detection sensitivities with respect to TSs/ODCM were used for counting samples (i.e., the samples meet the TSs/ODCM required lower limits of detection). The inspectors reviewed quality control charts for maintaining radiation measurement instrument status and actions taken for degrading detector performance. The licensee used a vendor laboratory to analyze the REMP samples so the inspectors reviewed the results of the vendor's quality control program, including the interlaboratory comparison, to assess the adequacy of the vendor's program.

The inspectors reviewed the results of the licensee's interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by the licensee. The inspectors assessed whether the interlaboratory comparison test included the media/nuclide mix appropriate for the facility. If applicable, the inspectors reviewed the licensee's determination of any bias to the data and the overall effect on the REMP. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

.3 Identification and Resolution of Problems (02.03)

a. Inspection Scope

The inspectors assessed whether problems associated with the REMP were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. Additionally, they assessed the appropriateness of the CAs for a selected sample of problems documented by the licensee that involved the REMP. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures PI for July 2009 through September 2010. To determine the accuracy of the PI data reported, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73" definitions and guidance, were used. The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance WOs, issue reports, and event reports for July 2009 through September 2010 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. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one safety system functional failures sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 RCS Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Specific Activity PI for July 2009 through September 2010. The inspectors used PI definitions and guidance contained in NEI 99-02 to determine the accuracy of the PI data reported. The inspectors reviewed the licensee's RCS chemistry samples, TS requirements, issue reports, event reports, and NRC Integrated Inspection Reports for July 2009 through September 2010 to determine if indicator results were accurately reported. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RCS specific activity sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences PI for July 2009 through September 2010. The inspectors used PI definitions and guidance contained in NEI 99-02 to determine the accuracy of the PI data reported. The inspectors reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred for selected dates from July 2009 and September 2010 to determine if indicator results were accurately reported. The inspectors also conducted walk downs of numerous locked high and very high radiation area (VHRA) entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one occupational radiological occurrences sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.4 Radiological Effluent Technical Specification/ODCM Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent TS/ODCM Radiological Effluent Occurrences PI for July 2009 through September 2010. The inspectors used PI definitions and guidance contained in NEI 99-02 to determine the accuracy of the PI data reported. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences, such as unmonitored, uncontrolled, or improperly calculated effluent releases, that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates from July 2009 through September 2010 to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one Radiological Effluent Technical Specification/ODCM radiological effluent occurrences sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.5 Drill/Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise Performance PI for April 2009 through September 2010. To determine the accuracy of the PI data reported,

PI definitions and guidance contained in NEI 99-02 were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes, including procedural guidance on assessing opportunities for the PI, assessments of PI opportunities during predesignated control room simulator training sessions, and performance during other drills. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one drill/exercise performance sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.6 Emergency Response Organization (ERO) Drill Participation

a. Inspection Scope

The inspectors sampled licensee submittals for the ERO Drill Participation PI for April 2009 through September 2010. To determine the accuracy of the PI data reported, PI definitions and guidance contained in NEI 99-02 were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI Guidance. Specifically, the inspectors reviewed licensee records and processes, including procedural guidance on assessing opportunities for the PI and revisions of the roster of personnel assigned to key emergency response organization positions. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one ERO drill participation sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.7 Alert and Notification System

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System PI for April 2009 through September 2010. To determine the accuracy of the PI data reported, PI definitions and guidance contained in NEI 99-02 were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes, including procedural guidance on assessing opportunities for the PI and results of periodic ANS operability tests. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one alert and notification system sample as defined in IP 71151-05.

b. Findings

No findings 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. Inspection 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 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 CAs were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are listed in the Attachment to 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 in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection 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 CR 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.

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection 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 period of April 2010 through November 2010, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, system health reports, quality assurance audit/surveillance reports, and self-assessment reports. The inspectors compared 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.

During the review, the inspectors identified an increased trend in the number of department clock resets due to the failure to follow procedures. Specifically, as of November 2010, the last 10 department clock resets were due to failure to follow procedures. Some specific examples are discussed in Section 1R22.2 and Section 4OA7 of this report. The licensee had also identified this human performance trend and the inspectors will be reviewing the effectiveness of corrective actions during future inspections.

In addition, during routine plant status tours this inspection period, the inspectors noticed a decreased number of status indicating lights not lit for certain SR 4160-Volt breakers, 480-Volt breakers, and dedicated shutdown panel fuse light indications in the field. This was previously identified as an adverse trend in NRC Inspection Report 05000305/2010003, Section 4OA2.3, and the inspectors have concluded that the licensee's CAs were effective. Documents reviewed are listed in the Attachment to this report.

This review constituted one semi-annual trend inspection sample as defined in IP 71152-05.

b. Findings

No findings were identified.

.4 Selected Issue Follow-Up Inspection: Service Water Valves SW-1306(A)(B) Perturbations Due To Electrical Disturbances

a. Inspection Scope

During a review of items entered in the licensee's CAP, the inspectors recognized a CA item documenting a trend of SW valves SW-1306(A)(B) failing open to the SR position during grid disturbances or lightning strikes. The inspectors recalled similar issues occurring during the 2003 to 2004 timeframe with the same SR SW valves. The inspectors reviewed the appropriateness of the licensee's previous CAs and

planned CAs to address this recurring issue. Documents reviewed are listed in the Attachment to this report.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

No findings were identified.

.5 Selected Issue Follow-Up Inspection Associated with TI 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems": Rollup Assessment of Recent Condition Reports Written as a Result of Monthly Emergency Core Cooling Systems (ECCS) Ventings and Ultrasonic Tests (UTs)

a. Inspection Scope and Documentation

During a review of items entered in the licensee's CAP, the inspectors recognized a number of corrective action items documenting various issues associated with the monthly ECCS ventings and UTs. The inspectors ensured that each of the issues reviewed met the requirements of the licensee's corrective action program.

The inspectors verified that the selected CAP entries acceptably addressed the areas of concern associated with the scope of Generic Letter 2008-01," Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," (TI 2515/177, Section 04.01). Documents reviewed are listed in the Attachment to this report.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05. In addition, this inspection effort counts towards the completion of TI 2515/177, which will be closed in a later inspection report.

b. Findings

No findings were identified.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) License Event Report (LER) 05000305/2010-001-00: Safety Injection Pump Recirculation Line Isolation Results in Violation of Technical Specifications

On September 20, 2010, the licensee determined that both SI pumps had previously been rendered inoperable, contrary to TS requirements. This issue was identified by the inspectors and is documented as a finding in Section 1R22.1 of this report. The inspectors reviewed all the available information, including CRs and the past operability assessments associated with both SI pumps and the licensee's LER, and did not identify any new concerns or performance deficiencies. Documents reviewed are listed in the Attachment to this report.

Therefore, this LER is closed. This event follow-up review constituted one sample as defined in IP 71153-05.

4OA5 Other Activities

.1 (Open) NRC TI 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal and Containment Spray Systems (NRC Generic Letter 2008-01)"

As documented in Sections 1R04.3, 1R22.4 and 4OA2.5, the inspectors verified the acceptability of the described licensee's actions. This inspection effort counts towards the completion of TI 2515/177 which will be closed in a later inspection report.

.2 (Closed) URI 5000305/2009003–01: Emergency Diesel Generator Fuel Oil and Day Tank Vent Line Design

This URI was opened in the second quarter of 2009 and was partially closed in NRC Inspection Report 05000305/2010003, Section 4OA5.1. The inspectors' concerns associated with the seismic adequacy of the newly designed fuel oil vents installed in September 2009 remained open. Specifically, the fuel oil vents were still classified as Class III components, which, according to the licensee's licensing and design basis, were not directly related to reactor operation or containment. The modification to design the system for tornado missiles recognized that these components were vital to safe shutdown and isolation of the reactor, which was the definition of a Class I component. However, the seismic aspects associated with the component were not addressed as part of the design modification.

The inspectors reviewed licensee calculation 10Q4916-CAL-001, "Seismic Stress Analysis of Buried Diesel Generator Fuel Oil Piping Vent Lines," which concluded that the safe shutdown earthquake seismic stress of the fuel oil vent lines was less than the yield strength of the pipe; therefore, the vent line would remain intact. In addition, the inspectors reviewed USAR change request KPS-UCR-2010-066 that modified Table B-2-1 of the USAR to state that the diesel generator fuel oil vent lines were Class I*, a special classification for components meeting the seismic considerations of the Class I designation. The inspectors concluded the licensee's resolution of this issue was adequate and that the performance deficiency was not greater than minor. Therefore, this URI item is considered closed.

4OA6 Management Meetings

.1 Interim Exit Meetings

Interim exits were conducted for:

- the annual review of Emergency Action Level and emergency plan changes with the licensee's Emergency Preparedness Manager, Mr. B. Harris, via telephone on November 8, 2010;
- the results of radiological environmental monitoring program and performance indicator verification inspection with the Safety and Licensing Director, Mr. M. Wilson, on October 22, 2010;
- Emergency Preparedness and Health Physics inspection with Mr. S. Scace, on December 17, 2010;
- the results of the licensed operator requalification training program inspection with the Plant Manager, Mr. R. Simmons, on December 17, 2010; and

- the licensed operator requalification training annual operating test results with the Licensed Operator Requalification Training Supervisor, Mr. R. Hastings, on December 17, 2010.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Exit Meeting Summary

On January 4, 2011, the inspectors presented the inspection results to Mr. S. Scace and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

4OA7 Licensee-Identified Violations

The following violations of very low significance (Green) or Severity Level IV were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

.1 Inadequate Work Instructions Lead to Inoperable Service Water Train

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed and accomplished by documented instructions or procedures of a type appropriate to the circumstances.

Contrary to this, on September 8, 2010, the licensee identified that the instructions for replacing SV-33043, a four-way dual acting solenoid valve, were not appropriate to the circumstances, in that, the instructions did not ensure that the as-left solenoid position would maintain SW-4A, the train A turbine building SW header isolation valve closed, when air was restored to the solenoid. Specifically, procedure GIP-001, "Solenoid Valve/Coil Replacement," did not consider the fail as-is characteristic of the dual coil solenoid valve and the solenoid was inadvertently installed in the open state causing SW-4A to open when air was restored to the solenoid. The technician restoring the air identified that air was venting out of the solenoid and immediately notified the control room that SW-4A had opened. At the time of the valve repositioning, control power for SW-4A was tagged out which removed the valve position indication and the ability to close the valve from the control room. The licensee declared train A of SW inoperable until SW-4A was closed.

The inspectors answered "no" to the Mitigating Systems Cornerstone questions and screened the finding as having very low significance (Green) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a, dated January 10, 2008.

The licensee documented this violation in CR393971. The licensee performed a causal analysis and implemented CAs that included revision of the procedure, training of instrument and control technicians, as well as, operations personnel, on the operation of a 4-way dual acting solenoid valve and also added the lessons-learned into the pre-job brief database.

.2 Licensee Adds Incorrect Oil to the Turbine Driven Auxiliary Feedwater Pump

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed and accomplished by documented instructions or procedures of a type appropriate to the circumstances.

Contrary to this, on October 21, 2010, the licensee failed to follow procedure MA-KW-MPM-AFW-002, "Mechanical Maintenance of the Turbine Driven Auxiliary Feedwater Pump," and added incorrect lubricant to the turbine-driven auxiliary feedwater (TDAFW) pump outboard-end turbine bearing reservoir. Specifically, the licensee added lubricant designated for the governor gear box to the outboard-end turbine bearing reservoir. The licensee identified the mistake after the oil was already added and declared the TDAFW pump inoperable. Subsequent analysis of the reservoir oil determined that it retained its required properties and the TDAFW pump was determined to be operable even with the addition of the incorrect lubricant.

The inspectors answered "no" to the Mitigating Systems Cornerstone questions and screened the finding as having very low significance (Green) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a, dated January 10, 2008.

The licensee documented this violation in CR399711 and implemented CAs.

.3 Licensee Fails to Follow Procedure and Misses a Page of a Surveillance Procedure

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed and accomplished by documented procedures of a type appropriate to the circumstances.

Contrary to this, on November 17, 2010, the licensee failed to follow procedure SP-55-155A, "Engineered Safeguards Train A Logic Channel Test." Specifically, the licensee missed page 7 of the procedure which included steps 6.2 thru 6.4.2. The steps that were missed included: notification of the quality control department that the procedure was being performed; notification of the shift manager or unit supervisor that the plant was entering a 24-hour Limiting Condition of Operation; verification that the opposite train was operable; and deletion of a scan point from the plant process computer to prevent unnecessary data storage.

The inspectors answered "no" to the Mitigating Systems Cornerstone questions and screened the finding as having very low significance (Green) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a, dated January 10, 2008.

The licensee documented this violation in CR403997 and documented a human performance department clock reset for the maintenance department.

.4 Emergency Diesel Generator (EDG) Design Basis Not Incorporated into Operability Procedures

10 CFR Part 50, Appendix B, Criteria III, "Design Control," states, in part, that measures shall be established to assure that regulatory requirements and the design basis for

those components to which the appendix applies are correctly translated into procedures and instructions.

Contrary to this, on March 11, 2009, the licensee identified in CR326432 missing design and licensing basis information for the EDG start-up air system. The associated OD 273 concluded the air compressor must be functional to support EDG operability. This design basis information was not translated into procedures NOP-DGM-001A/B and ARP-47091C/F that provided guidance for operability of EDG A and B.

On November 3, 2010, CR402113 was written when two of the three fan belts on the EDG A air compressor were found broken. The CR concluded the air start compressor was non-functional, but the EDG A was declared operable based on the guidance in NOP-DGM-001A/B and ARP-47091C/F that the EDGs are operable when starting air header pressure is greater than 200 psig. Based on continued discussions with engineering, CR402113 was finally completed on November 16, 2010, and the licensee concluded that with the EDG A start-up air compressor non-functional, EDG A was inoperable.

The inspectors answered “no” to the Mitigating Systems Cornerstone questions and screened the finding as having very low significance (Green) in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” Table 4a, dated January 10, 2008.

The licensee evaluated this issue in CR402383 and CAs included changes to procedures NOP-DGM-001A/B and ARP-47091C/F to include functionality of the air start-up system and to review past operability of the EDGs based on EDG start-up air compressor functionality.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

A. Christensen, Emergency Preparedness Specialist, KPS
B. Harris, Emergency Preparedness Manager
B. Lehmbeck, ALARA Supervisor
C. Chovan, Outage and Planning Manager
C. Olson, Radiation Protection Supervisor
D. Asbel, Engineering Programs Manager
D. Emery, Supervisor Nuclear Training
D. Laing, Nuclear Training Manager
D. Lawrence, Operations Manager
D. Scherwinski, Senior License Operator Requalification Instructor
D. Shannon, Radiation Protection Specialist, KPS
J. Egdorf, Supervisor Nuclear Emergency Preparedness, KPS
J. Gadzala, Licensing Engineer
J. Hale, Radiation Protection Manager
M. Aulik, Engineering Design Manager
M. Wilson, Director, Safety and Licensing
R. Hastings, Supervisor Nuclear Training
R. Repshas, Licensing
R. Simmons, Plant Manager
S. Heironimus, Employee Concerns Manager
S. Johnson, Senior Instructor-Nuclear
S. Scace, Site Vice-President
T. Breene, Licensing Manager
T. Evans, Maintenance Manager

Nuclear Regulatory Commission

M. Kunowski, Chief, Division of Reactor Projects, Branch 5
K. Feintuch, Project Manager, Office of Nuclear Reactor Regulation
M. Bielby, Senior Operations Engineer
D. Reeser, Operations Engineer
R. Krsek, Kewaunee Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000305/2010005-01	NCV	Incorrect Containment Fan Coil Unit Acceptance Criteria (Section 1R07.1)
05000305/2010005-02	NCV	Unacceptable Preconditioning of Safety-Related Pressure Switches (Section 1R15.1)
05000305/2010005-03	NCV	Inappropriate Isolation of the Safety Injection Pump Minimum Flow Recirculation Lines (Section 1R22.1)
05000305/2010005-04	NCV	Failure to Follow Red Channel Instrument Test Procedure (Section 1R22.2)

Opened

05000305/2010005-05	URI	Changes to Reactor Building Ventilation Flow Rates Potentially Decreases the Effectiveness of the Plan Without Prior NRC Approval (Section 1EP5.1)

Closed

05000305/2010-001-00	LER	Safety Injection Pump Recirculation Line Isolation Results in Violation of Technical Specifications (Section 4OA3.1)
05000305/2009003-01	URI	Emergency Diesel Generator Fuel Oil and Day Tank Vent Line Design (Section 4OA5.2)

Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections of 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

- OP-KW-ORT-MISC-005; Cold Weather Operations; Revision 2

1R04 Equipment Alignment

- CR372348; Boric Acid Build Up On Stem Of RHR-1A; March 16, 2010
- CR374124; Stop Watch Start Timing For EDG B Exceeds Action Value And Limiting Value; March 29, 2010
- CR378573; DG B Did Not Stop When DG B Control Switch Was Placed To Stop; April 26, 2010
- CR382594; Traveling Water Screen 1A2 Maintenance Switch OFF; Revision 1
- CR386518; 1-6-3 BKR DG B Green Indicating Light Not Lit; July 3, 2010
- CR388822; Unintentional Valve Manipulation Of Valve SW-6804 Located In Battery Room B; July 22, 2010
- CR393202; Power Range N44 “Delay Time” Portion Of The Rate Circuit Incorrectly Adjusted; September 1, 2010
- CR398711; Emergency Diesel Generator 1B – Step Increase In Fast Start Time; October 11, 2010
- Drawing APM-213-9; Flow Diagram Diesel Generator Startup Air Compressor A & B And Fish Screen Air; Revision F
- Drawing E-233; Circuit Diagram DC Auxiliary And Emergency AC; Revision AU
- Drawing E-240; Circuit Diagram 4160V & 480V Power Sources; Revision AX
- Drawing M-1533; CC-From 6” Header To Reactor Vessel And From Line 10-AC-601R-11; Revision B
- Drawing M-1534; CC-To RHR Pumps Suction Line 10-AC-601R-5; Revision A/3750-1
- Drawing M-1536; CC-From RHR Pumps Discharge. Lines 8-AC-601R-7 2” Discharge Drains; Revision A/3750-1
- Drawing M-1537; CC-From RHR Pumps Discharge. Lines 8-AC-601R-8 2” Discharge Drains; Revision A/3750-1
- Drawing M-958-1; RHR-From Containment Sump B And Anchors Thru RHR Pump 1A To Anchor On Discharge Line; Revision C/3750-2
- Drawing M-958-2; RHR-From Containment Sump B And Anchors Thru RHR Pump 1A To Anchor On Discharge Line; Revision 8
- Drawing M-959-1; RHR-From Containment Sump B And Anchors Thru RHR Pump 1B To Anchor On Discharge Line; Revision C/3750-1
- Drawing M-959-2; RHR-From Containment Sump B And Anchors Thru RHR Pump 1B To Anchor On Discharge Line; Revision A
- Drawing M-960-1; RHR-From Anchors Thru RSDL HX 1A/1B To Pens 10, 48 And RHR-SFP Interconnections; Revision D
- Drawing M-960-2; RHR-From Anchors Thru RSDL HX 1A/1B To Pens 10, 48 And RHR-SFP Interconnections; Revision D/3750-1

- Drawing M-961-1; RHR-From Anchors Thru RSDL HX 1A/1B To Pens 10, 48 And RHR-SFP Interconnections; Revision B
- Drawing M-961-2; RHR-From Anchors Thru RSDL HX 1A/1B To Pens 10, 48 And RHR-SFP Interconnections; Revision A
- Drawing M-962-1; RHR-From Anchors Thru RSDL HX 1A/1B To Pens 10, 48 And RHR-SFP Interconnections; Revision A
- Drawing M-962-2; RHR-From Anchors Thru RSDL HX 1A/1B To Pens 10, 48 And RHR-SFP Interconnections; Revision A
- Drawing OPERM-202-1; Flow Diagram For Service Water System; Revision CL
- Drawing OPERM-202-2; Flow Diagram For Service Water System; Revision CW
- Drawing OPERM-202-3; Flow Diagram For Service Water System; Revision DE
- Drawing OPERM-220; Flow Diagram Fuel Oil Systems; Revision AT
- Drawing OPERXK-100-18; Flow Diagram RHR System; Revision BD
- Drawing OPRXK-100-18; Flow Diagram Residual Heat Removal System; Revision BD
- N-RHR-34-CL; Residual Heat Removal Pre-startup Checklist; May 20, 2010; Revision 41
- OPERM-205, Flow Diagram Feedwater System, Revision BH
- OPERM-606; Flow Diagram Air Cond. Cooling Water Piping, Revision BV
- OP-KW-NCL-DGM-001B; Diesel Generator B Pre-startup Checklist; Revision 4
- OP-KW-NCL-SW-001; Service Water System Pre-startup Checklist; Revision 0
- Residual Heat Removal System Health Report; November 15, 2010
- System Health Report For RHR; 1st Quarter 2010

1R05 Fire Protection

- CR331549; Fire Brigade Qualifications; April 20, 2009
- CR382434; KPS Fire Drill Held Yielding Satisfactory Results; May 26, 2010
- CR405691; Fire Brigade Flashlight Not Functioning; December 1, 2010
- Drawing E-2444; Fire Detection System Reactor And Auxiliary Building Mezzanine Floor; Revision N
- Fire Protection Plan Drawing Summary; AX-34, 35, 40/ Control Room HVAC Equipment And Former Records Storage Rooms; Revision December 19, 2007
- Fire Protection Plan Drawing Summary; PFP-17; AX-23B,23D, 25/ Charging, BAC, And RHR Pump Area; Revision; April 25, 2007
- Fire Protection Plan Drawing; PFP-22; AX-23B, 23D, 25/ RHR Hx Area, Component Cooling Water Pump Area, Letdown And Seal Water Filter Area, And RWST And Valve Gallery; Revision E
- Fire Protection Plan Drawing; PFP-28; AX-34, 35, 40/ Control Room HVAC Equipment And Former Records Storage Rooms; Revision E
- Fire Protection Plan Drawing; PFP-17; AX-23B,23D, 25/ Charging, BAC, And RHR Pump Area; Revision H
- Fire Protection Plan Summary; PFP-22; AX-23B, 23D, 25/ RHR Hx Area, Component Cooling Water Pump Area, Letdown And Seal Water Filter Area, And RWST And Valve Gallery; Revision November 17, 2004
- Fire Protection Program Analysis; Fire Zone Summary; AX-23D Component Cooling Water Pump 1B Room; Revision 8
- FPP-08-18; Pre-Fire Pan, September 30, 2008
- SA-KW-FPP-010; Fire Drill Evaluation/Critique Form; Performed on November 30, 2010

1R06 Flooding

- ACE018120; Gaps Identified In Door Flood Barrier
- Calculation C11696; Seismic Qualification Of Piping Components Installed By DCR 3570; Revision 0
- CR105608; Vendor Dedication Of Weld Wire Used In Fabrication Of Door 8 Found Unsatisfactory; August 8, 2008
- CR332829; Door 4 Did Not Pass The Flood Door Section Of Procedure MA-KW-MPM-BLD-001; April 29, 2009
- CR385992; Permanent Resolution For Standing Order 06-02, RHR Valve Gallery Flooding; June 27, 2010
- CR401205; Corrosion Of Flood Protection Check Valve Piping; October 28, 2010
- CR406507; Astragal Seal On Door 4 Is Degraded; December 7, 2010
- Drawing S-500; Turbine Building Plan-Base Slab Floor Drains; Revision J
- Drawing S-508; Administration Building Foundation Plan And Floor Drains; Revision R
- EOP FR-Z.2; Response To Containment Flooding; Revision 7
- GNP-04.04.01-1; 50.59 Applicability Review Of DCR 3570, Revision 0; April 18, 2005
- GNP-04.04.01-1; 50.59 Applicability Review Of DCR 3665, Revision 0; December 11, 2007
- KPS USAR B-72; Revision 21, November 7, 2008
- OP-KW-AOP-AFW-001; Abnormal Auxiliary Feedwater System Operation; Revision 2
- OP-KW-ARP-47051-N; CW Pumps Flood Level Trip; Revision 1
- OP-KW-ARP-47051-Q; Turbine Building Service Water Isolation; Revision 1
- OP-KW-ARP-47052-N; Turbine Building Flood Level Alert; Revision 0
- QF-0525 (FP-E-Mod-06); Design Description Form For Install Flood Barrier At Door 8; June 8, 2005
- QF-0525 (FP-E-Mod-06); Design Description Form: Install Check Valves In The Floor Drain Lines From The Cardox Room, Safeguards Alley, And The Bus 1 And 2 Room To The Turbine Building Sump, And Install Ac/Dc Sump Pumps In The Safeguards Alley Trench; April 21, 2005
- QF-0525(t) (FP-E-MOD-06); Design Description Form; Revision 1
- TDBD-KPS-FLD; Internal Flooding; Revision 2
- The Wm. Powell Company Catalog Page 94, Specs Corrosion Resistant Swing Check Valves

1R07 Annual Heat Sink Performance (71111.07)

- C-11159; Generic Letter 96-06 Determination Of Minimum Pressure Required Downstream Of The Containment Fan Coil Units; Revision 2
- C-11163; Containment Fan Coil Unit Performance Degradation Due To Service Water System Flow Reduction Special Study; Revision 3
- Containment FCU 1A And 1B Service Water Flow Monitoring Data Sheet; December 28, 2010
- CR407835; One Low Data Point in CFCU C Service Water Flow
- CR408146; PMP 18-13 Has Wrong Acceptance Criteria for CFCU SW Flow
- CR408480; USAR Table 6.3-3 Has Incorrect Value For Post-Accident SW Flow
- GNP-01.32.01; Heat Exchanger Performance Monitoring Program Evaluation Procedure; Revision 8
- NAD-01.32; Heat Exchanger Performance Monitoring; Revision 4
- NID-01.01; Generic Letter 89-13 Program Document; Revision 10
- PMP-18-13; RBV – Containment Fan Coil Unit Performance Monitoring (QA-1); Performed December 28, 2010
- PMP-18-13; RBV – Containment Fan Coil Unit Performance Monitoring (QA-1); Revision 5

1R11 Licensed Operator Requalification Program

- 2009 Biennial RO Written Examinations
- 2009 Biennial SRO Written Examinations
- 2009 LOR Training Review Board Minutes
- 2009/2010 LOR Management Observation Of Training Roll Up Report
- 2010 LOR Training Review Board Minutes
- Annual-Biennial Licensed Operator Requalification Examination Sample Plan; 2009 And 2010
- AO-035-JP01A; In-Plant Job Performance Measure; Revision F
- CA-014579; Corrective Action For CR017520, Results Of EDG Tiger Team Assessment; Revision 0
- CA-078144; Corrective Action For CR102446, EDG B VARS Discrepancy; Revision 0
- CR401200; Evaluation Of Shift Manager At The Unit Supervisor Position
- CR407539; Simulator EDG KVAR Response When Paralleling EDG Not Consistent With Plant EDG Response; Revision 0
- Job Aid 03-002; Simulator Exercise Guide (SEG) And Evaluation SEG Development; Revision 1
- Job Aid 04-001; Conduct Of Simulator Training And Evaluation; Revision 10
- Job Aid 08-002; Steady State Operation; Low Power; February, 2010
- Job Aid 08-003; Steady State Operation; Mid Power; February, 2010
- Job Aid 08-004; Steady State Operation; 100% Power; February, 2010
- Job Aid 08-006; Simultaneous Trip Of All Feedwater Pumps At Full Power; April 2010
- Job Aid 08-014; Slow Primary System Depressurization To Saturation Through PZR Relief Without HP ECCS; April 2010
- Kewaunee Attendance Report 2009 And 2010
- Management Observations Of Training; Various Dates Between January 1, 2009 And November 30, 2010
- Nuclear Oversight Audit Report 09-10; Nuclear Training And Qualification
- Nuclear Oversight Audit Report 10-4; Operations
- Nuclear Oversight Department Quarterly Report; First Quarter 2010
- OP-AA-103; Attachment 1; Operator Reactivation; Restoring Licensed Operator To Active Status; Revision 1
- OP-AA-103; Attachment 2; KPS Reactivation Plant Tour Record; Revision 1
- OP-AA-103; Operator Qualifications; Administrative Procedure; Revision 1
- RO-E03-JP01B; In-Plant Job Performance Measure; Revision A
- SAR000443; Comprehensive Self-Assessment of the Kewaunee Operations Training Programs; Formal Self-Assessment
- SAR000730; Fundamentals Of Operation; Informal Self-Assessment Report
- SAR000731; Configuration Control; Formal Self-Assessment Report
- SAR000735; Procedure Use And Adherence; Informal Self-Assessment
- SAR000894; KPS Operations Training Programs Comprehensive Self-Assessment; Formal Self-Assessment
- SAR000999; Improved Technical Specification; Formal Self-Assessment
- Scenario Based Testing Validation Packages:
- SEG LRC-09-SEE08; 2009 Annual Operating Exam Scenario; Revision A
- SEG LRC-10-DY-201; Dynamic Exam Scenario
- SEG LRC-10-DY-401; Dynamic Exam Scenario; Revision A
- Simulator Performance Tests
- ST122; Steady State Operation; Low Power; March 2009
- ST123; Steady State Operation; Mid Power; March 2009
- ST124; Steady State Operation; 100% Power; March 2009

- ST152; Simultaneous Trip of All Feedwater Pumps At Full Power; June, 2009
- ST156; Manual Turbine Trip From Maximum Power Level Without A Reactor Trip; April 2010
- ST160; Slow Primary System Depressurization To Saturation Through PZR Relief Without HP ECCS; June 2009
- SWO-09-105; Simulator Core Physics Testing For Kewaunee Cycle 30 Core; Completion Date February 8, 2010
- SWO-10-181; Simulator EDG KVAR Response When Paralleling EDG Not Consistent With Plant EDG Response; December 15, 2010
- TR-AA-210, Attachment 3; Form G-1; Operations Watchstander Temporary Restriction Record; Revision 0
- TR-AA-210, Attachment 3; Form G-3; NRC License Active Status Quarterly Tracking Record; 2009 And 2010; Revision 0
- TR-AA-400, Attachment 5; Remedial Training Plan; LOR/Cycle 09-01 Through -05 And 10-01 Through -03
- TR-AA-400; Implementation; Revision 4
- TR-AA-710; Licensed Operator Biennial And Annual Operating Requalification Exam Process; Revision 2
- TR-AA-710; NRC Exam Security Requirements; Revision 2
- TR-KW-1000; Conduct Of Training; Revision 4
- Week 1 2010 LOR JPMs; November 10, 2010
- Week 1 2010 LOR Scenario; LRC-10-SEE01; Revision A; November 10, 2010
- Week 1 2010 LOR Scenario; LRC-10-SEE09; Revision A; November 10, 2010
- Week 2 2010 LOR JPMs; November 17, 2010
- Week 2 2010 LOR Scenario; LRC-10-SEE03; Revision A; November 17, 2010
- Week 2 2010 LOR Scenario; LRC-10-SEE04; Revision A; November 17, 2010
- Week 2010 LOR Scenario; LRC-10-SEE07; Revision B; December 15, 2010
- Week 2010 LOR Scenario; LRC-10-SEE10; Revision B; December 15, 2010
- Week 3 2010 LOR JPMs; November 24, 2010
- Week 3 2010 LOR Scenario; LRC-10-SEE06; Revision A; November 24, 2010
- Week 4 2010 LOR JPMs; December 1, 2010
- Week 5 2010 LOR JPMs; December 7, 2010
- Week 6 2010 LOR JPMs; December 15, 2010

1R12 Maintenance Effectiveness

- ACE 018263; Boric Acid Transfer Pump 1B Bearing Seized
- Auxiliary Water System Balancing; April 2009 To September 2010
- Auxiliary Water System Unavailability; September 2007 To October 2010
- CA173633; Evaluate Boric Acid Transfer Pump B Tripped During Recirculation Of Boric Acid Storage Tanks As Rework; Revision 0
- CR387372; Boric Acid Transfer Pump B Tripped During Recirculation Of BASTs
- CR387736; Boric Acid Transfer Pump 1B Bearing Found Seized; Revision 0
- ES-1.3; Transfer To Containment Sump Recirculation; Revision 34
- Licensee Maintenance Rule Data Tracking Sheets; Auxiliary Water System; September 2007 To October 2010
- Log Entries Report; July 6 Through July 16, 2010
- Maintenance Rule Performance Criteria; Auxiliary Water System; Attachment B, Revision 5
- Maintenance Rule Scoping Questions; Auxiliary Water System; Attachment A, Revision 5
- Maintenance Rule System Basis – Chemical And Volume Control (35.1.3(35-01)); Revision 11
- Maintenance Rule System Basis; Auxiliary Water System; Revision 14

- MRE011795; MRE Regarding Found Damaged Wires To MOC Switch For 1-608BKR; Revision 0
- MRE011940; MRE For SW-4A Inoperable; Revision 0
- MRE012349; For Boric Acid Transfer Pump B Tripped During Recirculation Of Boric Acid Storage Tanks; Revision 0
- MRE012415; For BT-2B Failed To Fully Close During SP-05B-284; Revision 0
- NEP-08.04; Maintenance Rule Inspection Guideline For Buildings And Structures; Revision 4 And Last Completion For Auxiliary Building
- OP-KW-MOP-CVC-032; Boric Acid Transfer Pump "B" Seal Maintenance Procedure; Revision 0
- System Health Reports; Auxiliary Water System; From 3rd Quarter 2009 Through 2rd Quarter 2010
- WO KW100699410; Replace Auxiliary Contact In MCC62E-H4 Starter; July 9, 2010
- WO KW100699497; Disassemble, Inspect, And Repair Boric Acid Transfer Pump 1B; July 12, 2010

R13 Maintenance Risk

- Major Activities Data Lists, Control Room Operator Logs, Daily Risk Profiles And Work Planning Schedules For The Weeks Of October 18, 2010, And December 13 And 20, 2010

1R15 Operability Evaluations

- Basis document For ISI Code Class Boundaries, Appendix I
- CA181511; Review And Validate If The Appropriate Level Of 50.59 Scrutiny Was Applied; October 13, 2010
- CR351236; Revision Needed For OD239
- CR381722; Turbine Building FCU 1A Cooling Coil Leak; May 19, 2010
- CR398711; Emergency Diesel Generator 1B – Step Increase In Fast Start Time; October 11, 2010
- CR399711; Incorrect Lubricant Added To Turbine Outboard Bearing
- Drawing ISIM-606; ISI Flow Diagram Air Conditioner Cooling Water Piping; Revision U
- MA-KW-ISP-SW-001A; Service Water Header A Pressure Switch Calibration; Revision 8
- OD000397; Perform Prompt Operability Determination For Increase In DG B Start Time; October 12, 2010
- OD239; Dispersion Assumptions Used In Design Basis Dose Analysis Cannot Be Validated; Revision 2
- WO KW100462828; Replace The Cooling Coil On The 1A Turbine; Start May 19, 2010

1R18 Plant Modifications

- C10033; Safeguard's Diesel Fuel Oil Storage Volume Calculation; April 17, 2009
- C10033; Safeguard's Diesel Fuel Oil Storage Volume Calculation; September 23, 2010
- CA126459; Initiate ECN [& Work Order] For DCR 3736 To Add A Pulsation Dampener To PI 11886; January 15, 2009
- CR351688; Relay Chatter Modification Installed Improperly On Steam Generator A; October 9, 2009
- CR395331; FOST Heise Guage Found Off During Night Shift Round; September 19, 2010
- CR399174; Procedure Changes Missed For TMod 2010-02 And For New EDG Droop Setting; October 14, 2010
- Drawing OPERM-213-3; Flow Diagram Station And Instrument Air System; Revision 0

- DrawingOPERM-213-3P-10-02; Flow Diagram Station And Instrument Air System; Revision 0
- ECN 2010-02-01; Revise Documents: QF-0540; Revision 0 And C10033, Revision 2, Addendum A; September 23, 2010
- ICP-36-72; RC – Refueling Water Level Indication System Transmitters Process Tubing Blow Down And Venting; Revision 4
- NAD-02.07; Kewaunee Refueling Operations; Revision 7
- OP-KW-GOP-101; Startup From [CTS] Refueling To Cold Shutdown [ITS] Mode 6 To Mode 5; Revision 10
- OP-KW-GOP-104; Startup From [CTS] Hot Shutdown [ITS] Mode 3 To [CTS] Hot Standby [ITS] Mode 2 (Reactor Startup); Revision 9
- OP-KW-NCL-FH-002; Refueling-Containment Integrity CL, S/G Secondary Side Open; Revision 2
- OP-KW-NOP-DGM-002; Loading Diesel Generator Fuel Oil; Revision 11
- SP-10-225; Diesel Fuel Oil Sampling; September 30, 2010
- SP-34-339A; RHR Pump A Full Flow Test At Refueling Shutdown – IST; May 4, 2010
- SP-42-321A; Test Of Step O And 6 Start Of Aux Feedwater Pump A Aux Lube Oil Pump; May 18, 2010
- SP-55-167-9B; Train B Refueling Shutdown Valve Tests – IST; November 16, 2010
- TMOD 2010-02; 1A/B Underground Fuel Oil Storage Tank Level Indication; July 7, 2010
- TMOD 2010-02; DBLFPB-Design Basis Limit For A Fission Product Barrier; July 7, 2010
- WO KW100661722; Install Temporary Heise Module For Level Indication For Diesel Tanks; July 15, 2010

1R19 Post-Maintenance Testing

- ACE018344; While Restoring Air On WO KW100674232 SW-4A Opened; September 10, 2010
- ACE018452; Impact of DG Start-Up Air Compressor Functionality on DG Operability
- ACE018458; A Emergency Diesel Generator Start-Up Air Compressor Drive Belts Detached
- ACE18344 For CR393971; SW-4A Open Causing Unexpected Entry Into Action Statement
- AD-AA-102; Procedure Implementation Summary Sheet For OP-KW-05P-DGE-001A; November 1, 2010
- AD-AA-102; Procedure Implementation Summary Sheet For OP-KW-05P-DGE-001A; November 1, 2010
- ARP-47091C; Diesel Generator A Abnormal; Revision 0
- ARP-47091F; Diesel Generator B Abnormal; Revision 0
- C10535; Air Accumulators Leakage Acceptance Criteria; March 30, 1989
- CA186945; CA To Document Eng Evaluation Of FW-7A; December 8, 2010
- CR337898; PMP-07-05 Needs Updated To Clearly Identify Correct PMT Requirements; June 11, 2009
- CR343873; Did Not Time SW-903D With All Four SW Pumps Running Per SP-02-138B; Revision 2
- CR387852; Questions on Testing of SW-4A and SW-4B
- CR393971; While Restoring Air On WO KW100674232 SW-4A Opened; September 8, 2010
- CR401723; EDG A Governor Mode Selector Switch Placed In AUTO Prior To 890-950 RPM; November 1, 2010
- CR402059; PMT Matrixed Wrong In PMT Database; November 2, 2010
- CR402113; “A” Emergency Diesel Generator Air Compressor, Two Belts Were Found Detached
- CR402380; Stock Code 42152508 Description Requires Additional Info To Ensure Correct Belt
- CR402383; Impact of DG Start-Up Air Compressor Functionality on DG Operability

- CR402489; Review EDG Start-Up Air Compressor Belt Installation Method
- CR403839 Troubleshooting Plan For FW-7A Erratic Operation; Dated November 16, 2010
- CR403839; Received TLA-11 RX Thermal Power High Due To FW-7A Erratic Operation; November 16, 2010
- DCR 3338; Service Water Isolation To The Turbine Building; Revision 1
- GIP-001; Solenoid Valve/Coil Replacement; Revision 14
- IST Basis Doc-App. M; KPS Inservice Testing Basis Valve Data Sheet For 02-SW; Revision 7
- KNPP Inservice Testing Basis Valve Data Sheet for Feedwater Valve FW-7A; Revision D
- MA-KW-ESP-DGE-003A; Inspection Of Diesel Generator A; November 1, 2010
- MA-KW-GIP-001; Solenoid Valve/Coil Replacement; Revision 0
- NOP-DGM-001A; Diesel Generator A Remote Operation; Revision 4
- NOP-DGM-001B; Diesel Generator B Remote Operation; Revision 4
- OD273; Missing Design And Licensing Basis For EDG Start Up Air System; Revision 0
- OD273; Missing Design And Licensing Basis For EDG Start Up Air System; Revision 1
- OD273; Missing Design And Licensing Basis For EDG Start Up Air System; Revision 2
- OP-KW-ORT-MISC-010; Chell Leak Rate Monitor Operation; September 8, 2010
- OP-KW-ORT-SW-003; SW-4A Accumulator Leak Rate Test; September 8, 2010
- SP-02-138A; Perform As-Left Timing For SW-4A Following Maintenance; September 10, 2010
- WM-AA-301, Attachment 11; FW-7A Started To Oscillate Causing 9 MW Thermal Swings
- WO KW100271572; PM16-126: Perform MCCB Testing On Screenhouse Exhaust Fan 1B
- WO KW100271698; PM16-527: Inspect/Clean Motor Starter On Screenhouse Exhaust Fan 1B
- WO KW100311375; PM31-065: Inspect/Clean/Lube Motor
- WO KW100506461; Inspect MOC Switch for Extent of Condition
- WO KW100516701; PM31-006: Megger 480V Motor
- WO KW100527085; PM05B004: Inspect/Clean/Lube Motor
- WO KW100527135; PM05B010: Perform Insulation Resistance/Offline PDMA Test
- WO KW100634839; PM16-042: Inspect/Lube/Flush Fan Coil; October 14, 2010
- WO KW100674232; Replace SV-33043; October 26, 2010
- WO KW100674784; PM05B707: Perform Online Electrical Testing
- WO KW100695808; DC KW-09-01016: Install New Service Water Piping To Fan Coil Units 1C and 1D
- WO KW100716718; Inspect and Adjust, or Replace and Adjust Belts on EDG 1A Start-up Air Compressor
- WO KW100720352; Inspect and Adjust, or Replace and Adjust Belts on EDG 1A Start-up Air Compressor
- WO KW100723580; Diesel Generator A Start-up Air Compressor Making Abnormal Noises
- WO KW100733126; “A” Emergency Diesel Generator Air Compressor Broke

1R22 Surveillance Testing

- Auxiliary Building Zone SV Filter Testing Graph; March 1, 1991 Through March 1, 2011
- CAP 034000; Lack Of Documented Basis For SI Pump Minimum Flow Recirculation
- Correspondence Entitled Initial Response To NRC Bulletin 88-04; July 8, 1988
- CR363106; SI Pump A Inboard Has A Drop Every 30 Seconds Leak; December 24, 2009
- CR384361; SI-5A has Dry, Inactive BA Leak Around Packing Gland, June 13, 2010
- CR395620; Change Needed In SI System Operation (From Follow-Up To NRC Question)
- CR396649; Failure To Place MFRV In Manual
- CR396649; Failure To Place MFRV In Manual; Operations Clock Reset and Crew 4.0 Evaluation; October 8, 2010

- Drawing 3091; Schematic Diagram Redundant Overspeed Trip System; Revision G
- Drawing APXK-100-28; Analytical Part Flow Safety Injection; Revision N
- Drawing APXK-100-29; Analytical Part Flow Safety Injection; Revision R
- Drawing E-2057; Integrated Logic Diagram Turbine System; Revision T
- Drawing E-3090; Schematic Diagram Redundant Overspeed Trip System; Revision E
- FT-13, Project 12Kewan3877; Acceptance For In-Place Testing; Auxiliary Building Zone SV Train A; December 15, 2010
- FT-13, Project 12Kewan3877; Acceptance For In-Place Testing; Zone SV-A; December 1, 2010
- GNP-03.24.01; Job Briefs Implementation; Revision 16
- KPS.RA.022; Probabilistic Risk Assessment Notebook – Significance Determination Of Kewaunee Safety Injection Pump Recirculation Issue; Revision 0
- KPS.RA.022; Probabilistic Risk Assessment Notebook – Significance Determination Of Kewaunee Safety Injection Pump Recirculation Issue; Revision 1
- MA-KW-EPM-DGE-003; Train A Auto Sequencing Test With Diesel A In Pullout; Performed August 9, 2010, Revision 7
- MA-KW-EPM-DGE-008; Train B Autosequencing Test With Diesel B In Pullout; Revision 3
- MA-KW-MPM-DGM-010A; Barring Over Train A Emergency Diesel Generator; Revision 4
- NP 1.6.10; Pre-And Post-Job Briefs; Revision 13
- NUCON Report 11KITEG011/375; Radioiodine Test Report; December 14, 2010
- NUCON Report 13KEWAN3878/2; Radioiodine Test Report; December 11, 2010
- NUREG/CR-5500, Volume 9; Reliability Study: High-Pressure Safety Injection System, 1987-1997
- OP-KW-ORT-SI-001A; Train A Containment Sump B Water Level Verification; Performed September 24, 2010, Revision 6
- OP-KW-OSP-DGE-001A; Diesel Generator A Monthly Availability Test; Revision 10
- OP-KW-OSP-DGE-001B; Diesel Generator B Monthly Availability Test; Revision 11
- OPR-15; Safety Injection Pumps
- ORT-KW-ORT-DGM-001A; Emergency Diesel Generator 1A Operation Log; Performed August 9, 2010, Revision 9
- PI-AA-5000; Human Performance; Revision 4
- SP-05B-283B; Motor Driven AFW Pump B Full Flow Test; Revision 24; Performed November 5, 2011
- SP-05B-284; Turbine Driven AFW Pump Full Flow Test; Revision 36; Performed November 5, 2011
- SP-05B-346; Turbine Driven AFW Pump Low Suction And Low Discharge Pressure Trip Test; Revision 12
- SP-14-118A; Auxiliary Building Zone SV Train A Filter Testing; December 16, 2010
- SP-14-118A; Auxiliary Building Zone SV Train A Filter Testing; July 27, 2010
- SP-23-100B; Train B Containment Spray Pump And Valve Test – IST Surveillance Procedure; August 3, 2010
- SP-33-098A; Train A Safety Injection Pump And Valve Test – IST
- SP-34-099B; Train B RHR Pump And Valve Test – IST; Revision 25
- SP-47-316A; Channel 1 (Red) [CTS] Instrument Channel Test [ITS] Channel Operational Test' Revision 31
- SP-54-233; Turbine Redundant Overspeed Trip Test Surveillance Procedure; Performed July 29, 2010
- USAR Section 6.2; Safety Injection System; Revision 22
- WO KW 100669802; Train A Safety Injection Pump And Valve Test – IST

1EP2 Alert and Notification System Evaluation

- EPMP-09.03; Alert And Notification Siren System Testing And Maintenance; Revision 17
- KPS Annual Siren Preventative Maintenance Records For 2009 And 2010
- KPS Annual Siren Problem Tracking Reports For 2009 And 2010
- PMP-44-01; COM – Gai-tronics Audibility Survey; Revision 6
- PMP-44-03; COM – Gai-tronics Audibility Survey Non-Power Block Areas; Revision A

1EP3 Emergency Response Organization Staffing and Augmentation System

- EPMPFG-02.06-01, Figure-01; Kewaunee Nuclear Power Plant Shift Staff And ERO Position
- Kewaunee Nuclear Power Plant Emergency Plan, Section 5; Organizational Control Of Emergencies; Revision 34
- Kewaunee Quarterly, Off-hours, Unannounced Augmentation Drills; December 2009 – June 2010
- SAR 000420; Kewaunee Baseline EP Inspection; June 27, 2008
- Versus Table B-1 Functions; Revision C

1EP4 Emergency Action Level and Emergency Plan Changes

- Kewaunee Power Station Emergency Action Level Technical Basis Document; Revision 6
- Kewaunee Power Station Emergency Plan; Revision 34

1EP5 Correction of Emergency Preparedness Weaknesses

- ACE 014073; Emergency Plan Maintenance Procedure EPMP-06.01, Objective 20 Was Not Met During The 2008 Annual Exercise; November 2008
- ACE 017674; Emergency Preparedness Drill Material Left Unattended; June 2009
- ACE 017720; 2009 ILT Class Exam Failures; July 2009
- ACE 018119; Revision And Review Process For EPIPs Has Not Been Effective; April 2010
- ACE 018158; ICSC Inventory Surveillance Identifies KPS Procedures Out Of Date/Missing; April 2010
- ACE 018301; NRC Violation For Inadequate NRC Approval For Change Made To EALs; August 2010
- ACE 018318; KEWA – Resolve The Issues With Missing, Misfiled, Incorrect Revisions Of Procedures; August 2010
- ACE 17505; Potential NRC Violation Associated With Seismic Monitor Inoperability; February 2008
- NOS Audit Report 09-03; Emergency Preparedness; April 15, 2009
- NOS Audit Report 10-02; Emergency Preparedness; April 22, 2010
- SAR000715; Dominion Formal Self-Assessment Report; KPS EP Gaps To Excellence Self-Assessment; March 18, 2010

2RS1 Radiological Hazard Assessment and Exposure Controls

- RP-AA-202; Radiological Posting; Revision 4
- RP-KW-001-004; RCA Entry And Exit; Revision 4

2RS7 Radiological Environmental Monitoring Program

- 2008 Annual Environmental Monitoring Report
- 2009 Annual Environmental Monitoring Report

- Audit Report 09-15; Offsite Dose Calculation Manual/Radiological Environmental Monitoring Program/Environmental Protection Program And Surry Refueling Activities; January 28, 2010
- CR332686; Evaluate The Applicability Of Sea Land Containers And 50.75(g); May 12, 2009
- CR399022; Radioactive Material Package (DOT Exempt) Arrived At Kewaunee Leaking Water; October 15, 2010
- CR399180; Investigate Possible Causes For Settling Plug G Trend; October 14, 2010
- Errata For 2008 Annual Environmental Monitoring Report; June 4, 2009
- ICP-63-01; MET – Primary And Backup Tower Shelter Temperature Switch Calibration And Door Alarm functional Test; Revision E
- ICP-63-30; MET- Primary Tower Sensor Replacement, RTD And Processor Calibrations; Revision 6
- ICP-63-31; MET- Backup Tower Sensor Replacement, RTD And Processor Calibrations; Revision 6
- KPS RADIAC Calibration Worksheet; RADECO AVS-28A; Serial No. 6730; September 2, 2010
- KPS RADIAC Calibration Worksheet; RADECO AVS-28A; Serial No. 6730; September 14, 2010
- KPS RADIAC Calibration Worksheet; RADECO AVS-28A; Serial No. 6732; September 2, 2010
- KPS RADIAC Calibration Worksheet; RADECO AVS-28A; Serial No. 6733; September 2, 2010
- KPS RADIAC Calibration Worksheet; RADECO AVS-28A; Serial No. 6735; September 2, 2010
- KPS RADIAC Calibration Worksheet; RADECO AVS-28A; Serial No. 6737; September 2, 2010
- Offsite Dose Calculation Manual; Revision 12
- Radiological Environmental Monitoring Manual (REMM); Revision 16
- RP-AA-503; Radiological Decommissioning Records – 10 CFR 50.75(g) Program; Revision 0
- RP-KW-007-063; Instrument Calibration Procedure – Air Sample Pumps: RAS 1, RAS 2, RAP 1, RAP 1Q, RAP 3, And RADECO AVS 28-A; Revision 1
- Self-Assessment Number SAR000752; Effluent Program; April 18, 2009
- SP-32B-268; Site Boundary Doses From Gaseous Effluents; Revision 13
- SP-63-164; Environmental Sample Collection; Revision 40
- Work Order KW100563283; PM63-820: Replace Sensor W/ Sensor From Stock. Send Removed Sensor To Manufacturer; May 26, 2010
- Work Order KW100563283; PM63-821: Replace Sensor W/ Sensor From Stock. Send Removed Sensor To Manufacturer; May 26, 2010
- Work Order KW100563283; PM63-822: Replace Sensor W/ Sensor From Stock. Send Removed Sensor To Manufacturer; May 26, 2010

4OA1 Performance Indicator Verification

- CHEM-50.003; Iodine, Radioactive; Revision 4
- Chemistry Effectiveness Indicator; July 2009 Through September 2010
- CR382152; Safety System Functional Failures May Not Have Been Properly Assessed; May 19, 2010
- CY-KW-040-004; Primary Sampling System; Revision 2
- DNAP, Emergency Preparedness Performance Indicators; Revision 10
- LER2009-008-00; Inadequately Controlled Reactor Coolant System Dilution Results In Violation Of Technical Specifications; October 10, 2009

- LER2009-009-00; Automatic Start Of Emergency Diesel Generator Due To Safeguards Bus Power Supply Transformer Trip; October 15, 2009
- OD000397; Perform Prompt Operability Determination For Increase In DG B Start Time; October 11, 2010
- RP-AA-112; Attachment 1; Example Radiological Protection Regulatory Assessment Performance Indicator Tracking Form And Supporting Documentation; July 2009 Through September 2010
- RP-AA-112; Radiation Safety Performance Indicator Reporting; Revision 4
- WO KW100589063; TI-55109 Found Out Of Spec And Unable To Calibrate; October 7, 2009
- WO KW100675239; DGM – Diesel Engine B Water Level LS-16439 Did Not Actuate On Initial Cal Check; August 9, 2010

4OA2 Identification and Resolution of Problems

- C11898; Determine Maximum RCS Temperature At Which Second RHR Train May Be Placed Into Operation; August 11, 2009
- CA177432; CA To Determine If Frequency Of UT Needs To Be Increased From Every Two Weeks; August 27, 2010
- CR324011; Potential For Steam Voids In RHR After Cooldown Operations; February 18, 2009
- CR335075; Deficiencies In OP-KW-AOP-RHR-002, “Shutdown Loss Of Coolant Accident;” May 15, 2009
- CR369896; ICS Gas Void Design Basis Analysis Documented In Non-Design Basis Document; February 23, 2010
- CR372366; Gas Void In Piping Downstream Of SI-351B After Venting By SP-34-099B; March 16, 2010
- CR373419; Failure To Verify Systems Are Full After Draining For Maintenance; March 24, 2010
- CR374551; Actions Needed To Improve KPS Gas Management; March 31, 2010
- CR383362; Gas Voids In SI Suction Bypass Line; June 3, 2010
- CR389330, NRC Concern that Corrective Actions for SW-1306A/B Modification Inappropriate; Revision 0
- CR392601; Gas Void In RHR Train A Header And Mini-Flow Recirculation Line; August 26, 2010
- CR393010; SI Accumulator A And B Level Decrease By 1% Since August 26, 2010; August 31, 2010
- DCR 3163; Design Description; Revision 1
- DCR3540; Design Description Form; Revision 0
- E-1632; Integrated Logic Diagram Service Water System; Revision AM
- E-2492; Schematic Diagram – Control Valves CV-31406, 31407; Revision H
- ETE-KW-2010-0003; SW-1306A/B Control Circuit QA Type Position Paper; Revision 0
- GNP-01.01.01; Determination Of Nuclear Safety Design Classifications, QA Type And EQ Type; Revision 4
- GNP-01.01.02;QA Type and EQ Type Classification Change; Revision 4

4OA3 Follow-Up of Events and Notices of Enforcement Discretion

- LER 2010-001-00; Safety Injection Pump Recirculation Line Isolation Results In Violation Of Technical Specifications; November 17, 2010

4OA5 Other Activities

- 10Q4916-CAL-001; Seismic Stress Analysis Of Buried Diesel Generator Fuel Oil Piping Vent Lines; Revision 0
- KPS-UCR-2010-066; USAR Update Of Table B.2-1

4OA7 Licensee-Identified Violations

- CR393971; While Restoring Air On WO KW100674232 SW-4A Opened; September 8, 2010
- CR399711; Incorrect Lubricant Added To Turbine Outboard Bearing
- CR402383; Impact of DG Start-Up Air Compressor Functionality on DG Operability
- CR403997; While Performing SP-55-155A Page 7 Was Missed

NRC Identified Condition Reports

- CR397446: Upgrade Screenhouse Exhaust Fan 1A Scaffold Evaluation To High Risk
- CR397806; Safeguards Alley Low Light Levels
- CR398350; Violation of 10 CFR 50.59 (SW-1300A/B) Debriefed At NRC Exit
- CR398793; 3 Cross-Cutting Aspects In The Area Of Human Performance –Dec Making H.1(b)
- CR398866; Procedure OSP-SI-001 Pre-Test Conditions Rx Trip Relays Verification
- CR400013; Non-Conservative Inputs to PRA Analysis For SI Miniflow SDP
- CR400047; 50.75(g) Program Enhancements Identified
- CR400599; ITS Revision Of ODCM Does Not Contain Appendix E
- CR401205; Corrosion Of Flood Protection Check Valve Piping
- CR401813; NRC Concern With Unacceptable Pressure Instrument Preconditioning At KPS
- CR402922; Procedure Change Request - PMP-33-06
- CR403949; Requested By Unit Supervisor To Remove A Tube Of Material From ‘B’ RHR HX Room
- CR404317; NRC Questions ACE Downgrade
- CR404520; Janitor Closet Hose Outside Of Sink Area Leaked To TSC Basement
- CR404731; Doors Mis-Marked In Gas Bottle Storage Area
- CR404889; NRC Questions Why Some Fire Fighting Equipment Is Not Listed In Area Fire Plan
- CR405800; NRC Proposed Non-Cited Violation With Cross-Cutting Aspect for Preconditioning
- CR405809; NRC Proposed Non-Cited Violation With Cross-Cutting Aspect for Procedure Use
- CR405816; Misapplication Of New Setpoint Methodology For One ESFAS Function In TR EE-0116
- CR406383; Local Leak Rate Test Results Assigned To Wrong Zone
- CR407330; Answers To NRC Questions On Unannounced Fire Drill 11/30/10
- CR407539; Simulator EDG KVAR Response During Normal Start Of EDG Not Consistent With Plant
- CR407835; One Low Data Point In C CFCU Service Water Flow
- CR407845; NRC Inspector Concern For JPM Performance Step
- CR408146; PMP 18-13 Has Wrong Acceptance Criteria For CFCU SW Flow
- CR408881; NRC Questions CR 375475 Basis For Operability
- CR408967; Current Flooding Design Basis Is Confusing

LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
ALARA	As-Low-As-Is-Reasonably-Achievable
ANS	Alert and Notification System
ASME	American Society of Mechanical Engineers
CA	Correction Action
CAP	Corrective Action Program
CCW	Component Cooling Water
CDF	Core Damage Frequency
CFCU	Containment Fan Coil Unit
CFR	Code of Federal Regulations
CR	Condition Report
DCR	Design Change Request
DRS	Division of Reactor Safety
EAL	Emergency Action Level
ED	Electronic Dosimeter
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedure
EP	Emergency Preparedness
ERO	Emergency Response Organization
FCU	Fan Coil Unit
FIN	Finding
FP	Fire Protection
gpm	Gallons Per Minute
IMC	Inspection Manual Chapter
I&C	Instrumentation & Control
IP	Inspection Procedure
JPM	Job Performance Measure
KPS	Kewaunee Power Station
LER	Licensee Event Report
LERF	Large Early Release Fraction
LOCA	Loss of Coolant Accident
LORT	Licensed Operator Requalification Training
MFWRV	Main Feedwater Regulating Relief Valve
NCO	Nuclear Control Operator
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OD	Operability Determination
ODCM	Off-Site Dose Calculation Manual
P&ID	Piping and Instrumentation Diagram
PARS	Publicly Available Records System
PI	Performance Indicator
psig	Pounds Per Square Inch Gauge
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RHR	Residual Heat Removal

RPS	Reactor Protection System
RS	Reactor Safety
SAT	Systems Approach to Training
SDP	Significance Determination Process
SGTR	Steam Generator Tube Rupture
SI	Safety Injection
SLOCA	Small Break Loss of Coolant Accident
SR	Safety-Related
SRA	Senior Reactor Analyst
SSC	Structure, System, and Component
SW	Service Water
TDAFW	Turbine-Driven Auxiliary Feedwater
TI	Temporary Instruction
TLD	Thermoluminescent Dosimeter
TS	Technical Specification
URI	Unresolved Item
USAR	Updated Safety Analysis Report
UT	Ultrasonic Test
VHRA	Very High Radiation Area
WO	Work Order

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Sincerely,

/RA/

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

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Letter to D. Heacock from M. Kunowski dated February 4, 2011

SUBJECT: KEWAUNEE POWER STATION INTEGRATED INSPECTION REPORT 05000305/2010005

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