



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

July 12, 2013

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 – NRC INTEGRATED INSPECTION
REPORT 05000305/2013003**

Dear Mr. Heacock:

On May 31, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed its final inspection under the Operating Reactor Assessment Program at your Kewaunee Power Station. The enclosed inspection report documents the inspection results, which were discussed on June 25, 2013, with Mr. A. Jordan, the Site Vice President, and other members of your staff.

The inspections 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.

One NRC identified finding of very low safety significance (Green) was identified during this inspection.

This finding was determined to involve a violation of NRC requirements. Additionally, one licensee-identified violation is listed in Section 4OA7 of this report. The NRC is treating these violations as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

Kewaunee Power Station (KPS) operated at full power until May 7, 2013, when Kewaunee shutdown and permanently ceased power operation. On May 14, 2013, Kewaunee certified the permanent removal of fuel from the reactor vessel (ADAMS Accession No. ML13135A209). On May 31, 2013, the NRC notified Kewaunee that the Operating Reactor Assessment Program had ceased and that implementation of the Decommissioning Power Reactor Inspection Program, would begin on June 1, 2013 (ADAMS Accession No. ML13151A375).

If you contest 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 Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Kewaunee Power Station.

D. Heacock

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If you disagree with a cross-cutting aspect assignment 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 Kewaunee Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and 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 Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA by Nirodh Shah for/

Kenneth Riemer, Branch Chief
Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 05000305/2013003
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000305/2013003

Licensee: Dominion Energy Kewaunee, Inc,

Facility: Kewaunee Power Station

Location: Kewaunee, WI

Dates: April 1 through May 31, 2013

Inspectors: R. Krsek, Senior Resident Inspector
K. Barclay, Resident Inspector
J. Mancuso, Reactor Engineer
A. Dahbur, Senior Reactor Engineer
V. Myers, Health Physicist
C. Tilton, Senior Reactor Engineer

Approved by: Kenneth Riemer, Branch, Branch Chief
Branch 2
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000305/2013003, 04/01/2013 – 05/31/2013; Kewaunee Power Station; Surveillance Testing.

This report covers a two-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One Green finding was identified by the inspectors. This finding was considered an NCV of NRC regulations. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using IMC 0609, "Significance Determination Process" dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components Within the Cross Cutting Areas" dated October 28, 2011. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated January 28, 2013. 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: Mitigating Systems

- Green. A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors, for the failure to have procedures appropriate to the circumstances for an activity that affects quality. Specifically, Operating Surveillance Procedure OP-KW-OSP-TAV-001A (and B), "Diesel Generator A [or B] Back Up Air Supply Leak Rate Test," allowed the performer to open safety related (SR) pressure boundary valves and install non-safety related (NSR) test equipment on both back up air bottle sets without declaring the respective Emergency Diesel Generator (EDG) inoperable. The licensee initiated a condition report and revised both procedures to prevent both bottle sets from being tested at the same time while maintaining the respective diesel operable.

The finding was determined to be more than minor because the finding, if left uncorrected, had the potential to lead to a more significant safety concern. Specifically, the licensee concluded that procedures OP-KW-OSP-TAV-001A (and B) allowed unqualified test equipment to be relied upon as the SR pressure boundary for both back up air bottle sets without declaring the respective EDG inoperable. The inspectors concluded this finding was associated with the Mitigating Systems Cornerstone. 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, "Initial Characterization of Findings," dated June 19, 2012, and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, Mitigating Systems Screening Questions, dated June 19, 2012. The licensee evaluated the installed test equipment and hose connections and concluded their pressure rating exceeded that necessary to function as a pressure boundary; therefore, the inspectors answered "Yes" to Mitigating Systems Screening question number 1, and screened the finding as having very low safety significance (Green). This finding has a cross-cutting aspect in the area of human performance, Resources, because the licensee did not assure that procedures were adequate to assure nuclear safety (H.2(c)). (Section 1R22)

B. Licensee-Identified Violations

One violation of very low safety significance identified by the licensee has been reviewed by inspectors. Corrective actions planned or taken by the licensee have been entered into the licensee's Corrective Action Program (CAP). This violation and corrective action tracking number is listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Kewaunee Power Station (KPS) operated at full power until May 7, 2013, when Kewaunee shutdown and permanently ceased power operation. On May 14, 2013, Kewaunee certified the permanent removal of fuel from the reactor vessel (ADAMS Accession No. ML13135A209). On May 31, 2013, the NRC notified Kewaunee that the Operating Reactor Assessment Program had ceased and that implementation of the Decommissioning Power Reactor Inspection Program, would begin on June 1, 2013 (ADAMS Accession No. ML13151A375).

The inspectors also verified that all the fuel was safely removed from the reactor vessel and stored in the spent fuel pool.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Zone AX-23B, reactor auxiliaries north center 606 elevation;
- Fire Zone AX-23D, component cooling water pump 1B;
- Fire Zone AX-30, relay room;
- Fire Zone SC-70A, screenhouse north; and,
- Fire Zone TU-95B, safeguards alley.

The inspectors reviewed areas to assess if the licensee had implemented an FP program that adequately controlled combustibles 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 their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment to this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's 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 April 25, 2013, the inspectors observed a fire brigade activation for an announced fire drill. 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 and openly discussed them in a self-critical manner at the drill debrief. Documents reviewed are listed in the Attachment to this report. Specific attributes evaluated were:

- proper wearing of turnout gear and self-contained breathing apparatus;
- proper use and layout of fire hoses;
- employment of appropriate fire fighting techniques;
- sufficient firefighting equipment brought to the scene;
- effectiveness of fire brigade leader communications, command, and control;
- utilization of pre-planned strategies;
- adherence to the pre-planned drill scenario; and,
- drill objectives.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Regualification (71111.11Q)

a. Inspection Scope

On April 17, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator regualification training to verify that operator performance was adequate; simulator performance was adequate; evaluators were identifying and documenting crew performance problems; and the evaluator's post-scenario critiques were adequate. The crew's performance was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 Resident Inspector Quarterly Observation of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On May 10, 2013, the inspectors observed the control room during the drain down of the reactor coolant system from a solid condition to six inches below the reactor vessel flange, in preparation for the reactor vessel head lift. The drain down of the reactor coolant system results in an increased risk condition. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- correct use and implementation of procedures;
- control board and equipment manipulations; and,
- oversight and direction from supervisors.

The performance in these areas was compared to pre-established operator action expectations, procedural compliance and task completion requirements. Documents reviewed are listed in the Attachment to this report.

These inspections constituted one quarterly licensed operator heightened activity/risk sample as defined in IP 71111.11.

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 repetitive lockout relay failures on safety related 4160-volt breakers.

The inspectors verified the licensee's actions to address system performance or condition problems in terms of the following areas, as necessary:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and

- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

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

This inspection constituted one quarterly maintenance effectiveness sample 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 equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- risk assessment on April 5;
- risk assessment on April 8; and,
- risk assessment on April 24.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstone. 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 that plant conditions were consistent with the risk assessment. The inspectors also reviewed Technical Specification (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.

This maintenance risk assessment and emergent work control activity constituted three samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- CR511510, 1B ABFF Fan Coil Unit Fan is Operating at a Higher Speed than Design;
- CR513467, Acrid Smell Coming From CC Pump B Fan Coil Unit;
- CR509921, Additional Defects on BF57 Relays found in Warehouse; and,
- CR507224, Amount of Sand Accumulation Found in R-20 on Reduced Sensitivity.

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 Updated Safety Analysis Report (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 corrective action documents to verify that the licensee had identified and corrected any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following post-maintenance testing (PMT) activities to verify that procedures and test activities were adequate to ensure system operability and functional capability for Work Order (WO)100800570, testing of EDG A after 24 month inspection on May 14, 2013.

These activities were selected based upon the SSCs' 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 documents such as TSs, 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 PMTs to determine whether the licensee had identified problems and entered them in the CAP, and that the problems were corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one post-maintenance testing sample as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R20 Outage Activities (71111.20)

.1 Other Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for Kewaunee's permanent shutdown that began on May 7, 2013. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed the reactor shutdown and cooldown, outage equipment configuration and risk management, electrical lineups, control and monitoring of decay heat removal, control of containment activities, personnel fatigue management, and identification and resolution of problems associated with the outage.

The resident inspectors verified that all the fuel was permanently removed from the reactor vessel and placed in the spent fuel pool on May 14, 2013.

This inspection constituted one other outage sample as defined in IP 71111.20-05.

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 their intended safety

function and to verify that testing was conducted in accordance with applicable procedural and TS requirements:

- flux mapping on April 10, 2013 (routine);
- diesel B monthly availability test on April 22 (routine);
- diesel A monthly availability test on April 15 (routine);
- TSC diesel monthly availability test on April 29 (routine);
- TSC diesel monthly availability test on May 28 (routine); and,
- diesel B back up air supply leak rate test on February 26 (routine).

The inspectors considered the following test attributes, if applicable, while they observed in-plant activities and reviewed procedures and associated records:

- 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 was 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 IST, testing was performed in accordance with the applicable version of American Society of Mechanical Engineers code, Section XI, 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 six routine surveillance testing samples as defined in IP 71111.22, Sections -02 and -05.

b. Findings

(1) Inadequate Procedure for Testing of the Diesel Room Ventilation Damper Actuator Back Up Air System

Introduction: A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors, for the failure to have procedures appropriate to the circumstances for an activity that affects quality. Specifically, Operating Surveillance Procedure OP-KW-OSP-TAV-001A (and B), "Diesel Generator A [or B] Back Up Air Supply Leak Rate Test," allowed the performer to open safety related (SR) pressure boundary valves and install non-safety related (NSR) test equipment on both back up air bottle sets without declaring the respective EDG inoperable.

Description: On February 16, 2013, during a plant status walk down, the inspectors observed that both sets of SR back up air bottles for the B EDG ventilation damper actuators were connected to NSR test equipment and unattended. The EDG room ventilation dampers modulate during EDG operation to maintain the room temperatures necessary to support operation of the EDGs and SR electrical buses. The modulation of the dampers is accomplished using air operated actuators utilizing NSR station air, with a SR back up air supply. The SR back up air supply consists of two sets of two bottles for each diesel room. Each set of bottles can supply enough air to operate the damper actuators for seven days of EDG operation. The dual set arrangement allows for replacement of one set of bottles while the other set supports damper operation.

The inspectors were concerned that the licensee should only have one back up air bank connected to NSR test equipment with its SR pressure boundary valve open, in order to consider the B EDG operable. The inspectors reviewed the design package for the installation of the back up air modification and found that the description stated that two sets of bottles were provided, one set of bottles is required to be available, and a second set is provided to use for maintenance and testing without affecting EDG operability. The inspectors reviewed procedure OP-KW-OSP-TAV-002A, "Diesel Generator A Back Up Air Supply Leak Rate Test," Revision 7, which contained the steps in question prior to the licensee combining two separate procedures into one procedure under OP-KW-OSP-TAV-001A. Procedure OP-KW-OSP-TAV-002A, Revision 7, directed the installation of test equipment on only one set of bottles at a time to ensure the EDG always remained operable. When the licensee combined the two procedures on October 16, 2012, the new revision of OP-KW-OSP-TAV-002A removed an 'or' statement that was critical to ensuring only one set of bottles was removed from service at a time. The updated steps for installing the test equipment directed that the test equipment be installed on both sets simultaneously, instead of individually. The licensee had implemented this procedure on both EDGs since the issuance of the new revision of OP-KW-OSP-TAV-002A. The inspectors discussed their concerns with the licensee and the licensee's evaluation concluded that the procedure put the system in a testing configuration that placed the diesels in an inoperable condition. The licensee put the procedures on administrative hold and revised the procedures to prevent both bottle sets from being tested at the same time while maintaining the respective diesel operable.

Analysis: The inspectors determined that failing to have procedures appropriate to the circumstances for testing the EDG back up air supply leak rate was contrary to 10 CFR Part 50, Appendix B, Criterion V and was a performance deficiency. The finding was determined to be more than minor because the finding, if left uncorrected, had the potential to lead to a more significant safety concern. Specifically, the licensee concluded that procedures OP-KW-OSP-TAV-001A (and B) allowed unqualified test equipment to be relied upon as the SR pressure boundary for both back up air bottle sets without declaring the respective EDG inoperable. The inspectors concluded this finding was associated with the Mitigating Systems Cornerstone.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, Mitigating Systems Screening Questions, dated June 19, 2012. The licensee evaluated the installed test equipment and hose connections and concluded their pressure rating exceeded that necessary to function as a pressure boundary; therefore, the inspectors answered "Yes" to Mitigating Systems Screening question number 1, and screened the finding as having very low safety significance (Green).

This finding has a cross-cutting aspect in the area of human performance, Resources, because the licensee did not assure that procedures were adequate to assure nuclear safety. Specifically, when the licensee performed a procedure change, which combined multiple procedures, the updated procedures OP-KW-OSP-TAV-001A (and B), contained updated steps that directed that the test equipment be installed on both back up air bottle sets simultaneously, instead of individually, without directing that the respective diesel be declared inoperable. (H.2(c)).

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

Contrary to the above, from October 16, 2012 to April 17, 2013, the licensee failed to ensure that activities affecting quality were prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances. Specifically, procedure OP-KW-OSP-TAV-001A, Revision 3 and procedure OP-KW-OSP-TAV-001B, Revision 2, which directed the leak rate testing of the diesel generator room ventilation damper back up air supplies, an activity affecting quality, allowed the performer to open SR pressure boundary valves and install test equipment on both back up air bottle sets without declaring the respective EDG inoperable. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as CR506633 and CR511747, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (**NCV 05000305/2013003-01, [Inadequate Procedure for Testing of the Diesel Room Ventilation Damper Actuator Back Up Air System]**).

The licensee revised both procedures to prevent both bottle sets from being tested at the same time while maintaining the respective diesel operable.

2. RADIATION SAFETY

Cornerstones: Occupational and Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

This inspection constituted one partial sample as defined in IP 71124.01-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed all licensee performance indicators for the occupational exposure cornerstone for follow-up. The inspectors reviewed the results of Radiation Protection Program audits (e.g., licensee's quality assurance audits or other independent audits). The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection. The inspectors reviewed the results of the audit and operational report reviews to gain insights into overall licensee performance.

b. Findings

No findings were identified.

.2 Radiological Hazard Assessment (02.02)

a. Inspection Scope

The inspectors determined if there have been changes to plant operations since the last inspection that may result in a significant new radiological hazard for onsite workers or members of the public. The inspectors evaluated whether the licensee assessed the potential impact of these changes and has implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard.

The inspectors reviewed the last two radiological surveys from selected plant areas and evaluated whether the thoroughness and frequency of the surveys were appropriate for the given radiological hazard.

The inspectors conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas to evaluate material conditions and performed independent radiation measurements to verify conditions.

The inspectors selected the following radiologically risk-significant work activities that involved exposure to radiation:

- reactor head lift and set;
- upper internal movement; and,
- removal and installation of transfer canal blank flange.

For these work activities, the inspectors assessed whether the pre-work surveys performed were appropriate to identify and quantify the radiological hazard and to establish adequate protective measures. The inspectors evaluated the Radiological Survey Program to determine whether hazards were properly identified, including the following:

- identification of hot particles;
- the presence of alpha emitters;
- the potential for airborne radioactive materials, including the potential presence of transuranics and/or other hard-to-detect radioactive materials. (This evaluation may include licensee-planned entry into non-routinely entered areas subject to previous contamination from failed fuel.);
- the hazards associated with work activities that could suddenly and severely increase radiological conditions and that the licensee has established a means to inform workers of changes that could significantly impact their occupational dose; and,
- severe radiation field dose gradients that can result in non-uniform exposures of the body.

b. Findings

No findings were identified.

.3 Instructions to Workers (02.03)

a. Inspection Scope

The inspectors selected various containers holding non-exempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers, and assessed whether the containers were labeled and controlled in accordance with 10 CFR 20.1904, "Labeling Containers," or met the requirements of 10 CFR 20.1905(g), "Exemptions To Labeling Requirements."

The inspectors reviewed the following radiation work permits used to access high radiation areas and evaluated the specified work control instructions or control barriers:

- 13-0268, Perform Functional Checks of Containment Sumps;
- 13-0256, Inspect/Lube/Adjust Containment Fuel Transfer System Components;
- 13-0254, Refueling Work on Reactor Head In and Around Reactor Cavity; and,
- 13-0251, Remove and Install blind Flange. Also, to Include Fuel Transfer System and Fuel Mast Gripper Checks.

For these radiation work permits, the inspectors assessed whether allowable stay times or permissible dose (including from the intake of radioactive material) for radiologically significant work under each radiation work permit were clearly identified. The inspectors evaluated whether electronic personal dosimeter alarm set-points were in conformance with survey indications and plant policy.

The inspectors reviewed selected occurrences where a worker's electronic personal dosimeter noticeably malfunctioned or alarmed. The inspectors evaluated whether workers responded appropriately to the off-normal condition. The inspectors assessed whether the issue was included in the corrective action program and dose evaluations were conducted as appropriate.

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.

b. Findings

No findings were identified.

.4 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors observed locations where the licensee monitors potentially contaminated material leaving the radiological control area and inspected the methods used for control, survey, and release from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures and whether the procedures were sufficient to control the spread of contamination and prevent unintended release of radioactive materials from the site. The inspectors assessed whether the radiation monitoring instrumentation had appropriate sensitivity for the type(s) of radiation present.

The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material. The inspectors evaluated whether there was guidance on how to respond to an alarm that indicates the presence of licensed radioactive material.

The inspectors reviewed the licensee's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters. The inspectors assessed whether or not the licensee has established a de facto "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high-radiation background area.

b. Findings

No findings were identified.

.5 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors evaluated ambient radiological conditions (e.g., radiation levels or potential radiation levels) during tours of the facility. The inspectors assessed whether the conditions were consistent with applicable posted surveys, radiation work permits, and worker briefings.

The inspectors evaluated the adequacy of radiological controls, such as required surveys, radiation protection job coverage (including audio and visual surveillance for remote job coverage), and contamination controls. The inspectors evaluated the licensee's use of electronic personal dosimeters in high noise areas as high radiation area monitoring devices.

The inspectors assessed whether radiation monitoring devices were placed on the individual's body consistent with licensee procedures. The inspectors assessed whether the dosimeter was placed in the location of highest expected dose or that the licensee properly employed an NRC-approved method of determining effective dose equivalent.

The inspectors reviewed the application of dosimetry to effectively monitor exposure to personnel in high-radiation work areas with significant dose rate gradients.

The inspectors examined the licensee's physical and programmatic controls for highly activated or contaminated materials (nonfuel) stored within spent fuel and other storage pools. The inspectors assessed whether appropriate controls (i.e., administrative and physical controls) were in place to preclude inadvertent removal of these materials from the pool.

The inspectors examined the posting and physical controls for selected high radiation areas and very high radiation areas to verify conformance with the occupational performance indicator.

b. Findings

No findings were identified.

.6 Risk-Significant High Radiation Area and Very High Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors discussed with the radiation protection manager the controls and procedures for high-risk high radiation areas and very-high radiation areas. The inspectors discussed methods employed by the licensee to provide stricter control of very high radiation area access as specified in 10 CFR 20.1602, "Control of Access to Very High Radiation Areas," and Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas of Nuclear Plants." The inspectors assessed whether any changes to licensee procedures substantially reduce the effectiveness and level of worker protection.

The inspectors discussed the controls in place for special areas that have the potential to become very high radiation areas during certain plant operations with first-line health physics supervisors (or equivalent positions having backshift health physics oversight authority). The inspectors assessed whether these plant operations require communication beforehand with the health physics group, so as to allow corresponding timely actions to properly post, control, and monitor the radiation hazards including re-access authorization.

The inspectors evaluated licensee controls for very high radiation areas and areas with the potential to become very high radiation areas to ensure that an individual was not able to gain unauthorized access to the very high radiation area.

b. Findings

No findings were identified.

.7 Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors observed radiation worker performance with respect to stated radiation protection work requirements. The inspectors assessed whether workers were aware of the radiological conditions in their workplace and the radiation work permit controls/limits in place, and whether their performance reflected the level of radiological hazards present.

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the radiation protection manager any problems with the corrective actions planned or taken.

b. Findings

No findings were identified.

.8 Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors observed the performance of the radiation protection technicians with respect to all radiation protection work requirements. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace and the radiation work permit controls/limits, and whether their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be radiation protection technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

4OA2 Identification and Resolution of Problems (71152)

.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: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and, that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included 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

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

These 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.

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

.1 (Closed) Licensee Event Report (LER) 05000305/2012-005-00; Both Safety Injection Trains Inoperable Due to Venting

This event, which occurred on June 27, 2012, safety injection trains A and B were declared inoperable due to venting of the common pump suction line and of the bypass line to remove a gas void discovered that same day. The venting was required due to the discovery of a large gas void in the suction piping. The inspectors verified that the licensee had actions in place to ensure both safety injection trains remained available for the 14 minute timeframe when the venting occurred. The performance deficiency associated with the creation of the gas void is addressed in Section 4OA7 of this report. Documents reviewed as part of this inspection are listed in the Attachment to this report. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

.2 (Closed) LER 05000305/2012-009-00; Missed Verification of Offsite Circuit Breaker Alignment and Power Availability

This event, which occurred on December 10, 2012, was a result of the licensee failing to complete a required TS completion time action to verify off site grid frequency because a page in the surveillance procedure used to perform the task was inadvertently omitted. The inspectors verified computer trends and determined that the acceptance criteria were met; therefore, this instance constituted a minor human performance error. Documents reviewed as part of this inspection are listed in the Attachment to this report. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

4OA5 Other Activities

.1 (Closed) Unresolved Item (URI) 05000305/2007011-04; Effects of Air Entrainment in Emergency Core Cooling System (ECCS) Pumps

This URI is related to an air void found between the containment sump suction supply valves SI 350A(B) and SI 351A(B) as documented in corrective action document 024797, "Potential for Air Void in Containment Sump Recirculation Suction Line," dated January 1, 2005. The licensee performed an evaluation that assessed the effects of an air void in the ECCS sump suction piping and eliminated the air void in the Spring 2011 outage. While reviewing the licensee's analysis, the inspectors determined that the licensee used computer software AIRDST (air distribution) to simulate air in the pipe. Because the use of this software for this application has not been approved by the NRC, the inspectors requested the assistance of the Office of Nuclear Reactor Regulation (NRR). This URI was opened pending review of the licensee's past operability analysis and information from the pump vendor.

Since the initiation of this URI, NRR is reviewing AIRDST and other methodologies used by licensees to determine if it is an adequate tool to evaluate air in pipes. Given the special circumstance of Kewaunee Power Station, it is unlikely NRR will have a conclusion on their assessment in the near future. This is also a past issue and does not impact plant operation from the Spring 2011 outage to the current time. In addition,

the reactor oversight process was ceased and the site transferred to the Decommissioning Inspection Program. Consequently, this URI requires no further review and will be administratively closed.

.2 (Closed) URI 05000305/2012005-05: Relay Room Carbon Dioxide Fire Suppression System and Control Room Envelope Potentially Affected by High Energy Line Break (HELB)

During the inspectors' review of a relay room carbon dioxide (CO₂) fire suppression system actuation failure, the inspectors identified that control cabinets for both the CO₂ fire suppression actuation system and the relay room ventilation damper ACC-22, are mounted on the outside of the SR east wall of the relay room and exposed to the turbine building. The control cabinets could be exposed to steam from a nearby 30-inch steam header if a crack were to develop. The inspectors were concerned that the potential existed to actuate the relay room CO₂ fire suppression system and/or cause one of the relay room ventilation dampers to open, complicating the control room response to the small steam break.

The licensee completed their evaluation of the inspectors concern and concluded that the HELB event effects, which included potential electrical shorts in the control cabinets for both the CO₂ fire suppression actuation system and the relay room ventilation damper ACC-22, could cause the repositioning of damper ACC-22 to the open position. The licensee did determine, however, that even with the damper ACC-22 open, the licensee would not have exceeded the regulatory requirements for control room habitability. The inspectors' review of the evaluation did not identify any findings. This URI is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

On June 25, 2013, the inspectors presented the inspection results to Mr. A. Jordan, Site Vice President, 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.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The inspection results for the area of radiological hazard assessment and exposure controls with S. Jordan, Site Vice President, on May 10, 2013.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

4OA7 Licensee-Identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

.1 Inadvertent Formation of Gas Void in Safety Injection Pump Suction Line

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

Contrary to the above, procedure OP-KW-NOP-FH-003, "Reactor Cavity Draining With Fuel or Upper Internals Installed," prescribed instructions for draining of the refueling cavity, in order to refill the refueling water storage tank in preparation for making the emergency core cooling system operable. However, the procedure was not appropriate to the circumstances because it did not prescribe that if procedure NSP-SI-004, "Monitoring SI System for Void After System Refill," was performed prior to the cavity draining to the RWST, that procedure NSP-SI-004 shall be re-performed to ensure the emergency core cooling system was free from voids, which could impact availability of the system. Consequently, on April 24, 2012, the licensee performed NSP-SI-004 and ensured the system was free of voids to ensure SI system availability and then completed draining of the refueling cavity to the refueling water storage tank in the emergency core cooling system. The system was not monitored for voids following the refueling water storage tank refill and on June 27, 2012, during the normally scheduled surveillance to perform testing to ensure the system was free of voids, the licensee discovered a 2.8 cubic-foot void near the common suction of the SI pumps.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of configuration control and affected the Cornerstone objective of ensuring the reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The risk associated with this issue was determined to be of very low safety significance (Green) because the finding was a deficiency affecting the qualification of a mitigating system and the system was operable but nonconforming. The licensee conducted full scale tests of the system, which demonstrated that the system was available with the gas void present for all accident conditions. The licensee entered this issue into the CAP as CR480150, "Gas Void in SI Pump Suction Piping," conducted an apparent cause evaluation and shared the operating experience with the industry.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

A. Jordan, Site Vice President
R. Simmons, Plant Manager
S. Yuen, Decommissioning Director
J. Stafford, Safety and Licensing Director
B. Harris, EP Manager
M. Hale, Radiation Protection Manager
J. Grau, Maintenance Manager
B. Gauger, Operations OMA
T. Olson, Engineering Director
M. Haese, Licensing
J. Madden, Engineering Manager
R. Repshas, Licensing Manager
J. Gadzala, Licensing Engineer

Nuclear Regulatory Commission

K. Riemer, Branch Chief, Reactor Projects Branch 2
A. Stone, Acting Deputy Director, Division of Nuclear Material Safety

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000305/2013003-01	NCV	Inadequate Procedure for Testing of the Diesel Room Ventilation Damper Actuator Back Up Air System (Section 1R22.1)
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Closed

05000305/2013003-01	NCV	Inadequate Procedure for Testing of the Diesel Room Ventilation Damper Actuator Back Up Air System (Section 1R22.1)
05000305/2012-005-00	LER	Both Safety Injection Trains Inoperable Due to Venting (Section 4OA3.1)
05000305/2012-009-00	LER	Missed Verification of Offsite Circuit Breaker Alignment and Power Availability (Section 4OA3.2)
05000305/2007011-04	URI	Effects of Air Entrainment in ECCS Pumps (Section 4OA5.1)
05000305/2012005-05	URI	Relay Room Carbon Dioxide Fire Suppression System and Control Room Envelope Potentially Affected by HELB (Section 4OA5.2)

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1R05 Fire Protection

- Drawing E-2440; Fire Detection System, Screenhouse And Tunnel; Revision H
- Drawing E-2441; Fire Detection System, Turbine And Administration Building Basement Floor; Revision V
- Drill Acceptance Criteria/Expectations For Drill 2013-15
- Fire Protection Program Analysis; Fire Zone Summary: AX-23B Reactor Auxiliaries North Center; Revision 10
- Fire Protection Program Analysis; Fire Zone Summary: AX-30 Relay Room; Revision 10
- Fire Protection Program Analysis; Fire Zone Summary: TU-95B Safeguards Alley; Revision 10
- OP-KW-AOP-FP-001; Abnormal Operating Procedure – Fire; Revision 6
- PFP-22; Residual Heat Removal (RHR) Hx Area, Component Cooling Water Pump Area, Letdown And SealWater Filter Area, And RWST And Valve Gallery; Revision E
- PFP-9; 480V Switchgear Bus I-61 And I-62 Room And AFW Pump Area; Revision D
- SA-KW-FPP-010; Fire Drill Evaluation / Critique Form For Drill 2013-15; April 10, 2013

1R11 Licensed Operator Regualification Program

- CR502039; Vibrations On Service Water Pump A2
- CR509074; Lessons Learned During Monthly Diesel Generator B Run
- OP-AA-100; Conduct Of Operations; Revision 19
- OP-AA-1500; Operational Configuration Control; Revision 8
- OP-KW-NOP-RCS-005; Draining The Reactor Coolant System; Revision 17
- OP-KW-ORT-DGM-002; TSC Diesel Generator Monthly Availability Test; Completed April 29, 2013

1R12 Maintenance Effectiveness

- A1G000331; Track System 39 EHV (4160VAC) Return To RM (a)(2) Status – Protection Relays
- ACE 019150; High Resistance On 86 Lockout Relay Contacts;
- Calculation C11015; Appendix R Associated Circuit Protective Device Review – Tables 10 And 11
- Cause Evaluation Downgrade Template For ACE19447
- CR114972; High “As Found” Contact Resistance Readings Found On Type MG-6, 86 Relay
- CR503809; As Found Resistance On Three Contacts Was High For 86/1-608BKR SW1B1
- Drawing E-235; 480V Swgr. Safeguard Buses; Revision AL
- Drawing E-244; Generator And 4160V Equipment; Revision AJ
- ETE-KW-2013-003; Evaluation Of The Effects Of A Turbine Building Main Steam HELB On Control Room Exhaust Damper ACC-22 And Relay Room CO₂ Fire Protection Components; April 15, 2013
- KPS Appendix R Design Description 5.2.2; Fire Induced Failure Mechanisms; Revision 9
- KPS Appendix R Design Description 5.6; Revision 9

- KPS Q-LIST Project; System 24 – Control Room Air Conditioning (ACC); July 20, 2010
- KPS Vendor Technical Manual; Type MG-6 Multi-Contact Auxiliary Relay; December 2009
- Maintenance Rule Expert Panel Meeting Minutes; June 28, 2012
- Maintenance Rule Scoping Questions; Stem No. 39, 4160 V Electrical Supply And Distribution
- Maintenance Rule System Basis; Revision 6; May 1, 2013
- MRE015091; 86/1-102BKR Relay Had High Contact Resistance When Closed
- MRE015278; For High Contact Resistance Identified With Respect To Lockout Relay 86/1-507BKR
- MRE015433; For 86/1-506 BKR Relay Contact Resistance Found High
- MRE015574; MRE For As Found Resistance For 86/1-502BKR For 1A RHR Pmp Mtr
- MRE015802; 1B SI Pump Motor Lock-Out Relay Contact High Resistance/Discolored Insulation
- MRE016096; For As Found Resistance On Three Contacts Was High For 86/1-608BKR SW1B1
- OD No. 00456; SSC Affected By The Degraded Or Non-Conforming Condition; October 14, 2011
- OP-KW-AOP-EHV-006; Loss Of 4160V Bus 6; Revision 12
- OP-KW-AOP-FP-003; Fire in dedicated Fire Zone; Revision 10
- OP-KW-AOP-FP-02; Fire In Alternate Fire Zone; Revision 13
- OP-KW-ARP-47092-J; Bus 6 Lockout; Revision 0
- SSC Performance Criteria Sheet; System No. 39 4160 VAC; May 1, 2013

1R13 Maintenance Risk Assessments and Emergent Work Control

- Scheduler's Evaluation For Kewaunee On-Line Schedule; April 5 And February 27, 2013
- WM-AA-100; Work Management; Revision 17
- WM-AA-20; Risk Assessment Of Maintenance Activities; Revision 1
- WM-AA-301; Operational Risk Assessment; Revision 8

1R15 Operability Determinations and Functional Assessments

- CR511510; 1B ABFF Fan Coil Unit Fan Is Operating At A Higher Speed Than Original Design
- CR513467; Acrid Smell coming From CC Pump B Fan Coil Unit
- CR513945; Missed Opportunity For Thorough Documentation Of Functionality In CR513467
- Kewaunee Nuclear Power Plant; Appendix R; Design Description; Revision 9
- KPS USAR 9.3; Auxiliary Coolant System; Revision 24; November 13, 2012

1R19 Post-Maintenance Testing

- Candidate Selection; May 2, 2013
- CR502555; STF Air Compressor 1A Is Not Producing Air
- CR505012; Unexpected Time Results During PMT Of 62/RBVTD Relay Replacement In RR143
- ER-KW-DEC-PRS-1010; Interim Supplemental Guidance For KPS Post Shutdown Preventative Maintenance; Revision 0
- OP-KW-NOP-DGM-001A; Diesel Generator A Remote Operation; Revision 11; Completed May 14, 2013
- SJIT Candidate Discussion For May 2
- WO KW100800570; PM10-042: 24 Month Inspection – Diesel Generator 1A

1R20 Outage Activities

- Calculation No. C12026; Kewaunee Offload Specific SFP Heat Removal Calculation For Cycle 32; February 7, 2013
- CR514941; RCS Drain Down Temporarily Suspended For Head Venting IAW NOP-RCS-005
- CR515077; RCS Drain Down Temporarily Stopped Due To Loss Of RVLIS (Train B)
- Daily Log; Various Dates May 7 To May 13, 2013
- E-0; Reactor Trip Or Safety Injection' Revision 45
- EN 49026; Service Water System Effluent Line Declared Non-Functional; May 12, 2013
- Generic Letter Commitment Validation; Attachment 8; May 23, 2005
- ICP-36-61; RC – Filling And Venting Reactor Coolant System Instrumentation; Revision 11
- Kewaunee ONLINE Production Project; 1320 EDG-A Bundled Activity; May 14, 2013
- KPS 2013 Operations Outage Schedule (Day Shift); Revised April 10, 2013
- KPS COPY 4/10/13 Final Shutdown Schedule, Critical Path; April 10, 2013
- KPS EOM Turnover – Night Shift To Day Shift; Outage Day 06; May 13, 2013
- KPS Fire Brigade Schedule For Security Force; May 6 To May 18, 2013
- KPS FME Plan For The Spent Fuel Pool (SFP), SFP Canal, And The New Fuel Storage Vault; March 1, 2013
- KPS Maintenance Department Schedule
- KPS Refueling Outage 33; Shutdown Safety Assessment Report; Revision 1; April 23, 2013
- MA-AA-102; Foreign Material Exclusion; Revision 12
- MA-K2-MRF-RXH-012; Reactor Pressure Vessel Head Installation
- MA-KW-ICP-RC-011; Pressurizer Level Cold Calibration Loop 433 Calibration; Revision 0
- MA-KW-ISP-RC-196A; Refueling Water Level Indication System Transmitter Calibration, System No. 36; Revision 0
- NF-KW-RRF-014; Fuel Movement During A Refueling Outage; Revision 18
- NF-KW-RRF-014; Fuel Movement During A Refueling Outage; Revision 18
- NRC-90-12; Letter From Wisconsin Public Service To NRC; Subject: Response To Generic Letter 88-17; January 30, 1990
- N-RHR-34C-CL; Requirements For Entering Reduced Inventory Checklist; Revision 10
- OP-AP-300; Reactivity Management; Revision 15
- OP-KW-GOP-202; Shutdown From RHR To MODE 5; Revision 16
- OP-KW-GOP-203; Shutdown From MODE 3 To RHR; Revision 23
- OP-KW-GOP-204; Shutdown From MODE 2 To MODE 3 (Reactor Shutdown); Revision 9
- OP-KW-GOP-205; Shutdown From 35% Power To Mode 2; Revision 12
- OP-KW-GOP-205; Shutdown From 35% Power To MODE 2; Revision 12
- OP-KW-GOP-307; Hold At Power Greater Than 35%; Revision 13
- OP-KW-NCL-SI-001; Safety Injection System Prestartup Checklist; Revision 0
- OP-KW-NOP-BT-001; Steam Generator Blowdown System Operation; Revision 9
- OP-KW-NOP-CRD-001; Control Rod Operation And Monitoring; Revision 4
- OP-KW-NOP-CRD-002; Control Rod Drive System; Revision 3
- OP-KW-NOP-CVC-001; Boron Concentration Control; Revision 33
- OP-KW-NOP-CVC-002; Charging And Volume Control; Revision 13
- OP-KW-NOP-EHV-001; 4160V AC Supply And Distribution System Operation; Revision 16
- OP-KW-NOP-FW-001; Feedwater System Normal Operation; Revision 15
- OP-KW-NOP-HD-001; Heater And Moisture Separator Drain And Bleed Steam System; Revision 6
- OP-KW-NOP-MS-001; Main Steam And Steam Dump System; Revision 15
- OP-KW-NOP-RHR-001; Residual Heat Removal System Operation; Revision 22
- OP-KW-NOP-SER-001; Control Room Sequential Event Recorder; Revision 1
- OP-KW-NOP-SUB-003; RST And TST Load Tap Changer Operation; Revision 10

- OP-KW-NOP-TB-001; Turbine And Generator Operation; Revision 20
- OP-KW-ORF-FH-001; KPS Refueling; Revision 24
- OP-KW-ORT-MISC-015; MODE 3 Containment Walkdown; Completed May 7, 2013
- OP-KW-OSP-MISC-002; Electrical Power System Weekly Surveillance Test; Revision 14
- OP-KW-OSP-RCS-004; Reactor Coolant System Vent Pathway Verification; Revision 1
- OU-KW-201; Shutdown Safety Assessment (SSA) Checklist; Completed Various Dates May 7 To May 13, 2013
- OU-KW-201; Shutdown Safety Assessment (SSA) Checklist; Revision 14
- RD 11.2.10; Full Core + SFP Decay Heat Curve; Revised May 8, 2013
- RE-24; Special Nuclear Materials Control; Completed May 14, 2013
- Reactivity Plan; April 18, 2013
- RF-02.05; Reactor Cavity Seal Ring Installation And Removal; Performed May 10, 2013
- SEG# LRC-13-JT201; Pre KR Final Outage JITT; April 30, 2013
- TS 3.8.2; AC Sources – Shutdown; Amendment No. 207; February 2, 2011
- TS 3.9.1; Boron Concentration; Amendment No. 207; February 2, 2011
- TS 4.0; Design Features; Amendment No. 207; February 2, 2011

1R22 Surveillance Testing

- 50.59 Applicability Review For KW-10-01101-000, Modify EDG Ventilation; February 15, 2011
- Calculation No. C11965, Addendum A; Method For Determining Emergency Diesel Generator Ventilation Damper Operating Time After Loss Of Instrument Air; January 20, 2012
- Calculation No. C11965; Method For Determining Emergency Diesel Generator Ventilation Damper Operating Time After Loss Of Instrument Air; February 25, 2011
- CECOR Code Version 3.2; April 10, 2013
- CR427800; EDG A DC Ammeter 55207 Reads 0 With EDG Running
- CR501355; Siren K003, K007, And K009 Scheduled Siren Test Failure
- CR502039; Vibrations On Service Water Pump A2
- CR503217; A EDG RPM Meter Not Reading In Control Room
- CR506633; NRC Questioned Non-Safety Related Components Attached To A Safety Related System
- CR511301; Cracked Weld On EDG A Air Filter Support Leg
- CR511747; Place Procedures KW-OSP-TAV-001A And B On Admin Hold
- Design Change KW-10-01101; EDG Ventilation Air Supply Modification (Capital); Completed April 7, 2011
- Drawing OPERM-213-13; Station And Instrument Air System, Diesel Generator A And B Ventilation Damper; Revision B
- Incore Flux Map Place Keeper HU Tool; Flux Map No. 3217; April 10, 2013
- MA-KW-EPM-DGE-008; Train B Auto Sequencing Test With Diesel B In Pullout; Revision 5
- MA-KW-ICP-DGM-022; Diesel Generator A Damper Back-Up Bottle Pressure Switch And Pressure Indicator Calibration; Revision 0
- MA-KW-ICP-ICE-168; ICE – Heise PTE-1 And HQS; Completed September 10 And November 2, 2012
- MA-KW-ICP-ICP-168; Heise PTE-1 Calibrator And HQS-2 Pressure Module Calibration; Completed February 14, 2013
- OP-KW-ORT-DGM-001A; Emergency Diesel Generator 1A Operation Log; Revision 13; Completed April 15, 2013
- OP-KW-ORT-DGM-001B; Emergency Diesel Generator 1B Operation Log; Revision 15; Completed April 22, 2013
- OP-KW-ORT-DGM-001C; TSC Diesel Generator Operation Log; Revision 6; Completed May 28, 2013

- OP-KW-ORT-DGM-002; TSC Diesel Generator Monthly Availability Test; Revision 18; Completed May 28, 2013
- OP-KW-ORT-SW-003; SW-4A Accumulator Leak Rate Test; Revision 6
- OP-KW-OSP-DGE-001A; Diesel Generator A Monthly Availability Test; Revision 18; Completed April 15, 2013
- OP-KW-OSP-DGE-001B; Diesel Generator B Monthly Availability Test; Revision 18; Completed April 22, 2013
- OP-KW-OSP-TAV-001A; Diesel Generator A Back Up Air Supply Leak Rate Test; Revision 3; Completed November 29, 2012
- OP-KW-OSP-TAV-001B; Diesel Generator B Back Up Air Supply Leak Rate Test; Revision 2; Completed February 27, 2013
- OP-KW-OSP-TAV-002A; Diesel Generator A Back Up Air Supply Leak Rate Test; Revision 7
- RE-01; Flux Mapping At Power; Revision 28; Completed April 10, 2013
- Revision Of Reactor Data Manual; April 10, 2013
- SP-48-045; Nuclear Power Range Axial Offset Check; Revision 24; April 10, 2013
- SP-48-132; Hot Channel Factor Determination; Revision 34; April 10, 2013
- Tracking and Processing Record For OP-KW-OSP-TAV-001/002 A/B, Current Revision 7 To New Revision 8; March 30, 2012
- Tracking and Processing Record For OP-KW-OSP-TAV-001A, Current Revision 2 To New Revision 3; October 12, 2012
- TRM 8.8.3; Emergency Diesel Generator (EDG) Ventilation Damper Control Air Supply; Revision 1

2RS1 Radiological Hazard Assessment and Exposure Controls

- CR505301; PM-7 Alarm At RPO Monitor
- CR510720; Locked High Radiation Area Key Not Controlled By Worker; April 10, 2013
- RP-AA-201; Access Controls For High And Very High Radiation Areas; Revision 6
- RP-AA-202; Radiological Posting; Revision 6
- RP-AA-221 Attachment B; Radiological Survey Record; Various Dates
- RP-AA-232; Radioactive Material Control; Revision 4
- Radiation Work Permit (RWP) 13-0251; Remove And Install Blind Flange. Also To Include Fuel Transfer System And Fuel Mast Gripper Checks; Revision 1
- RWP 13-0254; Refueling Work On Reactor Head In And Around Reactor Cavity; Revision 0
- RWP 13-0256; Inspect/Lube/Adjust Containment Fuel Transfer System Components; Revision 0
- RWP 13-0268; Perform Functional Checks Of Containment Sumps "A", "B", and "C"; Revision 0

4OA2 Identification and Resolution of Problems

- CR Process Flowchart-KPS Defueled; Revised April 23, 2013

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

- ER-KW-NSP-SI-004; Monitoring SI System For Voids After System Refill; Revisions 0 And 2
- OP-KW-MOP-SI-002; Safety Injection System Fill And Vent Following Maintenance; Revisions 4 And 7
- OP-KW-NOP-FH-003; Reactor Cavity Draining With Fuel Or Upper Internals Installed; Revision 5

4OA5 Other Activities

- CAP 024797; Potential for Air Void in Containment Sump Recirculation Suction Line
- Kewaunee Nuclear Power Plant Evaluation of Effects of Void Between the ECCS Sump Isolation Valves; May 30, 2006

NRC-Identified Condition Reports

- CR509751; NRC RI Question Regarding Timeliness Of Corrective Action Regarding App R PEN752
- CR510006; Proposed NRC NCV 1Q13 NRC Inspection – No Fixed Fire Suppression In CR HVAC Area
- CR510007; Proposed NRC NCV 1Q13 NRC Inspection – Non-Conservative TS For Ultimate Heat Sink
- CR510008; Proposed NRC NCV 1Q13 NRC inspection – BRD-109 Not Identified In Daily Risk Model
- CR510033; NRC Identified Step To Be Placed Into EVD Monthly
- CR510222; NRC Resident Identified TEST Light out On Relay Rack
- CR510906; Rain Water Leaking Near Most Southwest Roof Damper
- CR511747; Place Procedures KW-OSP-TAV-001A And B On Admin Hold
- CR513618; NRC Resident Identified Procedure Use And Adherence Expectation
- CR513830; The NRC Questioned The QA Classification Of The Fire Dampers For The B CCW Pump
- CR513945; Missed Opportunity For Thorough Documentation Of Functionality In CR
- CR514887; SI-15A Manual Engage Lever Position In Question
- CR515150; NRC Resident Bumped Valve RC-24032-3 While Exiting Pressurizer Vault
- CR515798; NRC Identified Concerns On FME Controls During The RV Head Set On 5/14/2013

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CRD	Control Rod Drive
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
FP	Fire Protection
HELB	High Energy Line Break
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
KPS	Kewaunee Power Station
LER	Licensee Event Report
MG	Motor-Generator
NCV	Non-Cited Violation
NRC	U.S. Nuclear Regulatory Commission
NSR	Non-safety Related
OSP	Outage Safety Plan
PARS	Publicly Available Records System
PMT	Post-Maintenance Testing
QA	Quality Assurance
RHR	Residual Heat Removal
RWP	Radiation Work Permit
SDP	Significance Determination Process
SSC	Systems, Structures, and Components
SR	Safety Related
SW	Service Water
TS	Technical Specification
URI	Unresolved Item
USAR	Updated Safety Analysis Report
WO	Work Order

D. Heacock

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If you disagree with a cross-cutting aspect assignment 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 Kewaunee Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and 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 Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA by Nirodh Shah for/

Kenneth Riemer, Branch Chief
Branch 2
Division of Reactor Projects

Docket No: 50-305
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Letter to D. Heacock from K. Riemer dated July 12, 2013

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REPORT 05000305/2013003

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ROPreports.Resource@nrc.gov