



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

July 21, 2010

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  
05000305/2010003**

Dear Mr. Heacock:

On June 30, 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 July 7, 2010, 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, one NRC-identified finding of very low safety significance was identified. However, because of the very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation (NCV) in accordance with Section VI.A.1 of the NRC Enforcement Policy. Additionally, one licensee-identified violation is listed in Section 4OA7 of this report.

If you contest the subject or severity of this NCV, 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.

D. Heacock

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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/ By John Jandovitz Acting For/***

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

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

Enclosure: Inspection Report 05000305/2010003  
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: 05000305/2010003

Licensee: Dominion Energy Kewaunee, Inc.

Facility: Kewaunee Power Station

Location: Kewaunee, WI

Dates: April 1, 2010, through June 30, 2010

Inspectors: R. Krsek, Senior Resident Inspector  
K. Barclay, Resident Inspector  
R. Edwards, Reactor Engineer  
J. Jandovitz, Project Engineer  
A. Dahbur, Senior Reactor Inspector

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

Enclosure

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## SUMMARY OF FINDINGS

IR 05000305/2010003; 04/01/2010 – 06/30/2010; Kewaunee Power Station; Adverse Weather Protection.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One Green finding was identified by the inspectors. The finding was not considered a violation 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: Mitigating Systems**

- Green. A finding of very low safety significance was identified by the inspectors for an inadequate operability determination performed for the emergency diesel generators. Specifically, the licensee used TORMIS, a computer code and probabilistic-based methodology, for assessing tornado missile protection and confirming operability of their emergency diesel generator fuel oil day tank vents and storage tank vents. Probabilistic risk assessments were not allowed for confirming operability under both NRC guidance and the licensee's procedures. The licensee entered this issue into their corrective action program as condition report 347741, performed a causal evaluation and took compensatory measures until modifications were complete in September 2009.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of protection against external events and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the closure of the emergency diesel generator fuel oil day tank or storage tank vent path as a result of tornado-generated missile striking the vent lines would adversely affect the availability, reliability, and capability of the emergency diesel generators. 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," Table 4a for the Mitigating Systems Cornerstone. The inspectors answered "no" to the Mitigating Systems questions and screened the finding as having very low significance (Green). The inspectors did not identify a cross-cutting aspect associated with this finding. (Section 1R01.1)

### 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 entire 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 Readiness for Impending Weather Condition – Tornado Watch

###### a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility on April 30, 2010, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to mitigate or respond to tornados and high winds. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. 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. Specific documents reviewed during this inspection are listed in the Attachment to this report. 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 the CAP in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the offsite power systems.

This inspection constituted one readiness for impending adverse weather condition sample as defined in Inspection Procedure (IP) 71111.01-05.

###### b. Findings

##### Inappropriate Use of a Probabilistic Methodology in an Operability Determination

Introduction: A finding of very low safety significance was identified by the inspectors for an inadequate operability determination performed for the emergency diesel generators (EDGs). Specifically, the licensee used TORMIS, a computer code and probabilistic based methodology, for assessing tornado missile protection and confirming operability of the emergency diesel generator fuel oil day tank vents and storage tank vents. Probabilistic risk assessments were not allowed for confirming operability under both NRC guidance and the licensee's procedures.

Description: During a high wind/tornado seasonal readiness preparations inspection, the inspectors found that the EDG fuel oil storage and day tank vents were all in close

proximity and not tornado missile protected. The inspectors reviewed the licensee's operability evaluation for the vent lines and found that the licensee was using the TORMIS methodology to justify operability until completion of a modification to correct the deficiency. The TORMIS methodology used a probabilistic risk approach and the inspectors questioned why it was using this method without an amendment. Regulatory Issue Summary (RIS) 2005-20, "Revision to NRC Inspection Manual Part 9900 Technical Guidance, Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," stated, in part, the use of probabilistic risk assessments or probabilities of occurrence of accidents or external events was not acceptable for making operability decisions. Unresolved Item (URI) 05000305/2009003-01 was opened in the second quarter of 2009 pending resolution with the Office of Nuclear Reactor Regulation (NRR).

The inspectors consulted with technical staff of NRR, who determined that TORMIS was not appropriate for use in operability determinations and on September 9, 2009, on a conference call with NRR and the inspectors, the licensee was informed of the NRC staff's position. The licensee performed a prompt operability determination, which concluded that the system was operable but nonconforming, and put in place compensatory measures until a design change was completed. The design change was completed on September 23, 2009, and provided multiple vent locations that ensured the needed separation between vents to preclude a tornado missile strike from affecting both diesel trains.

Analysis: The inspectors determined that the licensee's use of a probabilistic based methodology for confirming operability in its operability determination OBD 135, "EDG Exhaust Duct Operability," and later in OD 169, was contrary to the licensee's procedures, as well as NRC guidance, and was a performance deficiency. The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of protection against external events and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the closure of the EDG fuel oil day tank or storage tank vent path would adversely affect the availability, reliability, and capability of the emergency diesel generators. 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," Table 4a for the Mitigating Systems Cornerstone. The inspectors answered "no" to the Mitigating Systems questions and screened the finding as having very low significance (Green). The inspectors did not identify a cross-cutting aspect associated with this finding.

Enforcement: No violation of regulatory requirements occurred (FIN 05000305/2010003-01, Inappropriate Use of a Probabilistic Methodology in an Operability Determination).

The licensee entered this issue into their corrective action program, as condition report (CR) 347741, and took compensatory measures until modifications were complete on September 23, 2009.

## .2 Readiness of Offsite and Alternate AC Power Systems

### a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and alternate alternating current (AC) power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- The coordination between the TSO and the plant during off-normal or emergency events;
- The explanations for the events;
- The estimates of when the offsite power system would be returned to a normal state; and
- The notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

- The actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- The compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;
- A re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- The communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

Documents reviewed are listed in the Attachment to this report. The inspectors also reviewed CAP items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into the CAP in accordance with station corrective action procedures.

This inspection constituted one readiness of offsite and alternate AC power systems sample as defined in IP 71111.01-05.

### b. Findings

No findings of significance were identified.

## 1R04 Equipment Alignment (71111.04)

### .1 Quarterly Partial System Walkdowns

#### a. Inspection Scope

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

- 4160-Volt busses 5 and 6 and the associated 480-Volt busses;
- 125-Volt direct current system busses; and
- turbine building ventilation system.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, USAR, Technical Specification (TS) requirements, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment 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. Lastly, the inspectors verified the licensee entered the issues into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

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

#### b. Findings

No findings of significance were identified.

### .2 Semi-Annual Complete System Walkdown

#### a. Inspection Scope

The inspectors performed a complete system alignment inspection of the service water 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 line-ups, electrical power availability, system pressure and temperature indications, and as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, 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 work orders (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.

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

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- fire zone AX-20, steam generator blowdown tank room;
- fire zone AX-21, 4160-Volt switchgear room;
- fire zone AX-33, condensate and makeup water tank room;
- fire zone AX-36, turbine building and auxiliary building heating, ventilation, and air conditioning rooms;
- fire zone AX-37, control rod drive equipment room;
- fire zone TU-95A, dedicated shutdown panel room; and
- fire zone TC-102, technical support center non-safeguards battery and electrical equipment room.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that: adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and implemented adequate compensatory measures for out-of-service, degraded, or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan.

The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional risk insights, or their potential to impact equipment which could initiate or mitigate a plant transient. The inspectors verified that: fire hoses and extinguishers were in their 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 seven quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On April 26, 2010, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to 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 of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

The inspectors evaluated degraded performance issues for the service water train "B" and the plant process computer system.

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 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 two quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

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

- April 12;
- April 19;
- April 26;
- May 3;
- May 17;
- May 24; and
- June 14.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and

walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- CR 376650, spent fuel pool heat exchanger results;
- CR 376891, delta-temperature converter summing amplifier;
- CR 378573, “B” emergency diesel generator did not stop when control switch was placed to stop;
- CR 377954, work order needed for repair of bubbler tube for “1A” emergency diesel generator fuel tank; and
- CR 375626, “1A” residual heat removal fan coil unit found to have a degraded fan bearing.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and USAR to the licensee’s evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed temporary modification 2010-03, "Leak repair of valve MS-3B-23."

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 system. 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 operation of the modifications did not impact the operability of any interfacing systems. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one temporary modification sample as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

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:

- reactor protection system summing amplifier replacement;
- technical support center diesel generator following battery replacement;
- internal containment spray pump valve ICS-2B following maintenance;
- traveling water screen train "B" differential pressure indication system following maintenance;
- residual heat removal pump "B" following maintenance; and
- signal converter TM-4033BB for the reactor protection system following replacement.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was

returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against 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 their importance to safety. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance 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 testing was conducted in accordance with applicable procedural and TS requirements:

- biennial auxiliary feedwater system testing conducted under procedure SP-05B-283A (routine);
- biennial turbine-driven auxiliary feedwater testing conducted under procedure SP-05B-284 (routine);
- steam exclusion train "B" testing conducted under SP-14-315B (routine);
- engineered safeguards train "B" logic system testing conducted under SP-55-155B (routine); and
- component cooling water train "A" pump and valve testing conducted under SP-31-168A (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, American Society of Mechanical Engineers 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 safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on June 29 to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Technical Support Center to determine whether the event classification and notifications were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering

them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator (PI) Verification (71151)

.1 Mitigating Systems Performance Index - Heat Removal Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Heat Removal System PI for the first quarter 2009 through the first quarter 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, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC inspection reports to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 MSPI heat removal systems sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems PI for the first quarter 2009 through the first quarter 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 operator narrative logs, issue reports, MSPI derivation reports, event reports, and NRC inspection reports to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent since the previous inspection, and

if so, that the change was in accordance with applicable NEI guidance. 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 MSPI cooling water systems sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

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

.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 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 attached List of Documents Reviewed.

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 of significance 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 condition report packages.

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

b. Findings

No findings of significance 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 40A2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six-month period of October 2009 through March 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 component mispositions in 2009. Specifically, the licensee's fall 2009 refueling outage had eight mispositions. The licensee had identified the outage 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 identified an increased number of status indicating lights not lit for certain safety-related 4160-Volt breakers, 480-Volt breakers, and dedicated shutdown panel fuse light indications in the field. The licensee initiated corrective actions and documented these minor violations as CR 38746 and CR 384994.

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

b. Findings

No findings of significance were identified.

.4 Selected Issue Follow-Up Inspection: Main Feedwater Flow Control Valve Oscillations

a. Inspection Scope

During a review of items entered in the licensee's CAP, the inspectors recognized a corrective action item documenting increasing oscillations of the main feedwater flow control valves. The inspectors recalled similar problems after the most recent refueling outage. The inspectors reviewed the appropriateness of the previous corrective actions.

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

b. Findings

No findings of significance were identified.

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

.1 Loss of Safety Parameter Display System (SPDS) Due to Computer Problems

a. Inspection Scope

The inspectors reviewed the plant's response to the identified loss of the SPDS on April 30, when the plant computer group identified that the SPDS stalled and was not updating computer points as required. The SPDS supplies data to several emergency response data system points, and redundant and normal control room indications were available to the operators in the control room. The event was reported as a 10 CFR 50.72(b)(3)(xiii) event notification, within the required timeframe following discovery on April 30. Documents reviewed in this inspection are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.2 (Closed) Licensee Event Report (LER) 05000305/2009-007-00: Inadequate Station Procedures for Testing Containment Vacuum Breaker System

On April 21, 2009, the licensee identified that the procedures for testing containment vacuum relief valves were not adequate to ensure that the TS requirements were met, subsequently leading to a violation of TS requirement 3.0, "Limiting Conditions for Operation." Specifically, Procedures SP-55-167-11A and SP-55-167-11B, "Containment Vacuum Breaker Tests (IST) – Train A and B," tested containment vacuum relief valves VB-10A and VB-10B in both the open and closed safety function positions; however, the procedural guidance did not prescribe which TS was entered if the valve failed to open or close. The containment vacuum relief valves were unique, in that, they had a safety function to maintain containment system integrity (TS 3.6.a) requirements in the open direction and containment isolation requirements (TS.3.6.b) in the closed direction.

Therefore, if the valves were closed and deactivated due to a test failure, the containment isolation functions of TS 3.6.b.3.A.1 were met; however, the TS also required entry into TS 3.6.a, which required containment integrity via the vacuum relief function of containment at all times. Since T.S 3.6.a did not have an associated action statement and the condition was not met, shutdown of the plant in accordance with TS 3.0.c should have commenced.

A review of operating history identified that on October 1, 2008, containment vacuum relief valve VB-11B did not reposition when the control room switch was activated. In accordance with TS 3.6.b.3.A.1, vacuum relief valve VB-10B was closed and deactivated for a five-day period until repairs were made. Once valve VB-11B was closed and deactivated, the containment relief function was rendered inoperable on the "B" train and TS 3.6.a was not met; therefore, shutdown of the plant in accordance with TS 3.0.c should have commenced.

The licensee entered this issue into the corrective action program as CR 331702. The licensee performed a causal analysis and implemented corrective actions that included revision of the subject procedures, a review of the lessons-learned with all operating crews, and actions to ensure that the Kewaunee improved TS license amendment request addressed these concerns.

The violation was of very low safety significance (Green) and met the criteria of the NRC Enforcement Policy for being dispositioned as a licensee-identified NCV (see Section 4OA7.1 of this report).

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.

.3 (Closed) LER 05000305/2006-004-00 and 05000305/2006-004-01:  
Incorrect Assumption Regarding De-Rating of Emergency Diesel Generators During  
Periods of Increased Outside Ambient Temperatures

On July 14, 2006, the licensee issued the LER for an incorrect assumption regarding de-rating of the EDG during loaded operation. The licensee identified that the maintenance temperature curves associated with the EDGs had been incorrectly interpreted in the past, and there were certain periods of time during warm weather that the EDGs, if called upon to function, would have exceeded the vendor recommended rating of the EDG based on the increased outside ambient temperatures. Further evaluation and discussion by the licensee with the vendor and the vendor manufacturer's owners group after July 2006 identified that the licensee had still been incorrectly interpreting the EDG de-rating curves. In November 2006, NRC inspectors identified that even with the new correct interpretation of the EDG de-rating curves, the EDGs would periodically not have been able to meet the 18-month TS load test for periods of warm weather.

The licensee supplemented the original LER on December 28, 2006, to reflect the correct understanding and interpretation of the EDG de-rating curves. On January 26, 2007, NRC Inspection Report 05000305/2006016 (DRS) was issued with Non-Cited Violation (NCV) 05000305/2006016-002 and an associated Green finding for

the performance deficiencies associated with the failure to identify the EDG air intake temperature limitations impact upon the ability to meet TS Surveillance Requirements. Following that inspection report, several open questions remained regarding the ability of the EDGs to perform the safety function based on the EDG de-rating curves and past operability assessments. The inspectors reviewed all the available information, including condition reports, the past operability assessments associated with both EDGs, and additional performance deficiencies as described in LER 05000305/2007-003, 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.

.4 (Closed) LER 05000305/2007-003-00: Emergency Diesel Generator Design Loading Calculations Non-Conservative

On April 4, 2007, the licensee issued an LER for potential EDG inoperability based on potential additional loads identified that could result in loading for both EDGs in excess of the 18-month TS surveillance loading based on engine rating curves at elevated temperatures. The licensee further evaluated this issue and on June 29, 2007, issued a withdrawal of the subject LER based on further analysis. On June 1, 2007, NRC Inspection Report 05000305/2007006 (DRS) was issued with NCV 05000305/2007006-013 and an associated Green finding for the EDG loading calculations being non-conservative. The inspectors reviewed all the available information, including condition reports and the past operability assessments associated with both EDGs, 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.

40A5 Other Activities

.1 (Discussed) 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 pending resolution with the technical staff of NRR on whether the TORMIS methodology was appropriate for use in operability determinations without a site specific license amendment. The NRR staff determined that TORMIS was not appropriate for use in operability determinations and on September 9, 2009, on a conference call with NRR and the inspectors, the licensee was informed of the NRC staff's position. See Section 1R01.1, "Adverse Weather Protection," for details concerning this finding.

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, while now tornado missile protected, 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. This particular aspect of the URI will remain open.

.2 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

a. Inspection Scope

The inspectors reviewed the final report for the INPO plant assessment conducted in May 2009. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and to verify if any significant safety issues were identified that required further NRC follow-up.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On July 7, 2010, 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 that meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as Non-Cited Violations.

.1 Inadequate Licensee Procedures for Addressing Containment Vacuum Breakers

Part 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities are satisfactorily accomplished.

Contrary to this, on April 21, 2009, the licensee identified that the procedures for testing containment vacuum relief valves were not appropriate to this circumstances in that the procedures did not adequately ensure that the TS requirements were met, subsequently leading to a violation of TS requirement 3.0, "Limiting Conditions for Operation." Specifically, Procedures SP-55-167-11A and SP-55-167-11B, "Containment Vacuum Breaker Tests (IST) – Train A and B," tested containment vacuum relief valves VB-10A and VB-10B in both the open and closed safety function positions; however, the procedural guidance did not prescribe which TS was entered if the valve failed to open or close.

The licensee documented this violation in CR 331702 and LER 05000305/2009-007-00 as discussed in Section 4OA3.2 of this report. The licensee performed a causal analysis and implemented corrective actions that included revision of the subject procedures, a review of the lessons-learned with all operating crews, and actions to ensure that the Kewaunee improved TS license amendment request addressed these concerns.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

S. Scace, Site Vice-President  
D. Laing, Training Manager  
D. Shannon, Radiation Protection General Supervisor  
M. Wilson, Director, Safety and Licensing  
T. Breene, Licensing Manager  
S. Yuen, Engineering Director  
J. Stafford, Organizational Effectiveness Manager  
D. Lawrence, Operations Manager  
T. Evans, Maintenance Manager  
C. Chovan, Outage and Planning Manager  
J. Gadzala, Licensing Engineer  
R. Giuliani, Acting Nuclear Oversight Manager  
S. Heironimus, Employee Concerns Manager

#### Nuclear Regulatory Commission

M. Kunowski, Chief, Division of Reactor Projects, Branch 5  
P. Tam, Project Manager, Office of Nuclear Reactor Regulation

### LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

#### Opened

05000305/2010003-01	FIN	Inappropriate Use of a Probabilistic Methodology in an Operability Determination (Section 1RO1.1)
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#### Closed

05000305/2006-004-00	LER	Incorrect Assumption Regarding De-Rating of Emergency Diesel Generators (Section 4OA3.3)
05000305/2006-004-01		
05000305/2007-003-00	LER	Emergency Diesel Generator Design Loading Calculations Non-Conservative (Section 4OA3.4)
05000305/2009-007-00	LER	Inadequate Station Procedures for Testing Containment Vacuum Breaker System (Section 4OA3.2)
05000305/2010003-01	FIN	Inappropriate Use of a Probabilistic Methodology in an Operability Determination (Section 1RO1.1)

#### Discussed

05000305/2009003-01	URI	Emergency Diesel Generator Fuel Oil and Day Tank Vent Line Tornado Design (Section 4OA5.1)
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## 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 or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### 1R01 Adverse Weather Protection

- OP-KW-AOP-GEN-004; Response To Natural Events; Revision 8
- GMP-172; Tornado Missile Hazard Inspection; Revision 9
- CR 386019; Screenhouse Roll-Up Door Latch Broken-Need To Use Vise-Grips
- CR 347741; NRC Informs DEK That Using TORMIS for Operability Determinations Is Inappropriate
- Drawing OPERM-220; Flow Diagram Fuel Oil Systems; Revision AS
- OBD 135; EDG Exhaust Duct Operability
- OD 169; EDG Exhaust Duct Operability
- OP-AA-102-1001; Development of Technical Basis to Support Operability Determinations; Revisions 0, 1, and 2
- FP-OP-OL-01; Operability Determination; Revision 1
- OP-AA-102; Operability Determination; Revision 5
- NP 2.1.5; Electrical Communications, Switchyard Access and Work Planning; Revision 16
- OP-KW-AOP-EG-001; Abnormal Grid Conditions
- NERC Standard NUC-001 Nuclear Plant Interface Coordination Agreement between Dominion Energy, Kewaunee, Inc. (Kewaunee Power Station) and Transmission Entity American Transmission Company, LLC; April 1, 2010
- GNP-08.02.19; Outage and Planning Transmission System Interface Responsibilities; Revision 3
- RTO-EOP-002-r10; Midwest ISO Market Footprint and Sub-area Capacity Emergencies Procedure; June 1, 2010
- CR 317309; MISO Alerts Do Not Result Into Abnormal Grid Condition AOP
- CR 363749; Informed by DEMI of Yellow Grid Condition
- CR 371942; ATC Informed Control Room of Electrical Contingency Requirement for Planned Work
- Nuclear Plant Operating Agreement Between The Midwest Independent Transmission System Operator, Inc. and Dominion Energy Kewaunee, Inc. for Kewaunee Power Station; March 26, 2010
- GNP-08.02.17; KPS Substation and Transformer Bays Maintenance and Modification; Revision 10
- CR 105121; Unexpected Control Room Alarm 47043-C, Pressurizer Control Pressure Abnormal

### 1R04 Equipment Alignment

- CR 340188; BRA-102, Circuit #5 Red Light Is Out
- Drawing E-233; Circuit Diagram DC Auxiliary and Emergency AC; Revision AS
- Drawing E-240; Circuit Diagram 4160V & 480V Power Sources; Revision AQ
- Drawing N-SW-02-CL: Service Water System Prestartup Checklist, Revision 54
- Drawing OPERM-202-1; Flow Diagram for Service Water System, Revision CK
- Drawing OPERM-202-2; Flow Diagram for Service Water System, Revision CV

- Drawing OPERM-202-3; Flow Diagram for Service Water System; Revision DC
- OPERM-601; Flow Diagram for Turbine and Auxiliary Building Ventilation; Revision CZ
- E-1606; Integrated Logic Diagram for Turbine Building and Screenhouse Ventilation System; Revision AE
- E-2016; Integrated Logic Diagram for Turbine Building and Screenhouse Ventilation System; Revision AH

#### 1R05 Fire Protection

- CR 384861; Terminal Plate Insulating Material Discolored on Batteries in Various Locations
- Fire Protection Program Analysis; AX-36 Turbine Building, Aux. Building and RC Building HVAC Equipment Rooms; Revision 8
- Fire Protection Program Analysis; AX-33 Condensate and Makeup Water Tanks Room; Revision 8
- Fire Protection Program Analysis; AX-37 Control Rod Drive Equipment Room; Revision 8
- Fire Protection Program Analysis; TU-95A Dedicated Shutdown Panel Room; Revision 8
- Fire Protection Program Analysis; TC-102 TSC Non-Safeguards Battery and Electric Equipment Room; Revision 8
- Fire Protection Program Analysis; AX-21 4160 Volt Switchgear Room; Revision 8
- Fire Protection Program Analysis; AX-20 Steam Generator Blowdown Tank Room; Revision 8
- Fire Protection Plan Drawing; PFP-19: AX-22, AX-33, AX-39, Condensate Storage and Rx Make-up Water Storage Room and Adjacent Areas; Revision D
- Fire Protection Plan Drawing; PFP-27: AX-23A, AX-34, AX-36, Hot Chem Lab and Shield Building Filter Assembly Area; Revision D
- Fire Protection Plan Drawing; PFP-25: AX-37, AX-32, AX-34, Control Rod Drive, Rx Trip Cabinet Area, instrument Lab, and Emergency Air Lock Area; Revision F
- Fire Protection Plan Drawing; PFP-38: Technical Support Center, Revision F
- Fire Protection Plan Drawing; PFP-15: AX-20, AX-21, AX-22, 4160 V SWGR, SGBT Hold Up Tanks and Waste Neutralizing Tank Area, Revision E
- Fire Protection Plan Drawing; PFP-8: TU-95A, 480V Switchgear Bus 1-51 and 1-52 Room; Revision C

#### 1R11 Licensed Operator Requalification Program

- LRC-10-DY201; Simulator Exercise Guide; Revision B
- CR 378780; Performance of PCG-46C-01, Found Differences Between Plant and Simulator PPCS
- CR 379648; Simulator Sensitivity to Delta Flux to Rod Movement Greater Than in Plant

#### 1R12 Maintenance Effectiveness

- Licensee Maintenance Rule Data Tracking Sheets; Plant Process Computer System; June 2008 – June 2010
- Maintenance Rule Scoping Questions; Plant Process Computer System; June 29, 2010
- Maintenance Rule System Basis; 46A Plant Computer; Revision 4
- Plant Process Computer System Unavailability; June 2008 – June 2010
- Condition Report Search List for PPCS; January 1, 2009 – June 29, 2010
- PCG-46D-10; CP-AMAG System Monitoring
- OP-KW-AOP-CP-001; Abnormal Plant Process Computer System; Revision 4
- OP-KW-GOP-106; Startup from 35% Power to Full Power; Revision 10
- System Health Report; Plant Process Computer System; 1st Quarter 2010

- ACE 000459; Determine Apparent Cause for Repetitive Failure of Traveling Water Screen 1B2 Shear Pin
- System Health Reports; Service Water; 1<sup>st</sup> Quarter 2009 through 1<sup>st</sup> Quarter 2010

### 1R13 Maintenance Risk

- Major Activities Data Lists, Control Room Operator Logs, Daily Risk Profiles and Work Planning Schedules for the Weeks of April 12, 19, and 26, 2010, May 3, 17, and 24, 2010, and June 14 and 21, 2010

### 1R15 Operability Evaluations

- CR 385449; CR Bypassed O/R Review and Required Operability Determination
- CR 365198; EDG Fuel Oil Level Abnormal Alarm Setpoints Do Not Align with Tech Spec's
- Calculation C10049; Battery Room Hydrogen Generation Calculation; Revision 2
- CR 377954; Work Order Needed For Repair of Bubbler Tube For 1A EDG Fuel Oil Storage Tank
- CR 377959; Work Order Needed For Repair of Bubbler Tube For 1B EDG Fuel Oil Storage Tank
- CA 161149; Review For Past Operability
- CR 383236; NRC Identifies + Violation
- CA 170542; Corrective Action to Engineering to Evaluate Past Operability
- MRE 011937; 1A RHR Fan Coil Unit Found to Have a Degraded Fan Bearing
- CR 378573; DG B Did Not Stop When DG B Control Switch Was Placed To Stop
- Drawing E-1588; Schematic Diagram D/G B Shutdown, Governor Control & Aux. Relays; Revision AQ

### 1R18 Plant Modifications

- CR 381979; TMod 2010-03 Pipe Stand Evaluation
- TMod 2010-03; Leak Repair of MS-3B-23; Revision 0
- 50.59 Applicability Review of TMod 2010-03; Leak Repair of MS-3B-23; Revision 0

### 1R19 Post-Maintenance Testing

- WO KW100688002; Refurbish E/I Module TM-403BB, S/N 2171328
- WO KW100687965; TM-403BB, Tavg MA Found Out of Specification During SP-47-01
- CR 382800; Test Equipment Caused Delay in Blue Channel Return to Service
- SP-47-011C; Reactor Coolant Temperature and Pressurizer Pressure Instrument Channel 3 (Blue) Calibration; Revision 21; performed on May 27, 2010
- WO KW100538477; PM34-581: Upper Motor Bearing Oil Sample
- WO KW100281306; PM17-044: Inspect/Clean/Lube Motor
- WO KW100281436; PM34-525: Lower Motor Bearing Lubrication
- SP-34-099B; Train B RHR Pump and Valve Test – IST; Revision 23
- WO KW100679443; Adjust Packing on ICS-2B
- SP-23-100B; Train B Containment Spray Pump and Valve Test
- WO KW100612107; OP-KW-ORT-DGM-002, TSC Diesel Generator Monthly Availability Test
- OP-KW-ORT-DGM-002; TSC Diesel Generator Monthly Availability Test; Revision 8
- OP-KW-ORT-DGM-001C; TSC Diesel Generator Operation Log; Revision 1
- WO KW100677276; Calibrate DPIS-16426 and DPIS 16425. Repair Indication/Switches as Necessary

- ICP-02-11; SW – Traveling Water Screen DPIS and Pressure Switches; Revision I
- OP-KW-ARP-47054-Q; Beta WindowBox 05; Traveling Water Screen DP High; Revision 3

#### 1R22 Surveillance Testing

- CR 022651; Turbine Driven Auxiliary Feedwater Pump Discharge Pressure Indication
- SP-55-155B; Engineered Safeguards Train B Logic Channel Test; Revision 23; associated with WO KW100619699
- SP-05B-284; Turbine Driven AFW Pump Full Flow Test – IST; Revision 33
- C11782; Calculation for the Development of Auxiliary Feedwater System Pump Curves and IST Pump Test Acceptance Criteria Which Meet the Intent of NRC Information Notice 97-90; Revision 1
- CR 379085; Oil on the Base Plate Thought to be Overfill of Oil Housing
- SP-05B-283A; Motor Driven AFW Pump A Full Flow Test – IST; revision 25
- CAP 044769; Request for a PCR for all Steam Exclusion Surveillance Procedures
- SP-14-315B; Steam Exclusion Train B Logic Test; Revision 5
- E-2607; Schematic Diagram Steam Exclusion Logic; Revision H
- E-2615; Steam Exclusion Protection System Panel FR103, Channel I (Red); Revision D
- E-2612; W/D Steam Exclusion Logic Panel FR102 Train “B”; Revision Q
- E-2613; W/D Steam Exclusion Logic Panel FR102 Train “B”; Revision E
- E-2619; W/D Steam Exclusion Auxiliary Relay Cabinet CR120; Revision E
- E-2606; Schematic Diagram Steam Exclusion Logic – Train “B”; Revision L
- E-2608; Schematic Diagram Steam Exclusion Annunciators; Revision F
- SP-31-168A; Train A Component Cooling Pump and Valve Test - IST
- SP-31-168A; Train A Component Cooling Pump and Valve Test - IST

#### 1EP6 Emergency Preparedness Drill Observation

- Drill Scenario; June 29, 2010 Annual Exercise
- EPIP-AD-02; Emergency Class Determination; Revision 46
- EPIP-AD-07; Emergency Notifications; Revision 57

#### 4OA1 Performance Indicator Verification

- MRE 011940; MRE for SW-4A Inoperable
- MRE 011720; CC Surge Tank Level Transmitter Found Out of Spec
- MRE 011641; Transmitter 23012 Found Out of Spec Low During ISP-AFW-216 Calibration
- CR 376788; Error Discovered in Submitting RHR Unavailability 4<sup>th</sup> Quarter 2009 MSPI Data
- Kewaunee Mitigating System Performance Index Basis Document; Revision G
- Performance Indicator Data Sets, Auxiliary Feedwater; January, 2009 – March, 2010
- Performance Indicator Data Sets, Service Water; January, 2009 – March, 2010
- Performance Indicator Data Sets, Component Cooling Water; January, 2009 – March, 2010
- MSPI Derivation Reports, Auxiliary Feedwater; January, 2009 – March, 2010
- MSPI Derivation Reports, Service Water; January, 2009 – March, 2010
- MSPI Derivation Reports, Component Cooling Water; January, 2009 – March, 2010

#### 40A2 Identification and Resolution of Problems

- RCE 989; TAT Lockout
- Operations Department Self Assessment; March 2010
- Maintenance Department Self Assessment; March 2010
- Kewaunee Trend Report; 4th Quarter 2009
- Kewaunee Trend Report; 2nd Quarter 2008
- Maintenance Department Rework List; June 29, 2010
- ER-KW-EPI-1001; Engineering Performance Improvement; Revision 2
- Nuclear Oversight – Kewaunee Site Vice-president’s Brief; June 22, 2010
- Common Cause 126; Human Performance – Documentation H.2(c)
- Common Cause 123; Common Cause Analysis of Three Cross-Cutting Aspects in Human Performance – Worker Practice – Procedural Compliance
- Common Cause 122; Three Cross-Cutting Aspects in the Area of Human Performance – Oversight H.4(c)
- CR 359510; Received Annunciator TLA-11, Reactor Thermal Power High, Due to R5110G
- CR 359123; FW-7B/CV-31030, Main Feedwater Flow Control Valve, Ops Continues to Degrade
- 1<sup>st</sup> Quarter 2010 System Health Report for Feedwater – Category A
- CR 359673; Received Annunciator TLA-11, Reactor Thermal Power High, Due to R51110G
- CR 356451; Positioner Cover Causing Unstable Output from Positioner
- CR 360265; Control of Reactor Thermal Power One Hour Average Not Per Procedure
- ODM 128; FW-7B, Main Feedwater Regulating Valve, Movement Is Erratic and Is Causing Thermal Power Alarms; December 7, 2009

#### 40A3 Follow-Up of Events and Notices of Enforcement Discretion

- CR 379175; Determine Why There Was No Alarm (Undetected Failure) Of The Safety Parameter Display System
- EN45883; Event Notification For The Loss Of Safety Parameter Display System Due To Computer Problems; April 30, 2010
- CR 019207; Document Past Operability For “A” Emergency Diesel Generator, Dated 9/25/2008
- Kewaunee Emergency Diesel Generator Engine Ratings At Elevated Temperatures, “1B” Emergency Diesel Generator Past Operability Assessment; June 2007
- Licensee Letter To The NRC Dated December 28, 2006, Entitled Licensee Event Report 2006-004-01
- Licensee Letter To The NRC Dated June 29, 2007, Entitled Withdrawal Of Licensee Event Report 2007-003-00
- Licensee Letter To The NRC Dated July 14, 2006, Entitled Licensee Event Report 2006-004-00
- Licensee Letter To The NRC Dated April 4, 2007, Entitled Licensee Event Report 2007-003-01
- Licensee Validation Package For Licensee Event Report 2007-003-01
- Licensee Validation Package For Licensee Event Report 2006-004-00
- Licensee Validation Package For Licensee Event Report 2006-004-01
- Licensee Letter To The NRC Dated April 5, 2007, Entitled Licensee Amendment Request 230
- Licensee Letter To The NRC Dated June 22, 2009, Entitled Licensee Event Report 2009-007-00
- Licensee Validation Package For Licensee Event Report 2009-007-00
- CR 331702; Technical Specification Violation In Past Due To Inoperable Containment Vacuum Relief Valves
- SP-55-167-11B; Containment Vacuum Breaker Tests (IST); Revision 0

#### 4OA5 Other Activities

- CR 347741; NRC Informs DEK That Using TORMIS for Operability Determinations is Inappropriate
- Drawing OPERM-220; Flow Diagram Fuel Oil Systems; Revision AS
- OBD 135; EDG Exhaust Duct Operability
- OD 169; EDG Exhaust Duct Operability
- OP-AA-102-1001; Development of Technical Basis to Support Operability Determinations; Revisions 0, 1, and 2
- FP-OP-OL-01; Operability Determination; Revision 1
- OP-AA-102; Operability Determination; Revision 5

#### NRC-Identified Condition Reports

- CR 375680; Gaps Identified On Door 8 Flood Barrier
- CR 375815; SD-101 Information Plaque Omits FUG 8 And Associated Burnt Out Light Bulbs
- CR 377626; NRC Question Regarding Traveling Water Screen "B" Differential Pressure Indications
- CR 380040; NRC Identified Math Error In Procedure
- CR 380138; SW-1400 Valve Assembly Movement In The Closed Direction
- CR 381057; USAR Does Not Contain Required Description Of Degraded Grid Voltage Protection
- CR 3811057; NRC URI 2009-005-08 Changes To EAL CU1 And SU5 Debriefed As Potential Violation
- CR 381979; Temporary Modification TMOD-2010-03 Pipe Stand Evaluation Revision
- CR 282152; Safety System Functional Failures May Not Have Been Properly Assessed
- CR 383101; License Amendment Request For Approval Of The Cybersecurity Plan
- CR 383236; NRC Identifies Technical Specification Violation
- CR 384383; Potential Oversight In Documenting Checks On The Radar Logs
- CR 384383; Door 9 Inactive Leaf Floor Bolt (Cane Bolt) Up
- CR 384606; NRC NCV 2010-002-01: Incorrect Curve Incorporated Into Calibration Sps
- CR 384607; NRC NCV 2010-002-02; Fuel Loading Occurs With Below Minimum Boron Concentration
- CR 384609; NRC NCV 2010-002-03; Incorrect Settings On Differential Relay – Loss Of TAT
- CR 384746; Light Bulbs Burned Out On Bus 62 And Bus 6
- CR 384861; Terminal Plate Insulating Material Discolored On Batteries In Various Locations
- CR 384994; Breaker 1-602 Bus 6 Cross Tie Breaker Charging Spring Ready Lamp Not Lit
- CR 385556; NRC Comments On AOP-EG-001
- CR 385890; SP For Battery BRB101 Does Not Match Or Bound The Calculation Based Load Profile
- CR 386019; Screenhouse Roll Up Door 281 Latch Broken, Need To Use Vise-Grips
- CR 386175; Changes To MSPI Data
- CR 386313; EP Drill Critique – Plant Fire Alarm Sounds Same As Emergency Alarm

#### 4OA7 Licensee-Identified Violations

- Licensee Letter To The NRC Dated June 22, 2009, Entitled Licensee Event Report 2009-007-00
- Licensee Validation Package For Licensee Event Report 2009-007-00

- CR 331702; Technical Specification Violation In Past Due To Inoperable Containment Vacuum Relief Valves
- SP-55-167-11B; Containment Vacuum Breaker Tests (IST); Revision 0

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
FIN	Finding
IMC	Inspection Manual Chapter
INPO	Institute of Nuclear Power Operations
IP	Inspection Procedure
LER	Licensee Event Report
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
PI	Performance Indicator
PARS	Publicly Available Records System
RIS	Regulatory Issue Summary
SDP	Significance Determination Process
SPDS	Safety Parameter Display System
SSCs	Structures, Systems, and Components
TS	Technical Specification
TSO	Transmission System Operator
USAR	Updated Safety Analysis Report
URI	Unresolved Item
WO	Work Order

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Sincerely,

***/RA/ By John Jandovitz Acting For/***

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

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

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