

January 30, 2007

Mr. David A. Christian  
Senior Vice President and  
Chief Nuclear Officer  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

SUBJECT: KEWAUNEE POWER STATION - NRC INTEGRATED INSPECTION  
REPORT 05000305/2006005; 05000305/2006014

Dear Mr. Christian:

On December 31, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Kewaunee Power Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 3, 2007, with Ms. L. Hartz 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, there were one self-revealed and two NRC-identified findings of very low safety significance, all of which involved a violation of NRC requirements. However, because these violations were of very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these findings as Non-Cited Violations (NCVs), in accordance with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Kewaunee Power Station.

D. Christian

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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), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/RA by M. Kunowski Acting for/***

Patrick L. Loudon  
Projects Branch 5  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000305/2006005; 05000305/2006014  
w/Attachment: Supplemental Information

cc w/encl: L. Hartz, Site Vice President  
C. Funderburk, Director, Nuclear Licensing  
and Operations Support  
T. Breene, Manager, Nuclear Licensing  
L. Cuoco, Esq., Senior Counsel  
D. Zellner, Chairman, Town of Carlton  
J. Kitsembel, Public Service Commission of Wisconsin  
State Liaison Officer, State of Wisconsin

D. Christian

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C. Funderburk, Director, Nuclear Licensing  
and Operations Support  
T. Breene, Manager, Nuclear Licensing  
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D. Zellner, Chairman, Town of Carlton  
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000305/2006005 and 05000305/2006014

Licensee: Dominion Energy Kewaunee, Inc.

Facility: Kewaunee Power Station

Location: Kewaunee, WI

Dates: October 1 through December 31, 2006

Inspectors: S. Burton, Senior Resident Inspector  
P. Higgins, Resident Inspector  
M. Phalen, Radiation Specialist  
D. Lords, Resident Inspector  
T. Ploski, Senior Emergency Preparedness Analyst  
R. Winter, Operations Engineer  
C. Zoia, Operations Engineer  
J. Robbins, Reactor Engineer  
K. Barclay, Reactor Engineer

Approved by: Patrick L. Loudon, Chief  
Projects Branch 5  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000305/2006005 and IR 05000305/2006014; 10/01/2006 - 12/31/2006; Kewaunee Power Station. Fire Protection, and Refueling and Other Outage Activities.

This report covers a 3-month period of inspection by resident inspectors and announced inspections by regional specialists. The emergency preparedness portion of this inspection is being tracked using Inspection Report (IR) 05000305/2006014. Three Green findings with associated Non-Cited Violations (NCVs) were identified. 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 3, dated July 2000.

### A. NRC-Identified and Self-Revealed Findings

#### **Cornerstone: Initiating Events**

- Green. A finding of very low safety significance and an associated NCV of Technical Specification 6.8, "Procedures," was identified by the inspectors for the failure to identify radiological and toxic hazards in the cable spreading area fire zone pre-fire strategy. These hazards were from a radioactively contaminated lead pipe in the fire zone that could melt during certain fire scenarios. As part of corrective actions, the licensee appropriately revised the strategy. The issue was entered into the licensee's corrective action program.

The finding is greater than minor because it was associated with the external factors - fire attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to provide adequate warnings and guidance in the pre-fire plan related to these hazards could have adversely impacted the fire brigade's ability to properly respond to a fire. This impact could increase the likelihood of damage to equipment, causing an upset of plant stability. NRC management review determined the finding to be of very low safety significance (Green), due to the extensive training provided to fire brigade members to deal with unexpected contingencies. This finding has a cross-cutting aspect in the area of human performance because the licensee failed to provide complete, accurate, and up-to-date pre-fire strategies for the fire brigade to respond to a fire. (Section 1R05)

#### **Cornerstone: Mitigating Systems**

- Green. A finding of very low safety significance and an associated non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed during performance of a plant safety-related procedure to fill and vent the containment spray system, on October 11, 2006, when water was inappropriately diverted from the reactor coolant system to the residual heat removal system. As part of corrective actions, the licensee revised the procedure to ensure the systems were

properly aligned during fill and vent activities. The issue was entered into the licensee's corrective action program.

This finding is greater than minor because if left uncorrected it would become a more significant safety concern in that the use of other inadequate procedures could have rendered inoperable important mitigating equipment, such as the containment spray and residual heat removal systems. Additionally, the finding was associated with the procedure quality and configuration control attributes of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was determined to be of very low safety significance (Green) because it did not require a quantitative assessment. This finding has a cross-cutting aspect in the area of human performances because the licensee failed to provide complete, accurate, and up-to-date procedures to fill and vent the containment spray system. (Section 1R20.1)

- Green. A finding of very low safety significance and an associated NCV of Technical Specification 6.8, "Procedures," was identified by the inspectors on October 23, 2006, for the failure to install scaffolding in accordance with station procedures. Specifically, scaffolding was installed inside containment that was too close to, or was in contact with, safety injection system components and piping. As part of corrective actions, the licensee removed the scaffolding and enhance the station procedure for scaffolding. The issue was entered into the licensee's corrective action program.

This finding is greater than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, improperly positioned scaffolding could have impeded or prevented proper operation of the safety injection system during an accident. The finding was of very low safety significance (Green) because it did not require a quantitative assessment. This finding has a cross-cutting aspect in the area of human performances because personnel did not follow the procedure for scaffolding. (Section 1R20.2)

**B. Licensee-Identified Violations**

None.

## REPORT DETAILS

### Summary of Plant Status

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

- on August 31, 2006, a refueling outage began. The refueling outage was completed on October 24, 2006, and power increased to 98.6 percent on October 30, 2006. Full power was restricted to approximately 99.5 percent because of an issue with the computer-generated reactor power calorimetric measurement;
- on October 30, 2006, a reactor trip occurred during maintenance on a reactor protection system inverter. Full power was resumed on November 1, 2006;
- on November 10, 2006, the unit was shutdown to repair a main generator exciter bearing. During the shutdown, an unplanned reactor trip occurred because of the status of a power-range nuclear instrument. Power operation was restored on November 16, 2006;
- on November 21, 2006, a downpower to 94 percent was performed for heater drain pump repairs; power was returned to 99.4 percent on November 24, 2006;
- on December 29, 2006, a downpower occurred after the failure of the "A" heater drain pump. Power decreased to 78 percent and was subsequently restored to 94 percent; and
- Kewaunee ended the inspection period with reactor power at approximately 94 percent pending repairs to the heater drain pump.

## **1. REACTOR SAFETY**

### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (711111.01)

##### a. Inspection Scope

The inspectors performed a detailed review of the licensee's procedures and a walkdown of two systems to observe the licensee's preparations for adverse weather, including conditions that could result from winter conditions. The inspectors focused on plant specific design features for the systems and implementation of the procedures for responding to or mitigating the effects of adverse weather. Inspection activities included, but were not limited to, a review of the licensee's adverse weather procedures, preparations for the winter season, and a review of analysis and requirements identified in the Updated Safety Analysis Report (USAR). The inspectors also verified that



operator actions specified by plant specific procedures were appropriate. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors evaluated readiness for seasonal susceptibilities for the following areas for a total of two samples:

- heat tracing; and
- auxiliary building ventilation.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial walkdowns of accessible portions of trains of risk-significant mitigating systems equipment. The inspectors reviewed equipment alignment to identify any discrepancies that could impact the function of the system and potentially increase risk. Identified equipment alignment problems were verified by the inspectors to be properly resolved. The inspectors selected redundant or backup systems for inspection during times when equipment was of increased importance due to unavailability of the redundant train or other related equipment. Inspection activities included, but were not limited to, a review of the licensee's procedures, verification of equipment alignment, and an observation of material condition, including operating parameters of equipment in-service. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors selected the following equipment trains to assess operability and proper equipment line-up for a total of six samples:

- emergency diesel generator (EDG) "B" with EDG "A" out-of-service for maintenance;
- containment sump diversion barrier installation after outage completion;
- low pressure coolant injection/residual heat removal (RHR) following plant restart after a refueling outage;
- auxiliary building ventilation following completion of maintenance;
- control room ventilation following system modifications; and
- special ventilation, Zone SV, following restoration after the refueling outage.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete walkdown of equipment for one risk significant mitigating system. The inspectors walked down the system to review mechanical and electrical equipment line-ups, component labeling, component lubrication, component and equipment cooling, hangers and supports, and operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of past and outstanding work orders was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program document (CAP, that is, condition report) database to ensure that any system equipment alignment problems were being identified and appropriately resolved. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors selected the following system to assess operability and proper equipment line-up for a total of one sample:

- safety injection (SI) system following plant restart.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Zone Walkdowns (71111.05Q)

a. Inspection Scope

The inspectors walked down risk significant fire areas to assess fire protection requirements. The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and had implemented adequate compensatory measures for out-of-service, degraded, or inoperable fire protection equipment, systems, or features. 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, or the potential to impact equipment which could initiate or mitigate a plant transient. The inspection activities included, but were not limited to, the control of transient combustibles and ignition sources, fire detection equipment, manual suppression capabilities, passive suppression capabilities, automatic suppression capabilities, compensatory measures, and barriers to fire

propagation. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors selected the following areas for review for a total of six samples:

- Fire Zone AX-32, Cable Spreading Area;
- Fire Zone TU-94, CO2 Storage Tank Room;
- Fire Zone AX-30, Relay Room and Loft;
- Fire Zone TU-97,98, Battery Rooms 1A & 1B;
- Fire Zone AX-23A, Hot Chemistry Lab; and
- Fire Zone TU-92, 1B Diesel Generator.

b. Findings

Introduction: A finding of very low safety significance (Green) and an associated Non-Cited Violation (NCV) of Technical Specification (TS) 6.8, "Procedures," was identified by the inspectors for the failure to identify radiological and toxic hazards in the cable spreading area fire zone pre-fire strategy.

Description: The inspectors identified lead piping in the overhead of the cable spreading room while performing a fire zone inspection during December 2006. The piping was identified as a potentially radiologically contaminated system. The inspectors were concerned that in the event of a fire the melting point for this piping could be reached creating molten lead, an airborne toxic lead atmosphere, and potentially a radiological hazard. The inspectors reviewed the pre-fire strategies used to prepare the fire brigade when responding to a fire in this area and noted that these hazards and the lead pipe were not identified in the strategies.

Analysis: The inspectors determined that the failure to include the radiological hazards and the presence of the lead, both molten and lead vapors, in the Fire Area Strategies book is a performance deficiency warranting a significance evaluation. Using Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated November 2, 2006, the inspectors concluded that the finding is greater than minor because it was associated with the external factors - fire attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to provide adequate warnings and guidance in the pre-fire plan related to these hazards could have adversely impacted the fire brigade's ability to properly respond to a fire. Procedure E-FP-08, "Emergency Operating Procedure - Fire," Step 4.13, requires the fire brigade to "refer to the Fire Area Strategies book for planning Fire Brigade actions."

In accordance with IMC 0609, "Significance Determination Process" (SDP), Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," dated November 22, 2005, the inspectors performed an SDP Phase 1 screening and determined that the finding affected fire protection defense-in-depth strategies. However, as discussed in IMC 0609, Appendix A, Attachment 1, issues related to performance of the fire brigade are not included in IMC 0609, Appendix F, "Fire Protection Significance Determination Process," dated February 28, 2005, and require

management review. Therefore, the finding was reviewed by NRC management, and was determined to be a finding of very low safety significance (Green) due to the extensive training provided to fire brigade members to deal with unexpected contingencies. Additionally, the inspectors determined that this finding has a cross-cutting aspect in the area of human performance because the licensee failed to provide complete, accurate, and up-to-date pre-fire strategies for the fire brigade to respond to a fire.

Enforcement: Licensee TS 6.8, "Procedures," Paragraph a., requires that written procedures meet the requirements of Sections 5.2.2, 5.2.5, 5.2.15 and 5.3 of American National Standards Institute (ANSI) N18.7-1976. Section 5.3.2 (5) of ANSI N18.7-1976 specifies that precautions should be established to alert individuals performing tasks to measures which should be used to protect equipment and personnel.

Contrary to the above, the licensee's pre-fire plan for Fire Zone AX-32, Cable Spreading Area, did not identify any potential radiological and toxic hazards. Specifically, the pre-fire plan did not identify the hazards associated with potentially contaminated lead piping in this area. After a discussion of this issue with the inspectors, the licensee entered the finding into its corrective action program as CAP039885, "NRC Questions on Cable Spreading Room Lead Pipe," and CAP040360, "PFP-24, Fire Strategy Lacks Hazard Identification for Lead and Radiation." The immediate action taken by the licensee was to revise the affected pre-fire strategy. Proposed actions included procedure revisions to better manage the pre-fire strategies and a review of all pre-fire strategies and drawings. Because this violation was of very low safety significance and was entered into the corrective action program, this violation is being treated as a NCV (NCV 05000305/2006005-01), consistent with Section VI.A.1 of the NRC Enforcement Policy.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

The inspectors performed a quarterly review of licensed operator requalification training. The inspection assessed the licensee's effectiveness in evaluating the requalification program, ensuring that licensed individuals operate the facility safely and within the conditions of their license, and evaluated licensed operator mastery of high-risk operator actions. The inspection activities included, but were not limited to, a review of high risk activities, emergency plan performance, incorporation of lessons learned, clarity and formality of communications, task prioritization, timeliness of actions, alarm response actions, control board operations, procedural adequacy and implementation, supervisory oversight, group dynamics, use of TSs, simulator fidelity, and licensee critiques of crew performance. As part of this inspection, the document listed in the Attachment was reviewed.

The inspectors observed the following requalification examination for a total of one sample:

- an operating crew performing an evaluated annual examination simulator scenario.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the radiation monitoring system to assess maintenance effectiveness, including maintenance rule activities, work practices, and common cause issues. Inspection activities included, but were not limited to, the licensee's categorization of specific issues including evaluation of performance criteria, appropriate work practices, identification of common cause errors, extent of condition, and trending of key parameters. Additionally, the inspectors reviewed implementation of the Maintenance Rule (10 CFR 50.65) requirements, including a review of scoping, goal-setting, performance monitoring, short-term and long-term corrective actions, functional failure determinations associated with reviewed CAPs, and current equipment performance status. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors performed the following maintenance effectiveness review for a total of one sample:

- an issue/problem-oriented review of the radiation monitoring system because the licensee designated it as risk significant under the Maintenance Rule and the system experienced multiple failure of risk significant instrumentation.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed maintenance activities to review risk assessments (RAs) and emergent work control. The inspectors verified the performance and adequacy of RAs, management of resultant risk, entry into the appropriate licensee-established risk bands, and the effective planning and control of emergent work activities. The inspection activities included, but were not limited to, a verification that licensee RA procedures were followed and performed appropriately for routine and emergent maintenance, that RAs for the scope of work performed were accurate and complete, that necessary actions were taken to minimize the probability of initiating events, and that activities to ensure that the functionality of mitigating systems and barriers were performed. Reviews also assessed the licensee's evaluation of plant risk, risk management, scheduling, configuration control, and coordination with other scheduled risk significant work for these activities. Additionally, the assessment included an evaluation of external

factors, the licensee's control of work activities, and appropriate consideration of baseline and cumulative risk. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors observed maintenance or planning for the following activities or risk significant systems undergoing scheduled or emergent maintenance for a total of two samples:

- repair of "A" heater drain pump coupling after the pump seized; and
- planned maintenance on EDG "B".

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations which affected mitigating systems or barrier integrity to ensure that operability was properly justified and that the component or system remained available. The inspection activities included, but were not limited to, a review of the technical adequacy of the operability evaluations to determine the impact on TSs, the significance of the evaluations to ensure that adequate justifications were documented, and that risk was appropriately assessed. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors reviewed the following operability evaluation for a total of one sample:

- reactor coolant system (RCS) loop "B" flow indication low in control room.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors' review of permanent plant modifications focused on verification that the design bases, licensing basis, and performance capability of related structures, systems or components were not degraded by the installation of the modification. The inspectors also verified that the modifications did not place the plant in an unsafe configuration. The inspection activities included, but were not limited to, a review of the design adequacy of the modification by performing a review, or partial review, of the modification's impact on plant electrical requirements, material requirements and replacement components, response time, control signals, equipment protection, operation, failure modes, and other related process requirements. Additional elements of this modification were inspected using Temporary Inspection TI 2515/166 (Section

4OA5). As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors selected the following permanent plant modification for review for a total of one sample:

- containment sump strainer modifications and procedures.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors verified that the post-maintenance testing procedures and activities were adequate to ensure system operability and functional capability. Activities were selected based upon the structure, system, or component's ability to impact risk. The inspection activities included, but were not limited to, witnessing or reviewing the integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use and compliance, control of temporary modifications or jumpers required for test performance, documentation of test data, system restoration, and evaluation of test data. Also, the inspectors verified that maintenance and post-maintenance testing activities adequately ensured that the equipment met the licensing basis, TS, and USAR design requirements. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors reviewed post-maintenance activities associated with the following components for a total of six samples:

- post-maintenance testing of RHR "B" following maintenance;
- post-maintenance installation and testing of reactor coolant pump flange bolts following maintenance;
- post-maintenance testing of the turbine-driven auxiliary feedwater pump following maintenance;
- post-maintenance testing of the RCS bypass flow instrument following maintenance;
- post-maintenance testing radiation monitoring instrument R-23 following maintenance; and
- post-maintenance testing of EDG "B" auto shutdown following repairs to the carbon-dioxide system.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors evaluated activities for a refueling outage that began on September 1, 2006, and ended on October 24, 2006, a maintenance outage that began on October 30, 2006, and ended on November 1, 2006, and a maintenance outage that began on November 10, 2006, and ended on November 14, 2006. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule, developed mitigation strategies for loss of key safety functions, and adhered to operating license and TS requirements to ensure defense-in-depth. The inspection activities included, but were not limited to, a review of the outage plan, monitoring of shutdown and startup activities, control of outage activities and risk, and observation of reduced inventory operations, maintenance and refueling activities. As part of this inspection, the documents listed in the Attachment were reviewed. This constitutes three samples.

In addition to activities inspected utilizing specific procedures, the following represents a partial list of the major outage activities the inspectors reviewed/observed, all or in part:

- containment inspections and closure;
- review of outage plans and the forced outage work lists;
- control room turnover meetings and selected pre-job briefings;
- refueling activities;
- startup and heatup activities, including criticality, feed pump startup, main turbine generator startup and synchronization, and elements of power escalation to full power; and
- identification and resolution of problems associated with the outages.

b. Findings

.1 Inadvertent Drain Down of the RCS During Fill and Vent of the Containment Spray System

Introduction: A finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed during performance of a plant safety-related procedure to fill and vent the containment spray (ICS, internal containment spray) system when water was inappropriately diverted from the RCS to the RHR system.



Discussion: During September and October, 2006, the plant was in a refueling shutdown outage. On October 11, 2006, during the performance of nuclear safety-related procedure N-ICS-23A, "Fill And Vent of ICS," the control room operators observed that reactor vessel level began to decrease from the initial level of 20.6 percent, which was approximately 6 inches below the reactor vessel flange. In response, operators increased charging flow to restore level and began an investigation to determine the cause of the problem. The licensee identified that procedure N-ICS-23A inappropriately required valve RHR-400A be opened. Subsequently, RHR-400A was closed, the ICS fill and vent procedure was terminated, and reactor vessel level was restored using charging pumps. During the event, vessel level decreased to 19.6 percent (12 inches below the flange) and about 300 gallons of reactor coolant were discharged from RHR pump "A" to the containment spray system and into the refueling water storage tank (RWST). The licensee determined that the development and review of procedure N-ICS-23A had not identified procedure errors; specifically, changes in the operating configuration from which the procedure was intended for use versus the plant configuration for which it was actually used were not adequately considered.

Analysis: The inspectors determined that the inadvertent discharge of 300 gallons of reactor coolant to the RWST during the fill and vent of the containment spray system because of the use of an inadequate procedure is a performance deficiency warranting a significance evaluation. Using IMC 0612, Appendix B, "Issue Screening," dated November 2, 2006, the inspectors concluded that the finding is greater than minor because if left uncorrected it would become a more significant safety concern in that the use of other inadequate procedures could have rendered inoperable important mitigating equipment, such as the containment spray and residual heat removal systems. Additionally, the finding was associated with the procedure quality and configuration control attributes of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the use of the inadequate procedure resulted in the inadvertent drain down of 300 gallons of coolant from the reactor vessel and challenged the configuration of the containment spray and RHR systems.

The inspectors evaluated the finding using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," dated February 28, 2005, and determined that this finding was of very low safety significance (Green) because it did not require a quantitative assessment. Additionally, the inspectors determined that the finding has a cross-cutting aspect in the area of human performance because the licensee failed to provide complete, accurate, and up-to-date procedures to fill and vent the containment spray system.

Enforcement: Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings." Contrary to this, safety-related Procedure N-ICS-23A was inadequate to fill and vent the containment spray system in the existing configuration of the plant and resulted in an inadvertent drain down of the RCS. The licensee entered

this issue into their corrective action program as CAP038226, "Reactor Vessel Level Decrease During ICS Fill and Vent." Corrective actions, to date, included significant revision of the procedure and review and approval of the procedure by the Plant Operating Review Committee. Additionally, a root cause evaluation, RCE000741, was in progress that would likely establish additional corrective actions. Because this violation was of very low safety significance and was entered into the corrective action program, this violation is being treated as an NCV (NCV 05000305/2006005-02), consistent with Section VI.A of the NRC enforcement policy.

## .2 Scaffolding in Contact with the Safety Injection System Affects Operability

Introduction: A finding of very low safety significance (Green) and an associated NCV of TS 6.8, "Procedures," was identified by the inspectors for the failure to install scaffolding in accordance with station procedures. Specifically scaffolding was installed inside containment that was too close to, or in contact with, SI system components and piping.

Discussion: On October 23, 2006, while performing a containment closure inspection, the inspectors identified scaffolding that was erected closer than 2 inches from or was in contact with SI components and piping near valve SI-48, "Reactor Vessel Injection Line 1a Vent." Step 4.2.6 of general maintenance procedure GMP-127, "Requirements and Guidelines for Scaffold Construction and Inspection," Revision 0, required a 2-inch clearance or approved engineering evaluation. The inspectors requested a copy of the appropriate engineering evaluation for the installed scaffolding. The licensee determined that one had not been performed and could not be performed because the scaffolding had been disassembled since the inspectors' containment closure inspection. The licensee then interviewed knowledgeable plant personnel in an attempt to determine the configuration of the scaffolding prior to disassembly. From the interviews and a review of a database, the licensee concluded that the scaffolding had been erected too close to multiple safety-related SI components.

Analysis: The inspectors determined that the installation of scaffolding too close to safety-related SI components and without an engineering evaluation, contrary to procedural requirements, is a performance deficiency warranting a significance evaluation. Using IMC 0612, Appendix B, "Issue Screening," dated November 2, 2006, the inspectors concluded that the finding is greater than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems (the SI system) that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, improperly positioned scaffolding could have impeded or prevent proper operation of the SI system during an accident.

The inspectors evaluated the finding using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," dated February 28, 2005, and determined that this finding was of very low safety significance (Green) because it did not require a quantitative assessment. The inspectors also determined that the finding has a cross-cutting aspect in the area of human performance because personnel did not follow the procedure for scaffolding.

Enforcement: Licensee TS 6.8, "Procedures," Paragraph a., requires that written procedures be established, implemented, and maintained that meet the requirements of Sections 5.2.2, 5.2.5, 5.2.15 and 5.3 of ANSI N18.7-1976. Section 5.2.2, "Procedure Adherence," of ANSI N18.7-1976 specifies that procedures shall be followed. Contrary to this, the licensee failed to follow the requirements of procedure GMP-127 when scaffolding was installed closer than 2 inches from safety-related SI components and no engineering evaluation was conducted. The licensee entered this issue into its corrective action program as CAP038277, "Safety-Related Area Scaffold Not Conforming to GNP-127 for Hot Shutdown Mode." The immediate corrective action was to dismantle the incorrectly installed scaffolding. Planned corrective actions were to modify procedure GNP-127 to better clarify the applicability requirements of the procedure. Because this violation was of very low safety significance and was entered into corrective action program, this violation is being treated as an NCV (NCV 05000305/2006005-03), consistent with Section VI.A.1 of the NRC Enforcement Policy.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed surveillance testing activities to assess operational readiness and to ensure that risk-significant structures, systems, and components were capable of performing their intended safety function. Activities were selected based upon risk significance and the potential risk impact from an unidentified deficiency or performance degradation that a system, structure, or component could impose on the unit if the condition was left unresolved. The inspection activities included, but were not limited to, a review for preconditioning, integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use, control of temporary modifications or jumpers required for test performance, documentation of test data, TS applicability, impact of testing relative to performance indicator reporting, and evaluation of test data. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors selected the following surveillance testing activities for review for a total of three samples (RCS leak detection surveillance, routine surveillance, and inservice testing surveillance):

- RCS leak rate weekly checks;
- EDG "B" trip testing; and
- SI pump pressure tests.

b. Findings

No findings of significance were identified.

## Cornerstone: Emergency Preparedness

### 1EP2 Alert and Notification System (ANS) Evaluation (71114.02)

#### a. Inspection Scope

Inspectors reviewed and discussed with emergency preparedness (EP) staff procedures and records on the operation, maintenance, and testing of the ANS in the Kewaunee County portion of the station's Emergency Planning Zone (EPZ) to verify that this ANS equipment was adequately maintained and tested between mid-2004 and mid-2006 in accordance with emergency plan commitments and procedures, and to verify that adequate measures were in place to determine whether siren outages would meet 10 CFR 50.72 non-emergency event reporting criteria. Inspectors also reviewed records of 2004 and 2005 preventive maintenance activities on ANS equipment in Kewaunee County to verify that annual preventive maintenance was completed per procedures. The inspectors also reviewed a sample of records of non-scheduled ANS maintenance activities conducted between July 2004 and July 2006 to determine whether repairs were initiated in a timely manner following identification of apparent malfunctions. A sample of records were also reviewed to determine if Kewaunee EP staff were effectively using the corrective action program to document and trend siren malfunctions occurring in the Kewaunee County and Manitowoc County portions of the Kewaunee Station's EPZ, although Point Beach Plant EP staff had the lead responsibility for initiating siren maintenance activities within Manitowoc County. The inspectors also reviewed records of twice monthly ANS tests conducted by Kewaunee County officials from July 2005 through June 2006. Using onsite computer equipment, inspectors observed a scheduled test of Kewaunee County's EPZ sirens that was conducted by Kewaunee County officials.

These activities completed one inspection sample.

#### b. Findings

No findings of significance were identified.

### 1EP3 Emergency Response Organization (ERO) Augmentation Testing (71114.03)

#### a. Inspection Scope

The inspectors reviewed and discussed procedures on the improved primary and alternate processes for augmenting the on-shift ERO. The inspectors also discussed the EP staff's improved administrative processes for maintaining the ERO roster and ERO members' contact information, as well as EP staff's ongoing actions to resolve staffing shortfalls for several ERO positions. The inspectors reviewed and discussed ongoing efforts to resolve a licensee-identified inconsistency between the emergency plan and the ERO training program regarding the expected frequency of re-qualification training. Inspectors reviewed records of unannounced off-hours augmentations of the on-shift ERO, which were either call-in drills or were drive-in responses to actual emergency events between March 2005 and April 2006, to determine the adequacy of

ERO members' performances and the use of the corrective action program on performance critique items. The inspectors sampled training records of 40 ERO members, who were assigned to key and support positions, to verify that they were currently trained for their assigned positions. The inspectors also reviewed records of training provided to over 100 ERO members on the station's upgraded Emergency Action Level (EAL) scheme that was approved by the NRC and later implemented by the licensee.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the final summary of the licensee's change management plan, which addressed the mid-2006 re-location of the Emergency Operations Facility and Joint Information Center, from the corporate offices of the former owner of Kewaunee to a Dominion Resources-owned building in Green Bay, Wisconsin. The inspectors then toured these upgraded emergency response facilities. The inspectors reviewed a sample of letters of agreement with off-site support organizations that were listed in Revision 31 of Appendix D of the Emergency Plan to verify that these agreements were adequately detailed and in effect through at least December 2006. The inspectors also reviewed the current memorandum of understanding between the Kewaunee and Point Beach regarding various shared responsibilities for providing training and other assistance to mutual offsite support organizations.

The inspectors also performed in-house screening reviews of Revision 31 of the Emergency Plan, Revision A, of the EAL Technical Bases Document, and Revision Y to EPIP-AD-19, which all became effective in late August 2006, and reviewed the licensee's associated pre-implementation evaluations performed per 10 CFR 50.54(q). Screening reviews of these revisions do not constitute approval of the changes in these revisions and, as such, the changes are subject to future NRC inspection to ensure that the emergency plan, site-specific EALs, and criteria used in offsite protective action recommendation decision making continue to meet NRC regulations.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

Inspectors reviewed Nuclear Oversight (NOS–quality assurance) staff’s 2005 and 2006 audits of the licensee’s EP program to verify that these independent assessments met the requirements of 10 CFR 50.54(t). The inspectors sampled records of EP drills and exercises conducted during 2004 and 2005 to verify that the licensee fulfilled its drill and exercise commitments, and to verify that these activities were adequately critiqued. Samples of corrective action program records and associated corrective actions were reviewed to determine if concerns identified in the following types of self-assessments were adequately addressed: emergency plan implementation for two actual emergency events; critiques of EP drills and exercises; NOS audits; and the availability of equipment and instrument readouts associated with the EALs.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors selected emergency preparedness exercises that the licensee had scheduled as providing input to the Drill/Exercise Performance Indicator. The inspection activities included, but were not limited to, the classification of events, notifications to off-site agencies, protective action recommendation development, and drill critiques. Observations were compared with the licensee’s observations and corrective action program entries. The inspectors verified that there were no discrepancies between observed performance and performance indicator reported statistics. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors selected the following emergency preparedness activity for review for a total of one sample:

- an operating crew performing an evaluated annual examination simulator scenario in conjunction with licensed operator requalification training. Drill notifications were simulated with state, county, and local agencies for an alert classification.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator Verification (71151)

##### **Cornerstones: Mitigating Systems, Barrier Integrity, and Emergency Preparedness**

##### .1 Mitigating Systems and Barrier Integrity Cornerstone Performance Indicators

###### a. Inspection Scope

The inspectors' review of performance indicators (PIs) used PI guidance and definitions contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 2-4, to assess the accuracy of the PI data. The inspectors' review included, but was not limited to, conditions and data from logs, licensee event reports, corrective action program documents, and calculations for each PI specified. As part of this inspection, the documents listed in the Attachment were reviewed.

The following PIs were reviewed for a total of three samples:

- Safety System Functional Failures, for January 2005 through September 2006;
- Reactor Coolant System (RCS) Specific Activity, for January 2005 through September 2006; and
- Reactor Coolant System Leakage, for January 2005 through September 2006.

###### b. Findings

No findings of significance were identified.

##### .2 Emergency Preparedness PIs

###### a. Inspection Scope

The inspectors reviewed samples of licensee records associated with the three EP PIs listed below. Inspectors verified that the licensee accurately reported these indicators in accordance with relevant procedures and NEI 99-02. Specifically, the inspectors reviewed licensee records associated with PI data reported to the NRC for July 2005 through June 2006. Reviewed records included: procedural guidance on assessing opportunities for these three PIs; assessments of PI opportunities during two actual emergency events, pre-designated Control Room Simulator training sessions, the 2005 biennial exercise, and integrated emergency response facility drills; revisions of the roster of personnel assigned to key ERO positions; and results of periodic ANS operability tests.

The following PIs were reviewed for a total of three samples:

- ANS;
- ERO Drill Participation; and
- Drill and Exercise Performance.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the routine inspections documented in this inspection report, the inspectors verified that the licensee entered the problems identified during the inspection into the corrective action program. Additionally, the inspectors verified that the licensee was identifying issues at an appropriate threshold and entering them in the program, and verified that problems included in the program were properly addressed for resolution. Attributes reviewed included: complete and accurate identification of the problem; 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 classification, prioritization, and focus were commensurate with safety and sufficient to prevent recurrence of the issue.

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 new CAPs. This review was accomplished by reviewing daily CAP summary reports and attending corrective action review board (CARB) meetings.

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 corrective action program to identify trends that might indicate the existence of a more significant safety issue. The review was focused on trending program deficiencies, which considered licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the period of July through November 2006, with some examples extending beyond those dates when the scope of a trend warranted.

The inspectors reviewed adverse trend CAP report items associated with various problems that occurred during the period. The review included issues that were documented outside the normal corrective action program, such as major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and maintenance rule assessments. The inspectors compared and contrasted the licensee's trends with those discussed in the licensee's trending documents. Corrective actions associated with a sample of the issues identified in the licensee's trend report or through interviews with licensee management, were reviewed for adequacy. The inspectors focused on those corrective actions pertaining to the trending program.

The inspectors also evaluated the report against the requirements of the licensee's corrective action program as specified in the associated administrative procedure; 10 CFR 50; Appendix B and the commitments made by the licensee in its response to the NRC 2006 Mid-Cycle Performance letter, dated August 31, 2006. Documents reviewed during this inspection are listed in the Attachment to this report.

#### Assessment and Observations

The licensee's Corrective Action Program Performance Monthly Report written November 9, 2006, rated overall performance as a "significant strength" for the fourth straight month. When licensee management was questioned about this rating by the inspectors, the rating given was much more self-critical. It was stated that the results given in the report were based on older indicator methodology and that the standards were in the process of being raised. While the inspectors noted an increased numbers of CAPs generated and an increased number of CAPs closed, many other improvements that were still needed were found to be early in the process of being implemented.

The licensee's Third Quarter 2006 Trend Report, dated November 28, 2006, highlighted the following as key areas needing improvement: root cause evaluation (RCE) timeliness, a large, increasing backlog of CAP-related activities, and the existence of 314 activities from 2005 or before. The inspectors' review of the 314 older activities revealed 14 had an "A" Significance Level, with the oldest of these being a corrective action to prevent recurrence (CAPR), dated August, 2002, to implement life cycle management as part of RCE000576. In addition, the inspectors noted in the Third Quarter 2006 Trend Report that personnel were not prepared for the work planning

meetings and were not being held accountable, restating the problems that were identified in the previous two quarterly reports.

During the inspection, the inspectors had the following additional observations in the area of trending and corrective actions:

- CAP039514 documented a lack of attendees at CAP screening meeting had occurred as recently as November 17, 2006, indicative of a lack of commitment by the organization to support the corrective action program as core business. Interviews with the licensee noted that since that time, screen team participation had increased due to accountability efforts to correct the problem. The inspectors attended a sample of work planning meetings and reviewed a sample of attendance records for recent screen team meetings. While no recent discrepancies were observed due to lack of preparation or not having a quorum present, the representatives who attended these meetings varied significantly. The inspectors were concerned that without a stable and consistent screen team membership, identification of intra-departmental trends may not be adequate.
- The inspectors found that “Hot Buttons”, the flags currently used for categorizing CAPs, were being eliminated, as evaluated by corrective action CA024639, dated July 10, 2006. Numerous “Hot Button” categories will be replaced with five “Focus on Four” categories (Safety, Human Performance, Equipment Reliability, Corrective Action Program, and Manager/Supervisor Excellence as a cross-cutting category). This change was being made due to excessive “Hot Button” creation and inconsistent implementation which resulted in confusion and minimal trending value. The draft change management plan projects the completion of departmental training, recoding six months of data, and implementation of the new process by February 28, 2007.
- The inspectors found that the current method of trending, as described on the quarterly trend report cover letters and confirmed in discussions with licensee management, consisted of presenting managers and supervisors with statistically analyzed corrective action program information to share with “appropriate personnel” in their work groups. The appropriate personnel were then expected to identify and correct adverse trends from this information. The licensee found that the results of this process were not meeting expectations and created a change management plan to address corrective action program ownership by the individual departments. Plans were being implemented to revise procedures and train personnel to perform consistent trend analysis in order to create analysts within each department. The draft change management plan projects the approval and completion of departmental training, recoding six months of data, and implementation of the new process by February 28, 2007.
- The inspectors found that the implementing procedure for Action Request process trending, General Nuclear Procedure GNP-11.08.02, had an incomplete and confusing definition for “Trend - A change in frequency of occurrence of a given parameter or a change in level of performance of a particular program or organization”, along with a reference to the Dominion Trend Analysis Manual for other definitions. The inspectors found that the procedure definition created a

barrier in recognizing adverse trends by causing the user to focus only on changing information. For example, a consistently bad level of performance may not be recognized as an adverse trend. A more complete definition from the Dominion Trend Analysis Manual, available on the Dominion web page, briefly discussed how trend data were compared to normal, desired, or historical values and provided criteria requiring further sorting and review. The licensee noted this concern and explained that change management plans included revising this procedure as part of the efforts discussed above.

b. Findings and Issues

No significant issues were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 (Open) Unresolved Item (URI) 05000305/2006004-02), Potential Inoperability of EDG "A" Due to a Fuel Oil Leak

a. Inspection Scope

On December 24, 2006, the licensee performed special testing on the fuel oil supply fitting quarantined after the August 17, 2006, failure of the fuel line fitting during a surveillance of EDG "A" (URI 05000305/2006004-02). The inspectors observed the special test performed in Horton, Kansas on a similarly configured diesel generator. The subject fitting failed almost immediately upon being placed in service. The NRC is reviewing these failures and will document the results of that review in IR 05000305/2007007.

b. Findings and Issues

No significant issues were identified.

.2 Personnel Performance During Non-Routine Plant Evolutions and Events

a. Inspection Scope

The inspectors reviewed personnel performance during unplanned and non-routine evolutions to review operator performance and the potential for operator contribution to the evolution, transient, or event. The inspectors observed or reviewed records of operator performance during the evolution. Reviews included, but were not limited to, operator logs, pre-job briefings, instrument recorder data, and procedures. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors evaluated the following evolutions for a total of five samples:

- inadvertent drain-down of the reactor vessel (section 1R20);
- heavy lift of reactor coolant pump motor and associated rigging failure;
- control rod insert malfunction
- reactor trip on October 30, 2006; and
- unplanned transient due to heater drain pump "A" failure on December 29, 2006.

b. Findings and Issues

No significant issues were identified.

4OA5 Other Activities

.1 Temporary Instruction (TI) 2515/169 - Mitigating System Performance Index Verification

a. Inspection Scope

The inspectors verified that the licensee had correctly implemented the Mitigating Systems Performance Index (MSPI) guidance for reporting unavailability and unreliability of the monitored safety systems. Included in this review was a sampling of surveillance of activities which, when performed, do not render the train unavailable due to the short duration of the activity; a review surveillance activities which, when performed, do not render the train unavailable due to the credit for operator recovery activities; a review to independently determine the baseline planned unavailability hours and confirm that these hours were correctly translated into the basis document; a review on a sampling basis of operating logs, corrective maintenance records, and condition reports, to assess the accuracy of actual planned and unplanned unavailability data; and a review on a sampling basis of related maintenance and test history, to assess the accuracy of the failure data (demand failures, run/load failures, and failures to meet the risk-significant mission time, as applicable) for the identified monitored components.

b. Observations

Summary

The inspectors did not identify any significant discrepancies based upon validation of the unavailability and unreliability input data, and verification of accuracy of the 2006 2nd quarter MSPI results.

Evaluation of Inspection Requirements

In accordance with the requirements of TI 2515/169, the inspectors evaluated and answered the following questions:

1. For the sample selected, did the licensee accurately document the baseline planned unavailability hours for the MSPI systems?

Yes. The licensee accurately documented the baseline planned unavailability hours for the MSPI systems in accordance with the prescribed method in NEI 99-02, Revision 4. Some minor discrepancies in baseline planned unavailability were identified by the inspectors and the licensee initiated CAP0394777, "Insignificant Minor Discrepancies Identified in MSPI Baseline," to correct the specific issues and address any potential extent of condition.

2. For the sample selected, did the licensee accurately document the actual unavailability hours for the MSPI systems?

Yes. The licensee accurately documented the actual unavailability hours for the MSPI systems in accordance with the prescribed method in NEI 99-02, Revision 4. Some minor discrepancies in actual unavailability were identified by the inspectors and the licensee initiated CAP040209, "Minor Data Errors Identified for MSPI," to correct the specific issues and address any potential extent of condition.

3. For the sample selected, did the licensee accurately document the actual unreliability information for each MSPI monitored component?

Yes. The licensee accurately documented the actual unreliability information for each MSPI monitored component in accordance with the guidance in NEI 99-02, Revision 4.

4. Did the inspector identify significant errors in the reported data, which resulted in a change to the indicated index color? Describe the actual condition and corrective actions taken by the licensee, including the date when the revised PI information was submitted to the NRC.

No. The inspectors did not identify significant errors in the reported data that resulted in a change to the indicated index color.

5. Did the inspector identify significant discrepancies in the basis document which resulted in: (1) a change to the system boundary; (2) an addition of a monitored component; or (3) a change in the reported index color? Describe the actual condition and corrective actions taken by the licensee, including, the date of when the bases document was revised.

No. The inspectors did not identify significant discrepancies in the basis document that resulted in either: (1) a change to the system boundary, (2) an addition of a monitored component, or (3) a change in the reported index color.

c. Findings

No findings of significance were identified.

.2 TI 2515/166 - Potential Impact of Debris Blockage on Emergency Sump Recirculation

a. Inspection Scope

The inspectors reviewed the licensee's activities in response to NRC Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors (PWRs)." These activities included installation of a permanent plant modification and revision of procedures and plant documents. The inspectors verified that plant procedures had been updated to include programmatic controls that as a minimum:

- control the introduction of materials into containment that could impact sump performance. This includes materials such as insulation that could affect the chemical composition of the water;
- identify the need to perform an assessment of the introduction of new materials into containment or a change in the amount of existing materials in containment for potential adverse effects on the emergency core cooling system (ECCS) and ICS recirculation functions; and
- control any action, as appropriate, credited by the licensee as part of their resolution of GSI-191, "Assessment of Debris Accumulation on PWR Sump Performance."

A review of the modification was discussed in Section 1R17 of this inspection report. Additional inspection activities, related to changes to the plant design basis, documentation, and safety evaluations, were conducted during the annual Modifications/50.59 inspection and will be documented in IR 05000305/2006016.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Ms. Hartz and other members of licensee management on January 3, 2007. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exit meetings were conducted for:

- Emergency Preparedness inspection with Ms. L. Hartz on October 6, 2006; and
- Emergency Preparedness inspection with Mr. S. Wood on December 11, 2006.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

L. Armstrong, Site Engineering Director  
S. Baker, Radiation Protection Manager  
T. Breene, Nuclear Licensing Manager  
T. Webb, Director, Licensing and Safety  
A. Christensen, Emergency Preparedness Specialist  
K. Davison, Director, Operations and Maintenance  
J. Egdorf, Emergency Preparedness Supervisor  
D. Gauger, Chemistry Supervisor  
L. Hartz, Site Vice-President  
J. Ruttar, Operations Director  
T. Wiltman, Emergency Preparedness Instructor  
S. Wood, Emergency Preparedness Manager

#### Nuclear Regulatory Commission

P. Loudon, Chief, Division of Reactor Projects, Branch 5

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened and Closed

05000305/2006005-01	NCV	Inadequate Pre Fire Strategy Identified in Cable Spreading Room (Section 1R05)
05000305/2006005-02	NCV	Inadvertent Drain Down of the Reactor Coolant System During Fill and Vent of the Containment Spray System (Section 1R20.1)
05000305/2006005-03	NCV	Scaffolding in Contact with the Safety Injection System Affects Operability (Section 1R20.2)

#### Discussed

05000305/2006004-02	URI	Potential Inoperability of EDG "A" Due to a Fuel Oil Leak (Section 4OA3.1)
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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 of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection reports.

### **Section 1R01: Adverse Weather**

GNP-12.06.01; Cold Weather Operations; Revision D  
N-ACA-17; Auxiliary Building Ventilation System; September 9, 2006  
N-ACA-17-CL; Auxiliary Building Vent System Prestartup CL; Revision X  
N-TAV-16; Turbine Building and Screenhouse Ventilation System; Revision AB  
N-TAV-16-CL; Turbine Building and Screenhouse Ventilation System CL; Revision AB  
Drawing A-209; General Arrangement Reactor and Auxiliary Building Miscellaneous Floor Plans; Revision Z  
Drawing OPERM-601; Flow Diagram - Turbine & Aux. Bldg. Ventilation; Revision CO  
Drawing OPERM-604; Flow Diagram - Aux Building Zone SV Vent & Air Conditioning; Revision BC  
Drawing OPERM-605-1; Flow Diagram - Heating System; Revision B  
Drawing OPERM-605-2; Flow Diagram - Heating System; Revision A  
Drawing OPERM-606; Flow Diagram - Air Cond. Cooling Water Piping; Revision BR

### **Section 1R04: Equipment Alignment**

Design Change Request (DCR) 3605; Replacement of the ECCS Sump "B" Strainer; Revision 1  
GNP-12.06.01; Cold Weather Operations; Revision D  
N-ACA-17; Auxiliary Building Ventilation System; September 9, 2006  
N-ACA-17-CL; Auxiliary Building Vent System Pre-startup CL; Revision X  
N-SI-33-CL; Safety Injection System Pre-startup Checklist; Revision AK  
N-TAV-16; Turbine Building and Screenhouse Ventilation System; Revision AB  
N-TAV-16-CL; Turbine Building and Screenhouse Ventilation System CL; Revision AB  
Operator Workaround Sheet 06-17; No Alarm is Available to Alert Operators to a Potential Violation of Technical Specifications; July 20, 2006;  
Operator Workaround Sheet 06-28; QA Issued with Foxboro Alarm Boxes, Annunciators are Out-of-Service; October 25, 2006  
Drawing A-209; General Arrangement Reactor and Auxiliary Building Miscellaneous Floor Plans; Revision Z  
Drawing OPERM-601; Flow Diagram - Turbine & Aux. Bldg. Ventilation; Revision CO  
Drawing OPERM-604; flow Diagram - Aux Building Zone SV Vent & Air Conditioning; Revision BC  
Drawing OPERM-605-1; Flow Diagram - Heating System; Revision B  
Drawing OPERM-605-2; Flow Diagram Heating System; Revision A  
Drawing OPERM-606; Flow Diagram - Air Cond. Cooling Water Piping; Revision BR  
Drawing XK-100-29; Flow Diagram Safety Injection System; Revision AB  
Drawing XK-100-29; Flow Diagram Safety Injection System; Revision AL

### **Section 1R05: Fire Protection**

CA019549; Revise Pipe Stress Report AFW-05B-003 for Pipe Whip Loads on Containment Penetration 46W

CAP026459; Containment Penetration Analysis and Jet Impingement Loads  
CAP039885; NRC Questions on Cable Spreading Room Lead Pipe  
CAP040096; Containment Spray Recirculation Fire Suppression System Coverage - NRC Potential NCV of Appendix R, III.G.3  
CAP040160; Cable Spreading Room Lead Pipe - Follow Up to CAP039885  
FPP-08-08; FP - Control of Transient Combustible Materials; Revision H  
PMP-08-22; FP - Operability Test of Fire Dampers (Fusible Linked Style); Revision I  
Drawing OPERM 208-1; Revision A; Flow Diagram; Fire Protection System  
Drawing OPERM 208-2; Flow Diagram; Fire Protection System  
Drawing OPERM 208-3; Revision A; Details Deluge and Sprinkler Valves; Fire Protection System  
Kewaunee Nuclear Power Plant Fire Protection Program Analysis; Revision 6  
Kewaunee Power Station Fire Protection Program Plan; Revision 7

**Section 1R11: Licensed Operator Requalification Program**

LRC-06-DY502; Cycle 06-05 Dynamic; Revision B

**Section 1R12: Maintenance Effectiveness**

ACE002947; R-13 Sample Pump Tripped on Low Flow  
CA019924; Radiation Monitor System Above Normal on R-22  
CAP022764; Annunciator and Safety Evaluation Report Failed to Actuate for Check Source on R-14  
CAP024388; EP-AD-02 Improvement Ideas  
CAP024801; Discrepancies Noted While Performing Quarterly Functional Test of R-13  
CAP024866; R-14 Check Source Was Not Received During Monthly Test  
CAP024984; Recommend Performing an Assessment for System 45, Radiation Monitoring System  
CAP025013; R-13 Sample Pump Tripped  
CAP025857; Spike on R-22 Residual Heat Removal (RHR) Pump Pit Monitor  
CAP026798; R-13 Sample Pump Tripped on Low Flow  
CAP027039; Spare Power Supply Card/Board for Rad Monitoring Failure  
CAP027669; R-14 Failed to Return to Normal Values After Monthly Source Check (SP-45-230)  
CAP027697; Unexpected Alarm R-15  
CAP028330; Waste Gas Analyzer Failed to Isolate During R-13 Quarterly Check  
CAP029014; R-12 Declared Inoperable Due to Air Leak on R-11 Sample Line  
CAP029039; R-11 Detector and Gasket Found Assembled Incorrectly  
CAP029550; R-4 Steam Line 1B Radiation Monitor Spiked to Approximately 23,000 R/Hr  
CAP029941; Radiation Monitor Down Scale Failure (R-1)  
CAP030050; Spikes on R-34 Steam Line Radiation Monitor  
CAP030057; R-2 Downscale Failure  
CAP030427; R-2 Downscale Failure  
CAP 031759; Maintenance Rule (a)(1) Evaluation - System 40, Function 03  
CAP033191; R-1 Downscale Failure  
CAP033325; Annunciator 47013-B 'Radiation Monitor Failure' Received Unexpectedly for R-1  
CAP033456; Radiation Monitors Spiked  
CAP034359; R-9 Detector Loss of Link Failure  
CAP034579; Annunciator 47013-B 'Radiation Monitor Failure' Received Unexpectedly in the Control Room

CAP034617; Annunciator 47013-B 'Radiation Monitor Failure' Received Unexpectedly in the Control Room  
CAP035817; R-21 Failure  
CAP036440; R-15 No Detector Link  
CAP037521; No Detector Link Failure Message on R-15  
CAP039225; R-23 Failure  
CAP039306; Received Annunciator 47013-B Radiation Monitor Failure in Control Room  
CAP039584; Waste Gas Analyzer Failed to Isolate During R-13 Quarterly Functional Test  
CAP039612; Received Radiation Monitor Failure for R-1 Control Room Area  
CE015924; Radiation Monitor System Above Normal on R-22  
CE016341; R-12 Declared Inoperable Due to Air Leak on R-11 Sample Line  
CE016575; Radiation Monitor Downscale Failure (R-1)  
CE018021; Annunciator 47013-B 'Radiation Monitor Failure' Received Unexpectedly in the Control Room  
CE018870; No Detector Link Failure Message on R-15  
EFR024322; Annunciator 47013-B 'Radiation Monitor Failure' Received Unexpectedly in the Control Room  
EFR025426; Annunciator 47013-B 'Radiation Monitor Failure' Received Unexpectedly in the Control Room  
EFR028345; Received Radiation Monitor Failure for R-1 Control Room Area  
RCE000714; Maintenance Rule System 40 Function 03 Failure of Breaker to Operate; April 10, 2006  
Listing of Work Orders (WOs) Related to 480 V System between January 2005 and December 2006  
Listing of CAPs Related to 480 V System between January 2005 and December 2006  
Kewaunee Power Station (KPS) Maintenance Rule System Basis; Radiation Monitoring; Revision 7  
KPS System 45 Radiation Monitoring; Maintenance Rule Scoping Questions  
KPS System 45 Radiation Monitoring; SSC Performance Criteria Sheet  
KPS Maintenance Rule System Basis for 480 Volt Electrical Supply and Distribution System; Revision 6  
KPS Radiation Monitoring - Maintenance Rule Inspections - 2006  
KPS Radiation Monitoring; 4<sup>th</sup> Quarter 2005  
KPS Radiation Monitoring; 1<sup>st</sup> Quarter 2006  
KPS Radiation Monitoring; 2<sup>nd</sup> Quarter 2006  
KPS Radiation Monitoring; 3<sup>rd</sup> Quarter 2006  
Drawing E-2003; Integrated Logic Diagram Control Room A/C System; Revision O  
Drawing E-2013; Integrated Logic Diagram Radiation Monitoring; Revision V  
Drawing E-2018; Integrated Logic Diagram Radiation Monitoring; Revision M  
Drawing E-2021; Integrated Logic Diagram Radiation Monitoring; Revision AA  
Drawing E-2951; Integrated Logic Diagram High Level Radiation Monitoring; Revision P  
System 40, 480 VAC SCC Performance Criteria Sheet; Revision 3

### **Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Emergent Work Risk Evaluations: October 29, 2006; November 3, 9, 13, 14, 2006; December 8, 13, 14, 15, 18, 2006  
Kewaunee Plant Configuration Changes and Relative Core Damage Frequency Reports: November 3, 9, 16, 30, 2006; December 8, 14, 2006  
Kewaunee Plant Planning Schedules: October 23, 26, 28-31, 2006; November 3-7, 7-10, 12, 2006

### **Section 1R15: Operability Evaluations**

CAP038642; FI-459 (RCS Loop B Bypass Flow) Indication Low in Control Room  
IN 90-65; Recent Orifice Plat Problems  
OPERXK-100-10; Flow Diagram Reactor Coolant System; Revision BS  
OPR-161; RCS Loop B Bypass Loop Flow Element, FE-459; Revision 0

### **Section 1R17: Permanent Plant Modifications**

DCR 3605; Replacement of the ECCS Sump B Strainer; Revision 0 July 31, 2006  
DCR 3605; Replacement of the ECCS Sump B Strainer; Revision 1; September 12, 2006  
DCR 3605; Replacement of the ECCS Sump B Strainer; Revision 2;  
ECA 1.3; Containment Sump Blockage; Revision A  
General Nuclear Procedure GNP 12.17.01; Pre-Criticality Containment Inspection; Revision E  
GNP 12.17.02; Containment Inspection During Operations; Revision D  
Nuclear Engineering Procedure (NEP) NEP-04.22; Containment Latent Debris Sampling  
Evaluation; Revision A  
NEP-04.23; Containment Latent Debris Sample Collection; Revision A  
Procedure Change Request (PCR) PCR017853; Evaluate WOG Candidate Operator Action #5  
and #6 (GSI-191, PWR Sump Blockage)  
Simulator Exercise Guide (SEG) SEG # LRC-05-SE204; Loss of Emergency Coolant  
Recirculation; Revision A  
WO 06-003242-000; Switch-Containment Level Sump B - I Level Alarm; August 31, 2006  
WO 06-003243-000; Strainer-Containment Sump B Conical Screens; July 25, 2006  
WO 06-003244-000; Strainer-Containment Sump B Conical Screens; August 31, 2006  
WO 06-006766-000; Strainer RHR Pump Sump B Strainer; August 20, 2006  
WO 06-006787-000; Plant System/Safety; July 17, 2006  
Dominion Energy Kewaunee, Inc.; Responses to Request for Additional Information for NRC  
Generic Letter 2004-02; May 27, 2005, February 9, 2006, March 28, 2006, and July 6, 2005  
Dominion Energy Kewaunee, Inc.; Response to NRC Generic Letter 2004-02;  
September 1, 2005

### **Section 1R19: Post-Maintenance Testing**

CA017685; Leakage at FE-459, Flow Orifice for RCS Loop B RTD  
CAP023684; Leakage at FE-459, Flow Orifice for RCS Loop B RTD  
CAP033072; Reactor Coolant Pump Main Flange Bolting Stretch Measurement  
Recommendations  
CAP038642; FI-459 (RCS Loop B Bypass Flow) Indication Low in Control Room  
CE014966; Slight Leakage at FE-459, Flow Orifice for RCS Loop B RTD  
GMP-211; General Bolting Procedure; Revision P  
IN 90-65; Recent Orifice Plat Problems  
OPERXK-100-10; Flow Diagram Reactor Coolant System; Revision BS  
OPR-161; RCS Loop B Bypass Loop Flow Element, FE-459; Revision 0  
SP-05B-284; Turbine-Driven Auxiliary Feedwater Pump Full Flow Test - IST; Revision X  
SP-34-339B; RHR Pump B Full Flow Test at Refueling Shutdown - IST; Revision C  
SP-45-050.23; 50.59 Applicability Review; November 22, 2006  
SP-45-050.23; Radiation Monitoring System Channel R-23 Control Room Ventilation Radiation  
Monitor Calibration; Revision K  
SP-45-050.23; R-23 Troubleshooting Time Line; November 7, 8, 11, 18, 20, 21, 22, 27, 28, 29,  
30, 2006  
WO 03-005194-000; Element - Reactor Coolant Loop B RTD Loop F Orifice

WO 04-013265-000; Replace Bolts on FE-459 pr TCR 04-16  
WO 05-002550-000; Element - Reactor Coolant Loop B RTD Loop F Orifice  
WO 06-012057-000; Detector R-23 - Control Room Vent Monitor  
10000-4/65; Foxboro Orifice Plate Installation Instructions Section 6-110

### **Section 1R20: Refueling and Other Outage Activities**

CAP038226; Reactor Vessel Level Decrease During ICS Fill and Vent  
CAP038489; GNP-12.17.01 Inspection Results  
CAP038498; White Residue on Cracks in the Wall in Reactor Coolant Pump A Vault  
CAP038513; Containment Inspection Results per GNP-12.17.01  
CAP038542; GNP-12.17.01 Inspection Results  
CAP038722; Safety-Related Area Scaffold Not Conforming to GNP-127 for Hot Shutdown Mode  
CAP038858; FW-7B Oscillating Issue on Startup Coming Out of KR-28  
CAP038893; Work Request Written for FW-7B Handstation  
CAP038921; Automatic Reactor Trip  
CAP039166; GNP-12.06.01 Cold Weather Operations  
CAP039176; Emergency Keycards Would Not Work as Intended  
ES-0.1; Reactor Trip Response; Revision R  
GMP-205; Inter and Intra Panel Wiring Procedure (QA-1); Revision T  
GMP-224; Racking 5KV Air/Magnetic and Vacuum Breakers; Revision N  
GMP-224; Racking 5KV Air/Magnetic and Vacuum Breakers; Revision N; 50.59 Applicability Review  
GMP-263; EHV-4.16KV McGraw-Edison Circuit Breaker Electrical Maintenance; Revision C  
GNP-12.17.01; Pre-Criticality Containment Inspection; Revision E  
NRC Form 361; Reactor Plant Event Notification Worksheet EN# 42947  
PMP-38-08; EDC - 7.5 KVA Single Phase Inverter Electrical Maintenance (QA-1); Revision L  
RCE000741; Reactor Vessel Level Decrease During ICS Fill and Vent (RCE for CAP038226)  
RXT-01.00; Reactor Criticality by Dilution; Revision Y  
RXT-05.00; Reference Bank Worth Measurement; Revision P  
TR-112175; Capacitor Application and Maintenance Guide; Final Report; August 1999  
TRM 3.7.1; Technical Support Center/Station Blackout Diesel Generator; Revision 2  
WO 06-011864-000; Circuit Breaker Reserve Auxiliary Transformer  
WO 06-011864-000 Pre-Job Brief Checklist; Racking Out Breaker 1-407 and Troubleshooting Breaker Not Closing  
WO 06-011868-000; Inverter BRA111 Static Switch Loss "Alternate Source to Load" Output while Attempting to Re-Align Static Switch Back to Normal Lineup  
WO 06-011868-000; Pre-Job Brief Checklist; Inverter BRA111 Static Switch Loss "Alternate Source to Load" Output While Attempting to Re-Align Static Switch Back to Normal Lineup; Quality Control Inspection Record  
Ametek Solidstate Controls; Failure Analysis Report; November 30, 2006  
Drawing 011D32196; Outline; 7.5KVA Inverter; 105-140VDC, 120 VAC, 10, 60HZ  
Drawing 014D32197; Schematic 7.5 KVA Inverter; 105-140VDC, 120 VAC, 10, 60 HZ  
Drawing 015C32198; Schematic 1-Pole Static Switch; 7.5 KVA, 120 VAC, 10, 60 HZ  
Drawing 018B15934; Schematic Gate XFMR BD - V128  
Drawing 018B16804; V129-1 AC Noise Suppressor BD  
Drawing 018B71093; Noise Suppressor BD  
Drawing 018C25024; Schematic Frequency Meter Board  
Drawing 018C28210; Schematic Auto-Retransfer BD

Drawing 018C29657; Schematic Voltage Dropping Board  
Drawing 018C29709; Schematic Static Switch Current and Voltage Sense BD  
Drawing 018D27229; Schematic SCR Charger Control BD  
Drawing 026C32199; Schematic 7.5 KVA Regulated Rectifier; 480 VAC, 30, 60 HZ, 140 DC  
Drawing 237127A-E233; Circuit Diagram; DC Auxiliary And Emergency AC; Revision AQ  
Drawing E-845; Wiring Diagram; DC Auxiliary and Emergency AC; Revision BF  
Drawing XK-02534-14; Schematic 80-2111XX-90 Sync Board; Revision B  
Drawing XK-02534-15; Schematic 80-20914X-90 1PH Oscillator Board; Revision A  
Drawing XX100-149; Logic Diagram Steam Generator Trip Signals; Revision 4H  
Report - Forced Outage work List; October 30, 2006  
Report - PMT by code and work for mode hold HSD; October 24, 2006  
Schedules - 3 Day by Start Time (Various); October 2 through 23, 2006  
Solidstate Controls, Inc. Operation Manual - Maintenance; 6.1.1 Torque Specifications

### **Section 1R22: Surveillance Testing**

SP-33-042; Safety Injection Inside Containment System Pressure Test; Revision H  
SP-36-082; Reactor Coolant system Leak Rate Check; October 16, 2006

### **Section 1EP2: Alert and Notification System (ANS) Evaluation**

CAP021985; Loss of Power to One Kewaunee County EPZ Siren Due to Component Malfunction in July 2004  
CAP022128; Loss of Power to One Kewaunee County EPZ Siren Due to Vehicle Accident in October 2004  
CAP025298; Loss of Power to One EPZ Siren in Manitowoc County in February 2005  
CAP025912; Loss of Power to One EPZ Siren in Manitowoc County in March 2005  
CAP027588; One Kewaunee County EPZ Siren Out of Service for Due to Malfunction in May 2005  
CAP033485; Signal Interference Caused False Indications of Malfunctions for 10 EPZ Sirens in Kewaunee County - Problem Resolved Same Day  
CAP035413; Loss of Power to One EPZ Siren in Manitowoc County Due to Severe Weather on July 25, 2006  
EPMP 09.03; Alert and Notification System Testing and Maintenance; Revision N  
Purchase Order for ANS Equipment Maintenance Services through Mid-2007  
Printout of Results of Kewaunee County EPZ Sirens' Test Performed by Kewaunee County Officials on October 4, 2006  
Records of Preventive Maintenance on Sirens and Siren Activation Equipment in the Kewaunee County Portion of the EPZ in Fall 2004 and Fall 2005

### **Section 1EP3: Emergency Response Organization (ERO) Augmentation Testing**

CAP031112; NOS-Identified Shortfalls for Numbers of Personnel Assigned to Several ERO Positions and Concerns on the Process for Filling ERO Vacancies  
CAP037721; Discrepancy Between Emergency Plan and ERO Training Program Description on ERO Re-Qualification Training Frequency  
EPIPF-AD-07-10; ERO Event Notification; Revision B  
EPMP 01.01; ERO Qualification and Assignment Tracking; Revision H  
EPMP 01.07; ERO Tracker Database Maintenance; Revision A  
EPMP 02.06; ERO Augmentation Drills; Revision F  
PCR 022439; Revise EPMP 01.01 to Specify Minimum Numbers of Personnel for ERO Positions and Improve Procedural Guidance on Addressing Staffing Shortfalls  
E-mail to Relevant ERO Members; Implementation of EAL Scheme to be Effective on August 24, 2006, and List of Refinements to EAL Technical Bases Document; August 21, 2006  
Kewaunee Emergency Preparedness Training Program Description; Revision J  
Kewaunee Power Station Emergency Plan; Section 8.2; Emergency Response Personnel Training; Revisions 30 and 31  
Lesson Plan EPI-06-LP001; EALs Based on Nuclear Energy Institute 99-01 Guidance; Revision A; March 8, 2006  
Random Sample of 40 Key and Support ERO Members' EP Training Records  
Records of Actual Off-Hours On-Shift ERO Augmentations Associated with Actual Emergency Events in November 2005 and April 2006  
Records of Quarterly, Unannounced, Off-Hours ERO Augmentation Drills Conducted in March 2005, June 2005, September 2005, and March 2006  
Training Attendance Sheets; EALs Based on Nuclear Energy Institute 99-01 Guidance; mid-January to mid-July 2006  
PCR 022439; Revise EPMP 01.01 to Specify Minimum Numbers of Personnel for ERO Positions and Improve Procedural Guidance on Addressing Staffing Shortfalls

### **Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes**

10 CFR 50.54(q) Evaluation; Emergency Plan; Revision 31; August 24, 2006  
Kewaunee Power Station EAL Technical Bases Document; Revision A  
10 CFR 50.54(q) Evaluation; Kewaunee Power Station EAL Technical Bases Document; Revision A; August 24, 2006  
10 CFR 50.54(q) Evaluation; EPIP-AD-19; Determining Protective Action Recommendation; Revision Y; August 24, 2006  
CE 018168; Revise Process for Updating Letters of Agreement  
EPIP-AD-19; Determining Protective Action Recommendation; Revision Y  
Change Management Plan Summary; Transition to New Emergency Operations Facility, Joint Information Center, and Media Center; July 12, 2006  
Emergency Plan; List of Letters of Agreement; Appendix D; Revision 31  
Information Regarding Revision to Emergency Action Levels; February 3, 2006  
Kewaunee Power Station Emergency Plan; Revision 31  
Letter Serial No. 05-451A and Enclosures; Response to NRC Request for Additional Sample of Letters of Agreement with Off-site Support Organizations Listed in Emergency Plan; Appendix D, Revision 31  
Memorandum of Understanding Between Dominion-Kewaunee Station and Nuclear Management Company-Point Beach Plant on EP Areas of Support and Cooperation; August 2006

### **Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies**

CA023942; Article Added to Newsletter to Remind Personnel to Avoid Unnecessary Calls to Control Room During an Emergency Event  
CAP030310; Pager Activation Error During November 2005 Unusual Event Response  
CAP030322; Temporary Fire Watch Suspension During November 2005 Unusual Event Response  
CAP030947; No Lesson Plan Developed for Onsite Recovery  
CAP031151; Verification Call Back Not Received From One Offsite Agency Following Termination Of November 2005 Unusual Event  
CAP033459; Impact of Use of PING Monitor Readouts Instead of Stack Monitor Radiation Level Readouts Not Adequately Assessed for Emergency Event Classification While Stack Monitor Was Out-of-Service  
CAP033375; Distracting Calls to Control Room After the Alert Declaration  
CAP033418; Human Error in Responding to Pager Activation During Alert Event Response  
CAP033434; Security Personnel Response During the Alert Event  
CE016888; Training on Onsite Recovery Limited to Required Reading of a Procedure  
CE 017658; Evaluation of Use of PING Monitor Readouts Instead of Stack Radiation Level Monitor Readouts While Stack Monitor Out-of-Service  
CE 017703; Reassess Method of Issuing Dosimetry During an Alert Event Response  
CE 017675; Slow ERDS Activation After Alert Declaration  
EPIPF-TSC-01-10; TSC Data Coordinator Checklist; Revision B  
EPIPF-TSC-01-25; Emergency Response Data System (ERDS) Initiation Checklist; Revision C  
EPMP 02.01; Declared Emergency Evaluation and Documentation; Revision D;  
February 13, 2001  
GNP 04.04.01; 50.59 Applicability Review and Pre-Screening; Revision J  
GNP 08.02.14; Work Request Initiation, Screening, and Processing; Revision P  
NOS Observation Report 2005-001-2-005; Fleet Integrated EP Assessment on Interfaces with State and Local Support Organizations; April 19, 2005  
NOS Observation Report 2005-001-2-006; Main Report - Fleet Integrated EP Programs Assessment; April 19, 2005  
NOS Observation Report 2005-004-2-002; EP Drill Performances in October 2005; October 13, 2005  
NOS Observation Report 2005-004-2-011; December 2005 EP Training Drill; December 8, 2005  
NOS Audit Report 06-02; EP Program; April 13, 2006  
PCR 023944; Revise Work Request Process Procedures to Re-Categorize Significance of Work on Equipment Associated with EALs  
PCR 024050; Revise Checklists to Improve Timeliness of ERDS Activation  
Dominion Nuclear Administrative Procedure 2000; Dominion Work Management Process; Attachment 3; Work Priority level Determination; Revision 5  
Internal Memorandum; Annual Protected Area Evacuation Drill on December 17, 2004; January 21, 2005  
Internal Memorandum; Annual Protected Area Evacuation Drill on December 22, 2005  
Internal Memorandum; Semi-Annual Health Physics Drill on October 30, 2004; February 9, 2005  
Internal Memorandum; Semi-Annual Health Physics Drill on July 21, 2005; October 12, 2005  
Internal Memorandum; Annual Medical Drill on October 27, 2005; December 19, 2005  
Internal Memorandum; Fourth Quarter Integrated Facility Drill on December 14, 2004; March 21, 2005  
Letter to Wisconsin Emergency Management Director; Summary of Declared Alert at Kewaunee Power Station; April 27, 2006



Letters to Emergency Management Agency Officials of Kewaunee County, Manitowoc County, and State of Wisconsin; NOS 2006 Assessment of Licensee Interfaces with Offsite Support Organizations; September 29, 2006

Nuclear Management Company Fleet Modification Procedure FP-E-MOD-04; Design Inputs; Item 25; Emergency Planning/Preparedness; Revision 0

Self-Assessment Report 13319; Assessment of ERO Actions for Actual Unusual Event on November 25, 2005

Self-Assessment Report 15134; Assessment of ERO Actions for Actual Alert Declared on April 26, 2006

November 2005 Biennial Evaluated Exercise Report

September 2005 Pre-Exercise Evaluation Report

### **Section 1EP6: Drill Evaluation**

LRC-06-DY502; Cycle 06-05 Dynamic; Revision B

### **Section 4OA1: Performance Indicator Verification**

CAP031199; One Kewaunee County Siren Failed During a February 2006 Scheduled ANS Test CAP032686; ERO Participation PI Less Than 50 Percent Above Green Performance Band at End of First Quarter 2006

Dominion Nuclear Administrative Procedure 2605; Emergency Preparedness Performance Indicators; Revision 3

NRC Event Report 42169; Unusual Event Declared Due to Dangerous Levels of Carbon Dioxide Onsite; November 25, 2005

NRC Event Report 42530; Alert Declared Due to Failure of Reactor Protection System to Initiate Reactor Shutdown; April 26, 2006

Records of a PI Drill Conducted with Technical Support Center Staff in December 2005

Records of Five PI Drills Conducted with Sets of Emergency Operations Facility Staffs in December 2005

Sample of Records of Periodic ANS Test Results from July 2005 through June 2006

Sample of End of Calendar Quarter Records for Key ERO Members' Drill and Exercise Participation from July 2005 through June 2006

Sample of Records of DEP Opportunities from July 2005 through June 2006

### **Section 4OA2: Identification and Resolution of Problems**

CA024639; "Procedure Use" Hot Buttons Above the Average for 1<sup>st</sup> Quarter - 2006 (Inactive)

CAP031963; Timeliness Expectations for Corrective Action Program Not Being Met.

CAP039514; CAP Screen Team Did Not Meet Quorum Requirements

CAP039654; 2006 3rd Qtr Trend Report Identified 299 CAP Activities From 2005 and Back

CAP033145; 1st Qtr 2006 Trend Report - Work Observation

RCE000576; CCW Hx A Tube Leaks (5/4/02)

Attachment to CAP039654; List of Activities from 2005 and Back

GNP-11.08.02; Action Request Process Tracking, Revision E

Dominion Trend Analysis Manual, Revision 0

Letter 06-798; Kewaunee Power Station Response to NRC Mid-Cycle Performance Letter

2006 3rd Quarter Corrective Action Program Trend Report

2006 2nd Quarter Corrective Action Program Trend Report

2006 1st Quarter Corrective Action Program Trend Report

October 2006 Corrective Action Program Performance

### **Section 40A3: Followup of Events and Notices of Enforcement Discretion**

CAP038717; Rods Movement Did Not Occur as Expected During SP-49-074A  
CAP038921; Automatic Reactor Trip  
ES-0.1; Reactor Trip Response; Revision R  
NRC Form 361; Reactor Plant Event Notification Worksheet; EN 42884 - 10 CFR 26.73 (a)  
NRC Form 361; Reactor Plant Event Notification Worksheet; EN 42947  
Drawing 011D32196; Outline; 7.5KVA Inverter; 105-140VDC, 120 VAC, 10, 60HZ  
Drawing 014D32197; Schematic 7.5 KVA Inverter; 105-140VDC, 120 VAC, 10, 60 HZ  
Drawing 015C32198; Schematic 1-Pole Static Switch; 7.5 KVA, 120 VAC, 10, 60 HZ  
Drawing 018B15934; Schematic Gate XFMR BD - V128  
Drawing 018B16804; V129-1 AC Noise Suppressor BD  
Drawing 018B71093; Noise Suppressor BD  
Drawing 018C25024; Schematic Frequency Meter Board  
Drawing 018C28210; Schematic Auto-Retransfer BD  
Drawing 018C29657; Schematic Voltage Dropping Board  
Drawing 018C29709; Schematic Static Switch Current and Voltage Sense BD  
Drawing 018D27229; Schematic SCR Charger Control BD  
Drawing 026C32199; Schematic 7.5 KVA Regulated Rectifier; 480 VAC, 30, 60 HZ, 140 DC  
Drawing 237127A-E233; Circuit Diagram; DC Auxiliary And Emergency AC; Revision AQ  
Drawing E-845; Wiring Diagram; DC Auxiliary and Emergency AC; Revision BF  
Drawing XK-02534-14; Schematic 80-2111XX-90 Sync Board; Revision B  
Drawing XK-02534-15; Schematic 80-20914X-90 1PH Oscillator Board; Revision A  
Drawing XX100-149; Logic Diagram Steam Generator Trip Signals; Revision 4H  
Kewaunee Power Station; DNAP 1907 Human Performance Program; Critical/Heavy Crane Lift Suspension; October 5, 2006

### **Section 40A5: Other Activities**

ECA-1.3; Containment Sump Blockage; Revision A  
GNP-12.17.01; Pre-Criticality Containment Inspection; Revision E  
GNP-12.17.02; Containment Inspection During Operations; Revision D  
NEP-04.22; Containment Latent Debris Sampling Evaluation; Revision A  
NEP-04.23; Containment Latent Debris Sample Collection; Revision A  
WO 06-003242-000; Switch Containment Level Sump B-1 LVL Alarm  
WO 06-003243-000; Strainer-Containment Sump B Conical Screens  
WO 06-003244-000; Strainer-Containment Sump B Conical Screens  
WO 06-006766-000; Strainer RHR Pump Sump B Strainer  
WO 06-006787-000; Plant System/Safety Injection  
Dominion's Letter of Response to Request for Additional Information, NRC Generic Letter 2004-02; July 6, 2005  
Dominion's Letter of Response to NRC Generic Letter 2004-02; September 1, 2005  
Drawing SFS-KW-GA-01; Sure-Flow Strainer General Arrangement; Revision 3  
Drawing SFS-KW-GA-02; Sure-Flow Strainer Recirculation Strainer; Revision 4  
Drawing SFS-KW-GA-03; Sure Flow Strainer Sump Cover and Piping Layout; Revision 5  
Drawing SFS-KW-PA-7105; Sure-Flow Strainer Master Core Tube Layout; Revision 2  
Modification No. DCR 3605; Replacement of the ECCS Sump B Strainer; Revisions 0, 1, and 2  
Modification No. DCR 3605; Revision 2; 50.59 Applicability Review; October 6, 2006  
Procedure Change Request PCR017853; Evaluate WOG Candidate Operator Action #5 and #6 (GSI-191, PWR Sump Blockage)

NRC Temporary Instruction 2515/166; Pressurized Water Reactor Containment Sump  
Blockage (NRC Generic Letter 2004-02)  
Simulator Exercise Guide LRC-05-SE204; Loss of Emergency Coolant Recirculation;  
Revision A

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ANS	Alert and Notification System
ANSI	American National Standards Institute
CA	Corrective Action
CAP	Corrective Action Program Document (Condition Report)
CARB	Corrective Action Review Board
CE	Condition Evaluation
CFR	Code of Federal Regulations
DCR	Design Change Request
DRP	Division of Reactor Projects
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
FIN	Finding
ICS	Internal Containment Spray
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LER	Licensee Event Report
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NEI	Nuclear Energy Institute
NMC	Nuclear Management Company
NOS	Nuclear Oversight (Quality Assurance)
NRC	U.S. Nuclear Regulatory Commission
NUREG	Nuclear Regulatory Guide
P&ID	Piping & Instrumentation Diagram
PARS	Publicly Available Records System
PCR	Procedure Change Request
PI	Performance Indicator
RA	Risk Assessment
RCE	Root Cause Evaluation
RCS	Reactor Coolant System
RIS	Regulatory Issue Summary
RWST	Refueling Water Storage Tank
SDP	Significance Determination Process
SI	Safety Injection
TI	Temporary Instruction
TS	Technical Specification
URI	Unresolved Item
USAR	Updated Safety Analysis Report
WO	Work Order