January 20, 2006

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 05000305/2005017

Dear Mr. Christian:

On December 31, 2005, 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 4, 2006, with Mr. K. Hoops 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 two self-revealed findings of very low safety significance, of which both involved violations 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), consistent with Section VI.A.1 of the NRC's 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, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector at the Kewaunee Power Station.

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

Sincerely,

/RA/

Patrick L. Louden, Chief
Projects Branch 5
Division of Reactor Projects

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

Enclosure: Inspection Report 05000305/2005017
w/Attachment: Supplemental Information

cc w/encl: M. Gaffney, 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

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-305
License No:	DPR-43
Report No:	05000305/2005017
Licensee:	Dominion Energy Kewaunee, Inc.
Facility:	Kewaunee Power Station
Location:	N490 Highway 42 Kewaunee, WI 54216
Dates:	October 1 through December 31, 2005
Inspectors:	S. Burton, Senior Resident Inspector P. Higgins, Resident Inspector L. Haeg, Reactor Engineer D. McNeil, Senior Operations Engineer
Approved by:	P. Louden, Chief Projects Branch 5 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000305/2005017; 10/1/2005 - 12/31/2005; Kewaunee Power Station. Routine Integrated Report; Maintenance Risk Assessments and Emergent Work Control, Personnel Performance During Non-Routine Plant Evolutions and Events.

The report covered a 3-month period of inspection by resident inspectors and announced inspections of licensed operator requalification by a regional operations engineer. Two green findings, of which both were 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: Mitigating Systems

- Green. A Green, self-revealed, Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the failure to provide procedural guidance for adjusting service water valve SW-4B, a safety-related valve, which could affect the ability of safety-related mitigating system components to perform their intended function. On October 5, 2005, SW-4B, "Turbine Building Service Water Train 'B' Header Isolation," failed to meet its inservice testing stroke time requirements during the performance of surveillance procedure SP-02-138B and an associated unplanned entry into a Technical Specification Limiting Condition for Operation occurred. The condition occurred because the licensee made adjustments to SW-4B without procedural guidance to perform such adjustments. Corrective actions taken by the licensee include procedural revisions to strengthen guidance on adjustment of safety-related components. The primary cause of this finding was related to the cross-cutting area of human performance because maintenance was performed without required procedures.

  The finding is greater than minor because performing adjustment of safety-related equipment without procedural guidance, if left uncorrected, would become a more significant safety concern. Additionally, the finding is associated with the Reactor Safety/Mitigating Systems Cornerstone attribute of procedure quality and affects the associated cornerstone objective of insuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors answered "no" to all five screening questions in the Phase 1 Screening Worksheet under the Mitigating Systems column. Therefore, this finding is of very low safety significance. (Section 1R13)

Cornerstone: Initiating Events

- Green. A Green, self-revealed, Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified during two events when use of an inadequate plant prestartup procedure resulted in actuation of the CARDOX® carbon dioxide fire suppression system. The licensee failed to provide the operators with quality procedures containing criteria to know when the secondary plant was appropriately aligned. The licensee failed to provide the operators with quality procedures containing criteria to know when the secondary plant was appropriately aligned. Corrective actions taken by the licensee include procedural enhancements to ensure that systems are lined up properly before continuing with plant startup. The primary cause of this finding is related to the cross-cutting area of human performance.

  The finding is greater than minor because it involved the configuration control, human performance, and procedure quality attributes of the Reactor Safety/Initiating Events Cornerstone and affects the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations. Specifically, an incorrect lineup could exist in the secondary system, resulting in an initiating event or an unanalyzed secondary system response after a trip. The finding is determined to be of very low safety significance because the issue did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. (Section 1R14)

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 activities and with the following exceptions:

- power was reduced to approximately 72 percent on October 1, 2005, to perform maintenance on a heater drain pump; full power was resumed on October 4, 2005;
- the plant was manually tripped on November 21, 2005, due to a service water (SW) leak on the main generator hydrogen cooler; and
- on November 28, 2005, following hydrogen cooler repairs and during the associated power ascension, the plant sustained an automatic trip due to a feedwater pump breaker overcurrent condition; full power was resumed on December 3, 2005.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

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 low temperatures and tornado winds. 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 for a total of two samples:

- station switch yard prior to the onset of inclement weather; and
- station cold weather preparations.

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 four samples:

- Train "B" component cooling water (CCW) with Train "A" CCW heat exchanger out-of-service for maintenance;
- Train "A" CCW train with Train "B" CCW train out-of-service for maintenance;
- auxiliary feedwater (AFW) system during plant shutdown; and
- SW system with the system in an abnormal lineup due to components out-of-service for maintenance.

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-33, Condensate Storage Tank Room;
- Fire Zone AX-36, Turbine Building Vent Fan Room;
- Fire Zone TU-97, 1B Battery Room;
- Fire Zone TU-98, 1A Battery Room;
- Fire Zone TU-96, Turbine Oil Storage Room; and
- Fire Zone TU-22, Turbine Building Basement.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors performed an annual review of the licensee's testing of heat exchangers. The inspection focused on potential deficiencies that could mask the licensee's ability to detect degraded performance, identification of any common cause issues that had the potential to increase risk, and ensuring that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspection activities included, but were not limited to, a review of the licensee's observations as compared against acceptance criteria, and testing methodologies with a focus on the accuracy of the utilized methodology. An evaluation of the testing methodology as compared to the results of alternative methods was not performed. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing criteria. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors selected the following equipment for a total of one sample:

- containment fan cooling units.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Biennial Operating Test Results

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the annual operating examination which consisted of Job Performance Measure operating tests and simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee during October/November/December 2005. In addition, the inspectors reviewed the overall pass/fail results for the biennial written examination (also required to be given per 10 CFR 55.59(a)(2)) administered by the licensee during the same time as the operating tests. The overall results were compared with the significance determination process (SDP) in accordance with NRC Inspection Manual Chapter (IMC) 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)."

b. Findings

No findings of significance were identified.

.2 Quarterly Review of Licensed Operator Requalification

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, interpretations of Technical Specifications (TS), simulator fidelity, and licensee critique of performance. As part of this inspection, the documents listed in the Attachment were reviewed.

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

- a training crew during an evaluated simulator scenario that included a failure of a steam flow transmitter, turbine control valve servo failures, a steam generator power-operated relief valve failing open, a safety injection pump failing to start, a pressurizer power-operated relief valve opening due to a failed pressure transmitter, a steam line break inside containment which resulted in a manual reactor trip with an automatic safety injection, reduced reactor pressures and levels, entry into the emergency operating procedures, and increased pressures and temperatures inside containment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the following 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 corrective action program (CAP) documents, 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:

- a function-oriented review of the charging system because the licensee designated it as risk significant under the Maintenance Rule.

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 four samples:

- unplanned power reduction to evaluate high bearing temperature on main feedwater pump;
- repair of nuclear instrument -41 isolation amplifier;
- failure of turbine first stage pressure indication; and
- unauthorized work on service water valve SW-4B.

b. Findings

Introduction: On October 5, 2005, a finding of very low safety significance (Green) was self-revealed when service water valve SW-4B failed to meet inservice testing (IST) stroke time requirements during the performance of Surveillance Procedure SP-02-138B. Additionally, an unplanned entry into the associated TS Limiting Condition for Operation (LCO) occurred. The condition occurred because the licensee made adjustments to safety-related SW-4B, "Turbine Building Service Water Train 'B' Header Isolation," without procedural guidance to perform such adjustments. The primary cause of this finding was related to the cross-cutting area of human performance because maintenance was performed without required procedures.

Description: On October 5, 2005, the setpoints for both open and closed limited switches on valve SW-4B were found to be not at the desired setpoint during the performance of procedure ICP-02-42, "SW-4B Service Water Turbine Building Header 1B Control Valve Test." As a result, both open and closed limited switches were adjusted to bring them closer to the desired setpoint. Procedure ICP-02-42 contained no guidance on adjustment of the limit switches and did not require notification of plant operations as to the potential impact on IST requirements. Upon completion of ICP-02-42, and during operability verification of SW-4B, which was being performed per Procedure SP-02-138B, "Train Service Water Pump and Valve Test-IST," SW-4B failed to meet its acceptance criteria and was declared inoperable.

Valve SW-4B is required to automatically close upon receipt of a Safety Injection Sequence signal coincident with a low-pressure signal in the associated SW header. This ensures that the nonsafety-related turbine building loads are isolated, ensuring that the SW system is capable of supplying associated safety-related mitigating system components. As a result of SW-4B being inoperable, the TS LCO was entered, and actions were taken to deactivate the valve in the closed position at which time the LCO was exited. During interviews with responsible engineering personnel, the inspectors were told that the SW-4B limit switch adjustments were considered to be within the skill of the craft. However, without procedural guidance, plant personnel had no way to determine the impact on IST requirements of their adjustments or the resultant impact on operability of SW-4B.

Analysis: The inspectors determined that adjusting safety-related limit switches without procedural guidance was a performance deficiency warranting a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued on September 30, 2005. The inspectors determined that

the finding was more than minor because performing adjustment of safety-related equipment without procedural guidance, if left uncorrected, would become a more significant safety concern. Additionally, the finding is associated with the Reactor Safety/Mitigating Systems cornerstone attribute of procedure quality and affects the associated cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the primary cause of this finding was related to the cross-cutting area of human performance.

The inspectors evaluated the significance of the finding in accordance with IMC 0609, "Significance Determination Process." Using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors answered "no" to all five screening questions in the Phase 1 Screening Worksheet under the Mitigating Systems column. Therefore, the inspectors concluded this finding was of very low safety significance (Green).

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 the type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to this, on October 5, 2005, the licensee made adjustments to the limit switches on SW-4B, "Turbine Building Service Water Train 'B' Header Isolation Valve," without procedural guidance on how such adjustments should be made or what the effect would be on the valve. This resulted in SW-4B failing to meet its required performance criteria per surveillance procedure SP-02-138B and in an unplanned entry into a TS LCO. Corrective actions initiated by the licensee included placing numerous instrumentation and control procedures on administrative hold pending procedural revisions and briefings with program owners to ensure future compliance. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program, this violation is being treated a Non-Cited Violation consistent with Section VI.A of the NRC enforcement policy (NCV 05000305/2005017-01).

1R14 Personnel Performance During Non-Routine Plant Evolutions and Events (71111.14)

a. Inspection Scope

The inspectors reviewed personnel performance to unplanned evolutions to review operator performance and the potential for operator contribution to the transient. 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 two samples:

- failure of T_{ave} (reactor coolant loop average temperature) circuit module and resultant insertion of control rods; and
- operator response to carbon dioxide (CO_2) system actuations during plant startup activities on November 25, 2005.

b. Findings

Introduction: The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," having very low safety significance (Green) for the failure to include adequate acceptance criteria in procedure N-0-02-CLA, "Plant Prestartup Checklist." This issue was self-revealed on November 25, 2005, after improper lineup of the air removal system resulted in two actuations of the CARDOX® CO_2 fire suppression system in the vicinity of the main turbine bearing #6. Additionally, the finding affected the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations.

Description: On November 25, 2005, during plant startup activities, the licensee implemented procedure N-0-02-CLA, "Plant Prestartup Checklist," to facilitate alignment of plant systems and equipment required to be in operation during plant startup. Shortly after beginning to draw condenser vacuum using the hogging jet, the licensee received main turbine fire alarms and the CARDOX® system actuated at 4:09 p.m. central standard time (CST). The licensee initiated an investigation to determine the circumstances surrounding the event.

During startup, air sampling was being performed in the CARDOX® storage tank room because of previous issues with CO_2 leaks while purging the main generator. The samples indicated life threatening levels of CO_2 and an Unusual Event was declared at 4:24 p.m. CST. No personnel were harmed as a result of the CO_2 release and no plant equipment was adversely affected.

At 7:11 p.m. CST, while continuing with procedure N-0-02-CLA, the licensee again received fire alarms and an actuation of the CARDOX® system in the vicinity of the main turbine bearing #6. Carbon dioxide levels did not reach life threatening levels in the CARDOX® storage tank room during this actuation because the CARDOX® storage tank had been isolated for investigation of the prior event. The Unusual Event was terminated at 7:15 p.m. CST.

The licensee's evaluation determined that during startup, the main turbine gland steam condenser exhaust was incorrectly lined-up through a turbine building roof vent instead of the required wall vent. The licensee determined that procedure N-AR-09-CL, "Air Removal System Prestartup Checklist," had not been completed prior to startup of the air removal system. The governing procedure, N-0-02-CLA, referenced N-AR-09-CL as a procedure that could be performed at the Shift Manager's discretion. If N-AR-09-CL had been performed, the gland steam condenser exhaust would have been released through the turbine building wall vent before initiating the hogging jet that was used to establish condenser vacuum. Because N-AR-09-CL was not performed, a back-pressure condition existed in the low-pressure gland steam condenser exhaust

line, resulting in steam intermittently escaping from the glands. This, in turn, resulted in actuation of a fire protection thermostat sensor above turbine bearing #6. The fire protection system then responded as designed by actuating the CO_2 suppression nozzle above the bearing.

Step 1.2 of N-0-02-CLA stated, in part, that "After a plant trip or short term shutdown, only those checklists required by the Shift Manager need be done." These checklists include, for example, the condensate, circulating water, air removal, and feedwater systems. This procedure did not contain criteria for which checklist procedures should be performed nor did it alert operators of necessary re-alignments, such as those in the air removal system, that need be done before establishing condenser vacuum. These inadequacies resulted in the Shift Manager not performing N-AR-09-CL on November 25, 2005, during startup activities. Although no equipment was affected as a result of this issue, adverse CO_2 levels in the CARDOX® tank room resulted in declaration of an Unusual Event. Additionally, the inspectors ascertained that other checklists for the condensate and feedwater systems, if not performed, could increase the likelihood of a initiating event once at power.

Analysis: The inspectors determined that the failure to maintain an adequate startup checklist was a performance deficiency affecting the Reactor Safety/Initiating Events cornerstone and warranted a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." The inspectors determined that the finding was greater than minor because it involved the configuration control, human performance, and procedure quality attributes of the Initiating Events cornerstone. Additionally, the finding affected the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations. The inspectors also determined that the failure to perform N-AR-09-CL during startup impacted the cross-cutting area of human performance. Because operators rely on procedure completeness and accuracy to satisfactorily perform tasks, the lack of clear criteria for critical system alignments during startup required the Shift Manager to make decisions based on memory. Incomplete or inaccurate procedures increases the likelihood of human error, and in this case resulted in multiple actuations of the CO_2 fire suppression system.

The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," because the finding was associated with an increase in the likelihood of an initiating event. During the Phase 1 screening, the inspectors found that the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. Therefore, the inspectors concluded the issue was of very low safety significance (Green).

Enforcement: Appendix B, Criterion V of 10 CFR 50 requires, in part, that procedures affecting quality include appropriate acceptance criteria. Procedure N-0-02-CLA, "Plant Prestartup Checklist," was inadequate in that it did not contain criteria for which checklists were critical for alignment of supporting systems. Step 1.2 of N-0-02-CLA stated, in part, that "After a plant trip or short term shutdown, only those checklists required by the Shift Manager need be done." However, on November 25, 2005, N-AR-09-CL, "Air Removal System Prestartup Checklist," was not performed during

plant startup. This resulted in two actuations of the CO_2 suppression system and required, on one occasion, the declaration of an Unusual Event. Once identified, the licensee isolated the CARDOX® storage tank and initiated corrective actions to modify startup procedures, specifically N-0-02-CLA, to include criteria for critical support system lineups. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program (as CAP030273), this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000305/2005017-02).

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 TS, 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 evaluations for a total of three samples:

- shield building ventilation dampers not lubricated within acceptable time frame;
- penetration room boot seals had one of two clamps installed; and
- nuclear instrument -41 with delta-flux amplifier out-of-service.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors performed a semiannual review of the cumulative effects of operator workarounds (OWAs). The inspectors reviewed OWAs to identify any potential effect on the functionality of mitigating systems. The inspection activities included, but were not limited to, a review of the cumulative effects of the OWAs on the availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents. Additionally, reviews were conducted to determine if the workarounds could increase the possibility of an initiating event, were contrary to training, required a change from long-standing operational practices, created the potential for inappropriate compensatory actions, impaired access to equipment, or required equipment uses for which the equipment was not designed. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors focused the inspection on the licensee's list of documented workarounds. This observation constituted one sample.

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. 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:

- SW isolation to non-safety-related loads.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors verified that the post-maintenance test 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 five samples:

- turbine-driven auxiliary feedwater (TDAFW) pump steam supply MS-100B;
- SW-4B SW isolation to turbine building;
- TDAFW pump after oil change;
- T_{ave} circuit module; and
- CCW heat exchanger temperature controller.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

a. Inspection Scope

The inspectors evaluated outage activities for two unplanned outages, an unplanned outage to repair a main generator hydrogen cooler SW leak on November 21, 2005, and an automatic reactor trip, as a result of a feedwater pump breaker overcurrent trip, which occurred during the associated power ascension on November 28, 2005. Full power was resumed on December 3, 2005. 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 review of the forced outage work plan. As part of this inspection, the documents listed in the Attachment were reviewed. 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:

- review of the ready-backlog;
- control room turnover meetings and selected pre-job briefings;
- reactor shutdown;
- startup and heatup activities, including criticality, main turbine generator startup and synchronization, and elements of power escalation to full power; and
- identification and resolution of problems associated with the outage.

b. Findings

No findings of significance were identified.

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 six samples:

- Channel 2 (White) instrument channel test;
- SW-4B timing test;
- SW-4B accumulator leak rate test;
- Emergency Diesel Generator “A” fast start test;
- charging pump control loop testing; and
- reactor coolant system leak checks.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed temporary modifications to assess the impact of the modification on the safety function of the associated system. The inspection activities included, but were not limited to, a review of design documents, safety screening documents, USAR, and applicable TS to determine that the temporary modification was consistent with modification documents, drawings and procedures. The inspectors also reviewed the post-installation test results to confirm that tests were satisfactory and the actual impact of the temporary modification on the permanent system and interfacing systems were adequately verified. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors selected the following temporary modifications for review for a total of two samples:

- flange bolting on flange FE-459; and
- feedwater heater 15b leak repair.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

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:

- a technical support center table top exercise performed on December 5, 2005. Drill notifications were simulated with state, county, and local agencies for a general emergency classification.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

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 above, 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 corrective action program, and

verified that problems included in the licensee's CAP were properly addressed for resolution. Attributes reviewed included: complete and accurate identification of the problem; timeliness commensurate with the safety significance; proper and adequate evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and classification, prioritization and focus 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 items entered into the licensee's corrective action program. This review was accomplished by reviewing daily corrective action program summary reports and attending corrective action review board 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 CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspector's review was focused on restoration of operable but degraded conditions identified on the licensee's forced outage plan, but also considered the results of the daily inspector corrective action program item screening discussed in Section 4OA2.2, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of July through December 2005, although some examples expanded beyond those dates when the scope of the trend warranted.

Inspectors reviewed adverse trend corrective action program items associated with various events that occurred during the period. The review also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self assessment reports, and maintenance rule assessments. The specific items reviewed are listed in the Documents Reviewed section attached to this report. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action

program trending documents. Corrective actions associated with a sample of the issues identified in the licensees trend report were reviewed for adequacy.

The inspectors also evaluated the report against the requirements of the corrective action program as specified in the main program administrative procedure and of 10 CFR 50, Appendix B. Additional documents reviewed are listed in the Attachment to this report.

Assessment and Observations

There were no findings of significance identified. The inspectors evaluated the licensee trending methodology and observed that the licensee had performed a detailed review. The licensee routinely reviewed cause codes, involved organizations, key words, and system links to identify potential trends in their CAP data. The inspectors compared the licensee process results with the results of the inspectors' daily screening and did not identify any discrepancies.

b. Findings and Issues

No significant issues were identified.

4OA3 Event Follow-up (71153)

Notification of Unusual Event as a Result of the Discharge of Fire Suppression Carbon Dioxide

a. Inspection Scope

On November 25, 2005, the licensee declared a Notification of Unusual Event as a result of an inadvertent actuation of the CO_2 fire suppression system to the main generator bearings. The inspectors responded to the event and notified regional management of related observations. The cause of the issue was an inadequate procedure and attributed to the cross-cutting area of human performance (Section 1R14).

b. Findings and Issues

No significant issues were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. K. Hoops and other members of licensee management on January 4, 2006. 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

An interim exit was conducted for:

- Licensed Operator Requalification 71111.11 with Mr. David Fitzwater, Supervisor, Nuclear Operations Training, on December 12, 2005, via telephone.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Gaffney, Site Vice-President
K. Hoops, Site Operations Director
L. Hartz, Engineering Improvement Plan Director
K. Davison, Plant Manager
L. Armstrong, Site Engineering Director
W. Henry, Outage and Scheduling Manager
S. Baker, Radiation Protection Manager
T. Breene, Regulatory Affairs Manager
J. Ruttar, Operations Director
W. Flint, Chemistry Manager
W. Hunt, Maintenance Manager
D. Fitzwater, Supervisor, Nuclear Operations Training

Nuclear Regulatory Commission

P. Louden, Chief, Reactor Projects Branch 5

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000305/2005017-01	NCV	Adjustments performed on safety-related service water valve 4B without procedure resulted in valve being declared inoperable (Section 1R13)
05000305/2005017-02	NCV	Inadequate startup procedure resulted in an inadvertent carbon-dioxide fire suppression discharge and declaration of a Notification of Unusual Event (Section 1R14)

Discussed

NONE

LIST OF DOCUMENTS REVIEWED

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

Section 1R01: Adverse Weather Protection
CAP029645; GNP-12.06.01; October 15, 2005
GMP-172; Tornado Missile Hazard Monthly Inspection; August 18, 2005
GNP-12.06.01; Cold Weather Operations; Revision C; November 28, 2005
Substation Tornado Missile Inspection; October 12, 2005
Substation Inspection Report; September 29, 2005

Section 1R04: Equipment Alignment
CAP025574; Out of Spec SW-3A per ICP; February 23, 2005
CAP030251; SW-3A Close Stroke Time Increase; November 23, 2005
CAP030268; Inability to Achieve Full Closed Seat While AOV Testing of SW-3A/CV-31038; November 24, 2005
M-FEW-05B-CL; Auxiliary Feedwater System Prestartup Checklist; Revision AL
N-SW-02-CL; SW System Prestartup Checklist; Revision AU
N-CC-31-CL; Component Cooling System Prestartup Checklist; Revision AA
SP-31-168B; Train 'B' Component Cooling Pump Valve Test - IST; Revision E
SP-31-168A; Train 'A' Component Cooling Pump and Valve Test - IST; Revision F

Section 1R05: Fire Protection
A-526-1; Special Ventilation Boundary; Revision B
A-525-1; Steam Exclusion Boundary; Revision C
CAP030290; Actions Required for Inoperable CO2 Systems; November 27, 2005
CAP019788; Declaration of Unusual Event; February 3, 2004
DCR018962 [design change request]; DPR 356, Install a permanent CO2 monitoring system in the Cardox room; March 30, 2005
Fire Plan Drawings AX-33,36;TU-22,96,97,98;dated 05/07/04
Kewaunee Nuclear Plant Fire Protection Program Analysis, Rev. 6, dated March 2005
TU-22, TU-96; Turbine Building Basement; Revision C

Section 1R07: Heat Sink Performance
C11343; 2001 SW Flow Test Analysis
C11344; 2001 SW System Flow Test
CAP019545; Extent of Condition - SI Pump Lube Oil Coolers
PMP-18-13; Reactor Building Ventilation (RBV) - Containment Fan Coil Unit Performance Monitoring Performed 12-21-04; Revision B
PMP-18-13; RBV - Containment Fan Coil Unit Performance Monitoring Performed 4-15-05; Revision B

Section 1R11: Licensed Operator Requalification Program
Simulator Exercise Guide "Dynamic evaluation - Power Operations Emergency" LRC-05-DY501 Revision A

Section 1R12: Maintenance Effectiveness
CAP012660; Charging Pump '1B' 100 percent Speed Found Low During ICP-35-49; August 21, 2002
CAP013029; Charging Pump 'C', Blower Motor Rotation Found Operating in Wrong Direction; September 20, 2002
CAP013462; Charging Pump High Speed Stop Cannot Be Set; October 25, 2002
CAP013816; Perform Maintenance Rule Evaluation on Second Occurrence in WO 02-3231; November 27, 2002
CAP013815; Perform Maintenance Rule Evaluation on WO 02-3231; November 27, 2002
CAP014333; Charging Pump 'C' Discharge Dampener; January 14, 2003
CAP014473; Charging Pump 'A' OOS [out-of-service]; January 26, 2003
CAP014438; Perform Maintenance Rule Evaluation on CWO 03-000147; January 23, 2003
CAP014670; Charging Pump 'A' Out-of-Service; February 9, 2003
CAP015159; Charging Pump 'A' Erratic Sheave Operation During Exercise; March 9, 2003
CAP017701; Charging Pump 'A' and 'C' RPM Values Below Reference Values in RT-CVC-35E; August 15, 2003
CAP020348; Charging Pump 'B' Speed Controller Out of Spec; March 8, 2004
CAP021764; Charging Pump 'B' Belts Observed Loose with Increased Wear; July 4, 2004
CAP021903; As Found Condition of 'B' Charging Pump Vari-Drive; July 20, 2004
Charging Pumps; Monthly Activity - Unavailability; April, 2004 - September, 2005
Maintenance Rule Scoping Questions; Functions: 35-05 Provide RCS Inventory Control; October 28, 2005
Maintenance Rule Scoping Questions; Functions: 35-06 Provide Reactor Coolant Pump Seal Water; October 28, 2005
Maintenance Rule System Basis; Revision 8
Plant Maintenance Rule Data Binder; Book 11; Charging Pumps

Section 1R13: Maintenance Risk Assessments and Emergent Work Control
ACE003110; SW-4B OOS Following AOV [Air-Operated Valve] Testing; October 7, 2005
CA021324; Determine Past Operability of SW-4B Prior to Performance of ICP-02.42; November 7, 2005
CA021831; SW-4B OOS Following AOV Testing; December 28, 2005
CAP029508; SW-4B OOS Following AOV Testing; October 5, 2005
CAP029515; Limit Switch Desired Actuation Point not Obtainable Due to Configuration; October 6, 2005
CAP029521; Site Clock Reset Red Sheet; Unplanned Entry into an LCO; October 5, 2005; Time 1920
CAP029544; SW-4B Failed RT-SW-02D; October 7, 2005
CAP029549; Aborted RT-SW-02D Due to Problem with Volumetrics Leakrate Monitor; October 8, 2005
CAP029562; SW-4B Limiting Stroke Time Value in SP-02-138B is not Standard; October 10, 2005
CAP029566; Use of Two Open Limit Switches for Timing the Close Strokes of SW-4A, SW-4B; October 10, 2005

CAP029771; Questions Raised by the NRC on the IST Timing of the SW-4A and SW-4B Valves
CAP029916; 1A-503-2 Operability Affecting SW-4B Operability; November 3, 2005
CAP030097; Failed Feedwater Pump Pinion Temperature Indication
Safety Monitor Risk Look Ahead; October 3 through October 10, 2005
CAP030352; RT-SW-02D, SW-4B Accumulator Leak Test Does Not Agree with Tech Specs; November 30, 2005
CE016534; Questions Raised by the NRC on the IST Timing of the SW-4A and SW-4B Valves; October 28, 2005
Emergent Work Risk Evaluation; October 5, 2005; 14:30
Emergent Work Risk Evaluation; October 5, 2005; 11:00
Emergent Work Risk Evaluation; October 3, 2005; 13:00
Emergent Work Risk Evaluation; October 6, 2005; 0017
RT-SW-02D; SW-4B Accumulator Leakage Test; August 6, 1996
SSFI Document Sheet D001-025; Mechanical Design; Failure Mode - TB SW HDR Isolation Valves CV31084/31085
Safety Monitor Schedule Evaluation; October 3 through October 10, 2005
WO05-010749-000; Monitor Leak Rate Monitor; October 8, 2005
WO05-010767-000; Actuator-Service Water Turbine Building Header 1B CV; October 7, 2005
XX-100-694; Nuclear Instrumentation System Power Range –41 Functional Block Diagram; Revision 7A
XK-100-553; Instrument Block Diagram Rod Control RR109 (RCS) Layout; Revision 1N

Section 1R14: Personnel Performance During Non-Routine Plant Evolutions and Events
CAP029460; Failure of Auctioneered Hi Tave
CAP030273; Unusual Event declared due to Carbon Dioxide discharge; November 25, 2005
ICP-47-06; RCP - Tave, Delta T, and Rod Insertion Miscellaneous and Deviation Alarms Instrument Calibration; Revision M
N-0-02-CLA; Plant Prestartup Checklist; Revision L
N-AR-09; Air Removal System; Revision AE
N-AR-09-CL; Air Removal System Prestartup Checklist; Revision Q

Section 1R15: Operability Evaluations
CAP030175; Shield Building Flexible Seals - Penetrations 2 and 36NW
CAP030059; Penetration 37NE
CAP030170; Flex Seal for Penetration 31 Does Not Meet Detail Requirements
CAP030103; Pene 37 NE (ref CAP030059) Op Determination Not Documented Properly
CAP030084; Extent of Condition from CAP030059 - Missing Clamps on Pipe Boot
CAP030085; Extent of Condition from CAP030059 - Missing Clamps on Pipe Boot
CAP030095; Extent of Condition from CAP030059 - Missing Clamps on Pipe Boot Pen 38EN
CAP030096; Extent of Condition from CAP030059 - Missing Clamps on Pipe Boot PEN 46E
CAP029759; PM24-011, WO 04-11464, SBV [shield building ventilation] Inspect/Lube Dampers >25 percent Overdue
CAP030182; Delta-flux Alarms Due to –41
CAP030186; Operability/Reportability Review –381; Shield Building Penetration Seals; Revision S
OPR000129; Penetration 46E
SP-24-107; SBV Monthly Test; Revision AB

XX-100-694; Nuclear Instrumentation System Power Range –41 Functional Block Diagram; Revision 7A

Section 1R16: Operator Workarounds
Operator Workaround No. 05-08; E2/E3 entry requires dispatching NAO [nuclear auxiliary operator] to throttle AFW; issued May 9, 2005
Operator Workaround No. 05-11; CO2 to Relay Room out-of-service for DPR 3330, Relief Damper Installation; issued June 20, 2005
Operator Workaround Aggregate Impact List, Control Room

Section 1R17: Permanent Plant Modifications
2308C; Calculation - Evaluation of Stem Torque Requirements for AOVs SW-4a and SW-4B Using the EPRI [Electric Power Research Institute] MOV Butterfly Valve Performance Prediction Methodology; Revision 0
DPR-3338 Service Water Isolation to Turbine Building; Revision 1
JLV-2001-008; Calculation Note - MSLB [main steam line break] Cutout Sensitivity; November 20, 2001
Memo D. Cole to C. Henning; DPR 3338 Control Logic Design; November 14, 2005

Section 1R19: Post-Maintenance Testing
05-010721-000; Following Adjustments in ICP-02-42, SW-4B SW Turbine Building Header 1B Control Valve Test, the Retest Timing Criteria of SP-02-138B was not met. Adjust the close timing of SW-4B Using the Needle Valve Adjustment
50.59 Applicability Review; Perform Partial Procedure on MS-100B After Maintenance
50.59 Applicability Review; Perform Partial Procedure on SP-02-138B; Train B SW Pump and Valve Test - IST
CAP029544; SW-4B Failed RT-SW-02D; October 7, 2005
CAP029508; SW-4B OOS Following AO Testing; October 5, 2005
CAP029549; Aborted RT-SW-02D Due to Problem with Volumetrics Leakrate Monitor; October 8, 2005
CAP029566; Use of Two Open Limit Switches for Timing the Close Strokes of SW-4A, SW-4B; October 10, 2005
CAP029562; SW-4B Limiting Stroke Time Value in SP-02-138B is not standard; October 10, 2005
CAP029515; Limit Switch Desired Actuation Point Not Obtainable Due to Configuration; October 6, 2005
CAP030303; Water in the oil of the TDAFW turbine outboard bearing; November 28, 2005
CAP029460; Failure of Auctioneered Hi Tave
Control Room Logs; October 5, through October 9, 2005; Day and Night Shift
DPR 3338; SW Isolation to the Turbine Building; Revision 1
DPR 3338 Control Logic Design Correspondence
GMP-236-02; MOV Diagnostic Test Analysis and Acceptability Determination; Revision E
GNP-08.02.12; Post-Maintenance Testing/Operations Retest; Revision D
ICP-02-21; 50.59 Applicability Review; December 22, 2005
ICP-02-21; SW Component Cooling Heat Exchanger 1A Temperature Control Loop; Revision J
ICP-47-06; RCP - Tave, Delta T, and Rod Insertion Miscellaneous and Deviation Alarms Instrument Calibration; Revision M
ICP 47-06 (Partial); 50.59 Applicability Review; October 6, 2005

JLV-2001-008; Calculation Note MSLB CFCU [containment fan cooling unit] Cutout Sensitivity; November 20, 2001
OPR 132; TDAFW Pump Drive Turbine; December 1, 2005
POD [plan of the day] Work Schedule; October 3 through October 10, 2005
RT-SW-02D; SW-4B Accumulator Leakrate Test; Revision C
RT-FW-05B-1; AFW Lube Oil Pump Run; Revision ORIG; performed November 30, 2005
SP-05B-284; Turbine Driven AFW Pump Full Flow Test - IST; Revision U (Freq Q)
SP-05B-333; Turbine Driven AFW Pump Recirculation Flow Test - IST; Revision E; performed November 30, 2005
SP-31-168A; Train 'A' Component Cooling Pump and Valve Test - IST; Revision F
SP-31-168B; Train 'B' Component Cooling Pump Valve Test - IST; Revision E
WO 05-007326-000 [Work Order]; SW-4B Actuator; At the I/A Lines Install a 3/8" SS Swagelok Tees with Plugs near the Actuator in Both the Open and Closed Air Lines. These Test Fittings are Needed for AO Diagnostic Testing and are Required Prior to Running ICP-02-42.
WO 05-12948; SP-05B-333 (Partial); November 30, 2005

Section 1R20: Outage Activities
Active Operable but Degraded Open Items, November 22, 2005
CAP029719; Reactor Cavity Heat Sink with Level .23 Feet above Reactor Vessel Flange
Control Room Logs/eSOMS Day and Night Shifts; November 23 through November 22, 2005
DPR Status Report, All Open DCRs, November 20, 2005
Forced Outage Checklist; November 20, 2005
–0-02; Plant Startup from Hot Shutdown to 35 percent Power; Revision AS
–0-02-CLB; Precritical Checklist; Revision AQ
–0-04; 35 percent Power to Hot Shutdown Condition; Revision AC

Section 1R22: Surveillance Testing
CAP030381; Reactor Coolant System Leak Rate Exceeds 0.2 GPM; December 4, 2005
CAP030478; Identified leakage past RC-439; December 10, 2005
ICP-35-48; CVCS - Charging Pump 1C Speed Control Loop 428C Calibration; September 12, 2002
SP-47-316B; Channel 2 (White) Instrument Test; Revision V
SP-42-047A; Diesel Generator A Operational Test Rev. AA
SP-36-082; Reactor Coolant System Leak Rate Check; performed December 4, 2005
SP-36-082; Reactor Coolant System Leak Rate Check; performed December 10, 2005
SP-02-138A; Train A Service Water Pump and valve Test - IST; Revision K

Section 1R23: Temporary Plant Modifications
CAP023864; Slight Leakage at FE-459, Flow Orifice for RCS Loop B RTD; November 7, 2004
CAP023971; Wrong Size Studs Found for FE-459 (equipment # 27040); November 11, 2004
CAP028354; Fitting for Test Element 27072, FEW Heater 15B to Heater Drain Tank F Test, Has a Leak; July 12, 2005
CAP029436; Steam Leak on Annubar #27071; September 29, 2005
SCRN 05-140-00; Install Furmanite Enclosure to Repair Steam Leak on Annubar 27071
TCR 04-016; FE-459 Flange Bolting

Section 1EP6: Drill Evaluation
Emergency Preparedness Drill and Exercise Performance Briefings, Practice, and Opportunity-evaluation Tabletop Schedule; November 28, 2005; Revision 1

Scenario ID, Technical Support Center Evaluation 1; Performed December 5, 2005

Section 4OA2: Identification and Resolution of Problems
Active Operable but Degraded Open Items, November 22, 2005
Active Night Order Book; October 24, 2005
CAP030560; Establish One Problem - One CAP, CAP Process
CAP030115; Intermittent Points On the PPSC
Control Room Deficiency Log PPCS Deficiency List; October 31, 2005
DPR Status Report, All Open DCRs, November 20, 2005
Forced Outage Checklist; November 20, 2005

Section 4OA3: Event Follow-up
CAP030273; Unusual Event declared due to Carbon Dioxide discharge; November 25, 2005
EPIP-AD-02; Emergency Class Determination; Revision AM
N-0-02-CLA; Plant Prestartup Checklist; Revision L
N-AR-09; Air Removal System; Revision AE
N-AR-09-CL; Air Removal System Prestartup Checklist; Revision Q

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
AOV	Air-Operated Valve
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
CST	Central Standard Time
DCR	Design Change Request
DRP	Division of Reactor Projects
EPRI	Electric Power Research Institute
IMC	Inspection Manual Chapter
IR	Inspection Report
IST	Inservice Testing
LCO	Limiting Condition for Operation
MSLB	Main Steam Line Break
NAO	Nuclear Auxiliary Operator
NCV	Non-Cited Violation
NRC	U.S. Nuclear Regulatory Commission
OOS	Out-of-Service
OWA	Operator Workaround
RA	Risk Assessment
RTD	Resistance Temperature Detector
SBV	Shield Building Ventilation
SDP	Significance Determination Process
SP	Surveillance Procedure
SW	Service Water
T_{ave}	Reactor Coolant Loop Average Temperature
TDAFW	Turbine-Driven Auxiliary Feedwater
TS	Technical Specifications
USAR	Updated Safety Analysis Report