

November 8, 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 05000305/2006004

Dear Mr. Christian:

On September 30, 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 October 4, 2006, 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.

This reports documents one NRC-identified finding of very low safety significance. This finding did not involve a violation of NRC requirements. Additionally, two licensee-identified violations which were determined to be of very low safety significance are listed in this report. However, because of the very safety significance and because they are 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 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 (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/

Patrick L. Loudon
Branch 5
Division of Reactor Projects

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

Enclosure: Inspection Report 05000305/2006004
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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L. Cuoco, Esq., Senior Counsel
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J. Kitsembel, Public Service Commission of Wisconsin
State Liaison Officer, State of Wisconsin

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000305/2006004

Licensee: Dominion Energy Kewaunee, Inc.

Facility: Kewaunee Power Station

Location: Kewaunee, WI 54216

Dates: July 1 through September 30, 2006

Inspectors: S. Burton, Senior Resident Inspector
P. Higgins, Resident Inspector
R. Winter, Operations Engineer
J. Neurauter, Senior Reactor Inspector
T. Ploski, Senior Emergency Preparedness Analyst
J. Jandovitz, Reactor Inspector
M. Jordan, Reactor Inspector
D. McNeil, Senior Operations Engineer (Lead Inspector)
M. Bielby, Senior Operations Engineer
C. Moore, Operations Engineer

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

Enclosure

SUMMARY OF FINDINGS

IR 05000305/2006004; 07/01/2006 - 09/30/2006; Kewaunee Power Station. Event Followup.

This report covers a 3-month period of inspection by resident inspectors and announced inspections by regional specialists. The baseline inspection was conducted by regional reactor inspectors, a regional health physicist inspector, and resident inspectors. One Green finding was identified, but there was no violation of NRC requirements. 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 finding of very low safety significance (Green) was identified by the inspectors when the licensee failed to properly apply shutdown Technical Specifications (TSs) for the residual heat removal (RHR) system with both emergency diesel generators (EDGs) declared inoperable. While reviewing startup preparations being made for a mode change, the inspectors identified that TSs required both RHR systems to be operable and that both EDGs were inoperable due to tornado failure susceptibilities, thereby rendering both trains of RHR inoperable as required by the related power requirements TS. The licensee concurred with the inspectors observations, prevented the mode change, and issued the related licensee event report. Corrective actions, to date, included restoration of EDG operability prior to making a mode change and procedural enhancements.

The inspectors determined that the finding is greater than minor because if left uncorrected it would become a more significant safety issue: the licensee would have made a mode change without the required operable equipment. This finding was of very low safety significance because the licensee returned the EDGs to operability prior to making any mode changes, no violation of NRC requirements was identified, and the finding did not require a quantitative assessment using Check List 4 for "PWR Shutdown Operation with Time to Boil >2 hours and Inventory in the Pressurizer." The cause of this finding was related to the crosscutting area of human performance because procedures, specifically TSs, were available but not followed, that would have facilitated the proper performance of the task. (Section 4OA3.4)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Kewaunee operated at full power until September 1, 2006. On September 2, the Unit was taken offline for refueling and remained offline for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: 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 high temperatures. 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 summer 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:

- sheltering during severe storm warning; and
- emergency diesel generator (EDG) system during high ambient temperatures.

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 two samples:

- EDG "A" with EDG "B" out-of-service for maintenance; and
- spent fuel pool cooling with residual heat removal (RHR) out-of-service for maintenance.

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) 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 systems to assess operability and proper equipment line-up for a total of one sample:

- EDG "A" upon restoration after overhaul.

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 thirteen samples:

- Fire Zone Miscellaneous Areas, Maintenance Vehicle Garage;
- Fire Zone AX-21, 4160-Volt (V) Switchgear Room;
- Fire Zone AX-23B, Charging Pump Area;
- Fire Zone AX-22, 26, 33, 39, Condensate Storage & Reactor Make Up Water Storage Room and Adjacent Areas;
- Fire Zone TU-22, 96, Turbine Building Basement;
- Fire Zone TU-90, 91, 1A Diesel Generator & Day Tank Rooms;
- Fire Zone TU-92, 93, 1B Diesel Generator & Day Tank Rooms;
- Fire Zone AX-24, 27, Waste Handling Area;
- Fire Zone TU-95A, 480V Switchgear Bus 1-51 & 1-52 Room;
- Fire Zone TU-95B, Auxiliary Feedwater (AFW) Pump & 480V Switchgear Bus 1-61;
- Fire Zone TU-95C, AFW Pump 1A;
- Fire Zone TR-80, 81, 83, Main, Reserve, and Tertiary Auxiliary Transformer Area; and
- Fire Zone TR-84, 85, 86, Main Transformers "A," "B," and "C."

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Review (71111.05A)

a. Inspection Scope

The inspectors reviewed fire drill activities to evaluate the licensee's ability to control combustibles and ignition sources, the use of fire fighting equipment, and their ability to mitigate the event. The inspection activities included, but were not limited to, the fire brigade's use of fire fighting equipment, effectiveness in extinguishing the simulated fire, effectiveness of communications amongst fire brigade members and the control room, command and control of the fire commander, and observation of the post-drill critique. As part of this inspection, the documents listed in the Attachment were reviewed.

The inspectors observed the following fire drill for a total of one sample:

- the licensee's fire brigade response to an announced fire drill in the Maintenance Vehicle Garage.

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, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing 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:

- Safety injection pump lube oil coolers following maintenance.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (ISI) (IP 71111.08)

.1 Piping Systems ISI

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's ISI program for monitoring degradation of the reactor coolant system boundary and risk significant piping system boundaries, based on a review of nondestructive examination (NDE) records and observations.

From September 6 through 22, 2006, the inspectors evaluated activities involving NDE examinations with recordable indications, and welding. Specifically, the inspectors observed the following:

- Ultrasonic examination (UT) of feedwater weld, FW-W59, feedwater pipe to nozzle weld inside containment;
- Magnetic particle examination (MT) of FW-W59, feedwater pipe to nozzle weld inside containment; and
- Visual examination (VT) of valve bolting for valve SI-304B, Safety Injection to Reactor Vessel (RV), valve SI-303A, Safety Injection to RV, valve SI-304A, Safety Injection to RV, and valve RHR-11, RHR to B Cold Leg.

The inspectors selected these components in order of risk priority as identified in Section 71111.08-03 of IP 71111.08, "Inservice Inspection Activities," based upon the ISI activities available for review during the on-site inspection period. The inspectors evaluated these examinations for compliance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI and plant TS requirements and to determine if indications and defects (if present) were dispositioned in accordance with the ASME Code.

The inspectors reviewed the licensee's records related to disposition of recordable indications identified in four examinations. Specifically, the inspectors reviewed the evaluation records with recordable indications accepted for continued service for:

- ISI Indication Evaluation Record F104, Pipe Support RRHR-H2, Rod Not in Tension;
- ISI Indication Evaluation Record F111, Pipe Support RHR-H10H, Evidence of Leakage at Snubber;
- ISI Indication Evaluation Record F114, Pipe Support RSI-H14A, Support in Bound Condition; and
- ISI Indication Evaluation Record F117, Pipe Support SW-H153, General Corrosion.

The inspectors evaluated the disposition of indications identified during these examinations for compliance with ASME Code Section XI.

The inspectors reviewed licensee's records related to pressure boundary welding performed on the following components:

- ICS-7A valve replacement, 6-inch valve from spray pump to containment vessel; and
- CVC-5C valve replacement, charging pump C discharge valve.

The inspectors performed this review to determine if the welding acceptance and pre-service examinations (e.g., pressure testing, visual, dye penetrant, and weld procedure qualification tensile tests and bend tests) were performed in accordance with ASME Code, Sections III, V, IX, and XI.

The above review counted as one inspection sample.

b. Findings

No findings of significance were identified.

.2 Pressurized Water Reactor Pressure Vessel (RPV) Head Penetration ISI

a. Inspection Scope

The licensee completed 100 percent visual inspection of all the RPV head penetrations and 100 percent bare metal visual inspection. The inspector conducted a record review of the visual examination (photographs and data sheets) and the licensee's criteria for confirming visual examination quality and to ensure minimum examination coverage.

As of the end of operating cycle 27, the Kewaunee vessel head, which had recently been replaced, was only at 1.15 effective degradation years (EDY). To meet the inspection requirements of NRC Order EA-03-009 (issued February 11, 2003, established interim inspection requirements for RPV heads at pressurized water reactors), with respect to the replaced category, the licensee must complete a bare metal visual examination of 100 percent of the RPV head at least every third refueling outage, or 5 years which ever comes first. In the case of Kewaunee, the third refueling outage was expected to occur in Fall 2009. At the time of this report, the licensee had not determined if it would use this inspection to fulfill the visual inspection requirements of the Order.

No recordable indications were found or welded repairs necessary.

The inspectors' reviews constituted one inspection sample.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control (BACC) ISI

a. Inspection Scope

From April 16 through April 27, 2006, the inspectors reviewed the BACC activities conducted pursuant to licensee commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary."

The inspectors observed the licensee conducting a walkdown of borated systems within the containment. The inspectors observed the licensee during these examinations to evaluate compliance with BACC program and 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. In particular, the inspectors performed this observation to determine if the licensee focused BACC inspections on locations where boric acid leaks could cause degradation of safety significant components and to determine if degraded or non-conforming conditions were properly identified in the licensee's corrective action system.

The inspector reviewed pictures and data sheets from the bare metal visual examination of: (1) the reactor vessel closure head (RVCH) and vessel head penetrations (VHP), (2) the RPV bottom head penetrations and, and (3) the pressurizer bottom head heater penetrations.

The inspectors reviewed corrective actions and evaluations performed for boric acid found on reactor coolant system connected piping and components to confirm that corrective actions were consistent with requirements of Section XI of the ASME Code and 10 CFR Part 50, Appendix B, Criterion XVI, and that the minimum Code required section thickness had been maintained for the affected components. In particular, this review focused on licensee corrective actions (reference CAP033924 and CAP033924) implemented in response to identification of boric acid deposits on the main flange of the 1B reactor coolant pump and significant packing leakage from valve RC-300A.

The documents reviewed during this inspection are referenced in the attached List of Documents reviewed.

The reviews as discussed above counted as one inspection sample.

b. Findings

No findings of significance were identified.

.4 Steam Generator (SG) Tube ISI

a. Inspection Scope

From September 25 through September 27, 2006, the inspector performed an on-site review of SG tube examination activities conducted pursuant to TSs and the ASME Code Section XI requirements.

The NRC inspectors observed acquisition of eddy current (ET) data, interviewed ET data analysts, and reviewed documents related to the SG ISI program and determined that:

- in-situ SG tube pressure testing screening criteria and the methodologies used to derive these criteria were consistent with the Electric Power Research Institute (EPRI) TR-107620, "Steam Generator In-Situ Pressure Test Guidelines";
- in-situ pressure testing performance criteria were not required as there were no degraded tubes identified;
- the in-situ SG tube pressure testing screening criteria were properly applied in that there were none with measured/sized flaws;
- the number and sizes of SG tube flaws/degradation identified was bound by the licensee's previous outage Operational Assessment predictions since there were none identified;

- the SG tube ET examination scope and expansion criteria were sufficient to identify tube degradation based on site and industry operating experience by ensuring the ET scope completed was consistent with the licensee's procedures, plant TS requirements, and EPRI 1003138, "Pressurized Water Reactor Steam Generator Examination Guidelines: Revision 6";
- the SG tube ET examination scope included tube areas representing ET challenges, such as the tubesheet regions, expansion transitions, U-bends and support plates;
- the licensee did not identify new tube degradation mechanisms;
- the licensee did not require repair methods consistent with the repair processes allowed in the plant TS requirements since no flaws were found;
- the licensee primary-to-secondary leakage (e.g., SG tube leakage) was below the detection threshold during the previous operating cycle;
- the licensee retrieved all loose parts found during the visual examination and did not require any evaluations for unretrievable loose parts;
- the ET probes and equipment configurations used to acquire data from the SG tubes were qualified to detect the known/expected types of SG tube degradation in accordance with Appendix H, "Performance Demonstration for Eddy Current Examination," of EPRI 1003138, "Pressurized Water Reactor Steam Generator Examination Guidelines," Revision 6; and
- the licensee identified deviations from ET data acquisition or analysis procedures.

The inspectors performed a review of SG ISI-related problems that were identified by the licensee and entered into the corrective action program, conducted interviews with licensee staff, and reviewed licensee corrective action records to determine if:

- the licensee had described the scope of the SG related problems;
- the licensee had established an appropriate threshold for identifying issues;
- the licensee had evaluated industry generic issues related to SG tube integrity; and
- the licensee implemented appropriate corrective actions.

The inspectors performed these reviews to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the enclosure to this report.

The reviews as discussed above counted as one inspection sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 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 TSS, 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 annual examination simulator scenario.

b. Findings

No findings of significance were identified.

.2 Facility Operating History

a. Inspection Scope

The inspectors reviewed the plant's operating history from August 2004 through July 2006 to assess whether the Licensed Operator Requalification Training (LORT) program had identified and addressed operator performance deficiencies at the plant. Any deficiencies were then verified to have been addressed by the facility licensee in accordance with the station's approved Systems Approach to Training (SAT) program, which would satisfy the requirements of 10 CFR 55.59(c)(3), "On-the-job training."

b. Findings

No findings of significance were identified.

.3 Licensee Requalification Examinations

a. Inspection Scope

The inspectors performed a biennial inspection of the licensee's LORT test/examination program for compliance with the station's SAT program which would satisfy the requirements of 10 CFR 55.59(c)(4), "Evaluation." The operating examination material reviewed consisted of five operating tests, each containing approximately two dynamic simulator scenarios and approximately five job performance measures (PMs). The written examinations reviewed consisted of five written examinations, each containing approximately 35 questions. The inspectors reviewed the annual requalification operating test and biennial written examination material to evaluate general quality, construction, and difficulty level. The inspectors assessed the level of examination material duplication from week-to-week during the current year operating test, and compared the operating test material from this year's operating tests (2006) with last year's operating tests (2005). The examiners assessed the amount of written examination material duplication from week-to-week for the written examination administered in October/November 2005. The inspectors reviewed the methodology for developing the examinations, including the LORT program 2-year sample plan, probabilistic risk assessment (RA) insights, previously identified operator performance deficiencies, and plant modifications. The inspectors also reviewed CAP035496, "NRC Comments Concerning LOR [Licensed Operator Requalification] Biennial Written Exam (2005) during 71111.11," for licensee understanding of highlighted weaknesses concerning the requalification training examination process, and CAP035476, "IDEA CAP - Create Review Checklist to Insure Requirements Are Met," to verify tracking of week-to-week examination question usage.

b. Findings

No findings of significance were identified.

.4 Licensee Administration of Requalification Examinations

a. Inspection Scope

The inspectors observed the administration of a requalification operating test to assess the licensee's effectiveness in conducting the test to ensure compliance with 10 CFR 55.59(c)(4). The inspectors evaluated the performance of one shift crew, in parallel with the facility evaluators, during two dynamic simulator scenarios and evaluated various licensed crew members concurrently with facility evaluators during the administration of several PMs. The inspectors assessed the facility evaluators' ability to determine adequate crew and individual performance using objective, measurable standards. The inspectors observed the training staff personnel administer the operating test, including conducting pre-examination briefings, evaluations of operator performance, and individual and crew evaluations upon completion of the operating test. The inspectors reviewed CAP027037, "STA [Shift Technical Advisor] Performance for Monitoring CSF Status Trees Needs Clarification," and CAP035484, "Question from NRC Inspector Regarding Time Critical Operator Action During SGTR [steam generator tube rupture]," to ensure compliance with facility procedures. The inspectors evaluated the

ability of the simulator to support the examinations. A specific evaluation of simulator performance was conducted and documented under Section 1R11.9, "Conformance With Simulator Requirements Specified in 10 CFR 55.46," of this report.

b. Findings

No findings of significance were identified.

.5 Examination Security

a. Inspection Scope

The inspectors observed and reviewed the licensee's overall LOR examination security program related to examination physical security (e.g., access restrictions and simulator considerations) and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of examinations and tests." The inspectors also reviewed the facility licensee's examination security procedure, any corrective actions related to past or present examination security problems at the facility, and the implementation of security and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the examination process. The inspectors reviewed CAP035520, "Recommendations From the NRC Regarding LOR Program Revisions," to verify understanding that frequent use of examination questions, PMs, and scenarios may lead to examination compromise and grade creep on the LOR examinations.

b. Findings

One NRC examiner left examination material in an uncontrolled classroom. The examination material was used earlier during the week to evaluate the operations crew in a dynamic simulator setting but was still considered exam secure information by the facility personnel. Since the examination material was not scheduled to be used during the remainder of the examination cycle, no replacement of examination material was required and no violation of examination security requirements occurred. The training department documented this lapse of examination material control in CAP035475.

.6 Licensee Training Feedback System

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

.7 Licensee Remedial Training Program

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

.8 Conformance With Operator License Conditions

a. Inspection Scope

The inspectors reviewed the facility and individual operator licensees' conformance with the requirements of 10 CFR Part 55. The inspectors reviewed the facility licensee's program for maintaining active operator licenses and to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the procedural guidance and the process for tracking onshift hours for licensed operators and which control room positions were granted watchstanding credit for maintaining active operator licenses. The inspectors reviewed the facility licensee's LORT program to assess compliance with the requalification program requirements as described by 10 CFR 55.59(c). The inspectors reviewed CAP035519, "Individual's Training Record Did Not Reflect SOMs Training From 2004," to verify licensee attendance in required classes. Medical records for 12 licensed operators were reviewed for compliance with 10 CFR 55.53(i) along with CAP035773, "Corrective Actions Needed Regarding Licensed Operator Records," to verify compliance and understanding of medical issues concerning Licensed Operators.

b. Findings

Introduction: The inspectors identified that the licensee appeared to be in violation of 10 CFR 55.33(a)(1), *Health*.

Description: In accordance with 10 CFR 55.33(a)(1), an operator's medical condition and general health must not adversely affect the performance of assigned operator job duties or cause operational errors endangering public health and safety.

During the inspection of medical records, it was found that one operator was taking blood pressure medication. There was no medical restriction on the operator's license and

inspectors were unable to determine if a restriction should be imposed based on the information contained in the operators' medical records. The operator's health information was sent to the NRC's medical review officer for a decision concerning the need for a license restriction. The NRC's medical review officer has requested further information. Until the requested medical information is provided to the NRC, a final determination concerning a license restriction and possible violation can not be made. This issue is an Unresolved Item (URI) until additional information is reviewed by the NRC. (URI 05000305/2006004-01)

.9 Annual Operating Test Results

a. Inspection Scope

The inspector reviewed the overall pass/fail results of the annual operating examination which consisted of job performance measure (JPM) and simulator operating tests required per 10 CFR 55.59(a)(2) and administered by the licensee. The overall results were compared with the Significance Determination Process (SDP), in accordance with NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

b. Findings

No findings of significance were identified.

.10 Conformance With Simulator Requirements Specified in 10 CFR 55.46

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed systems 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 reviews for a total of three samples:

- a function-oriented review of the instrument air system because the licensee designated it as risk significant under the Maintenance Rule;
- an issue/problem-oriented review of the service water (SW) system because the licensee designated it as risk significant under the Maintenance Rule and the system experienced problems with SW isolation valves 3A and 3B; and
- an issue/problem-oriented review of EDG "A" because the licensee designated it as risk significant under the Maintenance Rule and the system experienced a fuel oil supply failure that rendered the system inoperable.

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 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 six samples:

- safety injection pump lube oil cooler cleaning;
- increased flooding risk for safeguards alley equipment and auxiliary building equipment;
- SW pump CUNO filter failures;
- AFW pump “B” availability during surveillance procedures;
- safety injection accumulator level-to-volume correlation; and
- SW pump regulator failures.

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 evaluations for a total of four samples:

- safety injection accumulator level;
- auxiliary building heating, ventilation, and air conditioning spent fuel pool area air flows;
- RHR and Service Water System OPR-159; and
- SW-1300B failure to fully open.

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:

- Safety Injection Pump 1A Lube Oil Cooler;
- Station and Instrument Air Compressor 1B;
- Steam Generator "A" Blowdown Isolation Valve BT3A;
- SW-3A; and
- EDG "A" fuel oil pump.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

a. Inspection Scope

The inspectors evaluated outage activities for a refueling outage that began on September 2, 2006, and continued through the remainder of the inspection period. 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.

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 both outage plans and the ready-backlog;
- control room turnover meetings and selected pre-job briefings;
- reactor shutdown and cooldown;
- reactor head and upper internal removal;
- refueling activities; 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 (PI) 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 eleven samples:

- SW4 A/B Pressure Switch Calibration;
- Channel 4 (Yellow) Instrument Channel Test;
- Nuclear Power Range Channel 4 (Yellow) N-44 Monthly Test;
- Channel 2 (White) Instrument Channel Test;
- Nuclear Power Range Channel 2 (White) N-42 Monthly Test;
- RHR Pump & Valve Test - Train B; Inservice Test
- Bus 1-2 4 kV [kilovolt] and Frequency Test and Calibration;
- Bus 1-6 Loss of Voltage Relay Test and Calibration;
- Post LOCA Valves Timing Test from Local Panel – Train B Containment Isolation Valves
- Diesel Generator Automatic Test; and
- “B” Containment Spray Pump and Valve Test; Containment Isolation Valves

b. Findings

Except for the issue discussed below, no findings of significance were identified.

Introduction: The inspectors identified a URI associated with potential inoperability of EDG “A” due to a fuel oil leak which remained uncorrected for more than 50 days , and which ultimately caused the EDG to fail its monthly surveillance test.

Description: On August 17, 2006, the monthly surveillance test for EDG “A” was being performed by the control room. Following the start and loading of the diesel generator, a nuclear auxiliary operator performed a walkdown of the EDG. The operator reported to the control room an increase in leakage in a previously identified fuel oil leak for which a work request had been written on June 28, 2006 (WR 06-2321). This previously identified leak was associated with a tubing flared fitting downstream of the engine-driven fuel oil pump and the fuel priming pump. The Operations Shift Manager determined that the leak was excessive and made the decision to abort the 2-hour surveillance procedure

run (approximately 30 minutes into the run), shut down the EDG, and declare the EDG inoperable. The leaking fitting was subsequently repaired, the monthly surveillance test successfully completed, and the EDG was declared operable on August 18, 2006.

The inspectors noted that the fitting leakage was originally identified on June 28, 2006, but no CAP was written at that time, and that, as a result, no operability evaluation on the leak was performed. The inspectors also noted that the leak caused the EDG to become inoperable after approximately 2½ hours of runtime at a load of 2600 kilowatt (kW). That is, since the leak was identified, the EDG was run for 2 hours at a load of 2600 kW during the July 2006 monthly surveillance test, and for approximately 1½ hours at a load of 2600 kW during the August 2006 monthly surveillance test, at which time, the leak became excessive and the diesel generator was declared inoperable. Finally, the inspectors noted that the EDGs are loaded significantly higher than 2600 kW in the early stages of certain accident scenarios and that such loading conditions may have caused the fitting/diesel engine to fail even earlier. Since the mission time of the EDG is 30 days, the inspectors questioned the licensee with regard to the potential inoperability of the EDG from June 28 to August 17, 2006. The licensee is currently in the process of evaluating the operability of the EDG for this period.

Analysis: The inspectors determined that EDG “A” was potentially inoperable from June 28 to August 17, 2006, due to a leaking fuel oil fitting which existed during that time frame, for which no operability evaluation was performed, and which failed and caused the EDG to become inoperable during the performance of the August 2006 monthly EDG surveillance test after a total runtime of 2½ hours at 2600 kW on the EDG.

The inspectors concluded that the issue is more 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).

The inspectors also determined preliminarily that the cause of this issue is related to the cross-cutting area of problem identification and resolution because the licensee had prior opportunity to correct the leaking fuel oil fitting and failed to correct this condition adverse to quality. The inspectors consider this issue unresolved pending the review of the licensee’s operability investigation and Licensee Event Report (LER) (URI 05000305/2006004-02).

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed a temporary modification 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 modification for review for a total of one sample:

- temporary modification, TMod 2006-06, SW-49 replacement.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspectors completed a screening review of Revision 30 of the Kewaunee Power Station Emergency Plan to determine whether changes identified in this revision may have reduced the effectiveness of the licensee's emergency planning. The screening review of Revision 30 does not constitute approval of the changes and, as such, the changes are subject to future NRC inspections to ensure that the emergency plan continues to meet NRC regulations.

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 PI. The inspection activities included, but were not limited to, the classification of events, notifications to offsite agencies, protective action recommendation development, and drill critiques. Observations were compared with the licensee's observations and CAP entries. The inspectors verified that there were no discrepancies between observed performance and PI 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 emergency preparedness exercise on July 26, 2006, to determine event classification and protective action recommendations. Simulated drill notifications

were made with state, county, and local agencies for a general emergency classification with two fission product barriers lost with potential loss of a third barrier.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational and Public Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Review of Licensee Performance Indicators for the Occupational Exposure Cornerstone

a. Inspection Scope

The inspectors reviewed the licensee's occupational exposure control cornerstone PIs to determine whether or not the conditions surrounding the PIs had been evaluated and to determine if identified problems had been entered into the corrective action program for resolution. This review represented one sample.

b. Findings

No findings of significance were identified.

.2 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors identified three radiologically significant work areas within radiation areas, high radiation areas (HRAs), locked HRAs, and airborne areas in the auxiliary and containment buildings. Selected work packages and radiation work permits (RWPs) were reviewed to determine if radiological controls, including surveys, postings, air sampling data and barricades, were acceptable. Work areas included, but were not limited to:

- RWP 2006-355; Reactor Coolant Pump (RCP) "B" Motor Replacement; Revision 0
- RWP 2006-359; RCP "B" Seal Replacement; Revision 0
- RWP 2006-551; Reactor Head Disassembly; Revision 0
- RWP 2006-703; Sump "B" Strainer Modification; Revision 0

This review represented one sample.

The identified radiologically significant work areas were walked down and surveyed to determine if the prescribed RWPs, procedures, and engineering controls were in place,

that licensee surveys and postings were complete and accurate, and that air samplers were properly located. This review represented one sample.

The inspectors reviewed selected RWPs and associated radiological controls used to access these and other radiologically significant areas and evaluated the work control instructions and control barriers that were specified in order to determine if the controls and requirements provided adequate worker protection. Technical Specification requirements for HRAs and locked high radiation areas were used as standards for the necessary barriers. Electronic dosimeter alarm setpoints for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy. The inspectors attended pre-job briefings to determine if instructions to workers emphasized the actions required when their electronic dosimeters noticeably malfunctioned or alarmed. This review represented one sample.

The inspectors reviewed job planning records and interviewed licensee representatives to determine if there were airborne radioactivity areas in the plant with a potential for individual worker internal exposures to exceed 50 millirem committed effective dose equivalent. Barrier integrity and engineering controls performance, such as high efficiency particulate filtration ventilation system operation and use of respiratory protection, were evaluated for worker protection. Work areas having a history of, or the potential for, airborne transuranic isotopes were reviewed to determine if the licensee had considered the potential for transuranic isotopes and provided appropriate worker protection. This review represented one sample.

The adequacy of the licensee's internal dose assessment process for internal exposures exceeding 50 millirem committed effective dose equivalent was assessed to determine if affected personnel were properly monitored utilizing calibrated equipment and that the data were analyzed and internal exposures were properly assessed in accordance with licensee procedures. This review represented one sample.

The inspectors reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) stored within the spent fuel pool. This review represented one sample.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and CAPs related to the access control program to determine if identified problems were entered into the corrective action program for resolution. This review represented one sample.

CAPs related to access controls and HRA radiological incidents (non-performance indicator occurrences identified by the licensee in HRAs of less than 1 Rem/hour) were reviewed. Staff members were interviewed and corrective action documents

were reviewed to determine if follow-up activities were being conducted in an effective and timely manner commensurate, with their importance to safety and risk, based on the following:

- Initial problem identification, characterization, and tracking;
- Disposition of operability/reportability issues;
- Evaluation of safety significance/risk and priority for resolution;
- Identification of repetitive problems;
- Identification of contributing causes;
- Identification and implementation of effective corrective actions;
- Resolution of Non-Cited Violations tracked in the corrective action system; and
- Implementation/consideration of risk significant operational experience feedback.

This review represented one sample.

The inspectors evaluated the licensee's process for problem identification, characterization, and prioritization, and determined if problems were entered into the corrective action program and resolved. For repetitive deficiencies and/or significant individual deficiencies identified in the problem identification and resolution process, the inspectors determined if the licensee's self-assessment activities also identified and addressed these deficiencies. This review represented one sample.

The inspectors discussed performance indicators with the radiation protection staff and reviewed data from the licensee's corrective action program to determine if there were any performance indicators for the occupational exposure cornerstone that had not been reviewed. There were none to evaluate. This review represented one sample.

b. Findings

No findings of significance were identified.

.4 Job-In-Progress Reviews

a. Inspection Scope

The inspectors evaluated selected jobs being performed in radiation areas, potential airborne radioactivity areas, and HRAs for observation of work activities that presented the greatest radiological risk to workers and included areas where radiological gradients were present. This involved work that was estimated to result in higher collective doses, and included vessel head lift, steam generator inspections, and other selected work areas in the containment building.

The inspectors reviewed radiological job requirements, including RWP and work procedure requirements, and attended as-low-as-is-reasonably-achievable (ALARA) job briefings. Job performance was observed with respect to these requirements to determine if radiological conditions in the work areas were adequately communicated to workers through pre-job briefings and radiological condition postings. This review represented one sample.

The inspectors also evaluated the adequacy of radiological controls, including required radiation, contamination, and airborne surveys for system breaches and entry into HRAs. Radiation protection job coverage, including direct visual surveillance by radiation protection technicians, along with the remote monitoring and teledosimetry systems and contamination control processes, was evaluated to determine if workers were adequately protected from radiological exposure. This review represented one sample.

Work in high radiation areas having significant dose rate gradients was observed to evaluate the application of dosimetry to effectively monitor exposure to personnel, and to determine if licensee controls were adequate. The inspectors observed radiation protection coverage of the vessel head lift work which involved controlling worker locations based on radiation survey data and real time monitoring using teledosimetry in order to maintain personnel radiological exposure ALARA. This review represented one sample.

b. Findings

No findings of significance were identified.

.5 High Risk Significant, High Dose Rate High Radiation Area, and Very High Radiation Area Controls

a. Inspection Scope

The inspectors reviewed the licensee's performance indicators for high risk, high dose rate HRAs, and for very high radiation areas to determine if workers were adequately protected from radiological overexposure. Discussions were held with radiation protection management concerning high dose rate HRA and very high radiation area controls and procedures, including procedural changes that had occurred since the last inspection. This was done to determine if any procedure modifications had substantially reduced the effectiveness and level of worker protection. This review represented one sample.

The inspectors interviewed radiation protection (RP) supervisors to determine how the required communications between the RP group and other involved groups would occur beforehand in order to allow corresponding timely actions to properly post and control the radiation hazards. This review represented one sample.

During plant walkdowns, the posting and locking of entrances to high dose rate HRAs and very high radiation areas were reviewed for adequacy. This review represented one sample.

b. Findings

No findings of significance were identified.

.6 Radiation Worker Performance

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation worker performance with respect to stated radiation protection work requirements. The inspectors also evaluated whether workers were aware of the significant radiological conditions in their workplace, the RWP controls and limits in place, and that their performance had accounted for the level of radiological hazards present. This review represented one sample.

Radiological problem reports, which found that the cause of an event resulted from radiation worker errors, were reviewed to determine if there was an observable pattern traceable to a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. This review represented one sample.

b. Findings

No findings of significance were identified.

.7 Radiation Protection Technician Proficiency

a. Inspection Scope

The inspectors observed and evaluated RP technician performance with respect to RP work requirements. This was done to evaluate whether the technicians were aware of the radiological conditions in their workplace, the RWP controls and limits in place, and if their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities. This review represented one sample.

Radiological problem reports that found that the cause of an event was RP technician error were reviewed to determine if there was an observable pattern traceable to a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. This review represented one sample.

b. Findings

No findings of significance were identified.

2OS2 As-Low-As-Is-Reasonably-Achievable (ALARA) Planning And Controls (71121.02)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed plant collective outage exposure history, current exposure trends, and ongoing outage activities to assess current performance and exposure challenges. This included determining the plant's current 3-year rolling average for

collective exposure to help establish resource allocations and to provide a perspective of significance for any resulting inspection finding assessment.

The inspectors reviewed the outage work scheduled during the inspection period and associated work activity exposure and time/labor estimates for the following five work activities which resulted in the highest personnel collective exposures or were, otherwise, activities that were conducted in radiologically significant areas:

- Reactor Head Disassembly;
- RCP "B" Motor Replacement;
- RCP "B" Seal Replacement;
- Sump "B" Strainer Modification; and
- Health Physics Support.

The inspectors determined site specific trends in collective exposures based on plant historical exposure and source term data. The inspectors reviewed procedures associated with maintaining occupational exposures ALARA and assessed those processes used to estimate and track work activity exposures.

These reviews represented four inspection samples.

b. Findings

No findings of significance were identified.

.2 Radiological Work Planning

a. Inspection Scope

The inspectors evaluated the licensee's list of work activities ranked by estimated exposure that were completed during the outage and reviewed the following five work activities of highest exposure significance:

- Reactor Head Disassembly;
- RCP "B" Motor Replacement;
- RCP "B" Seal Replacement;
- Sump "B" Strainer Modification; and
- Health Physics Support.

For the activities listed above, the inspectors reviewed the ALARA Plan and associated RWP, exposure estimates, and exposure mitigation requirements to verify that the licensee had established radiological engineering controls that were based on sound radiation protection principles to achieve occupational exposures that were ALARA. This also involved determining that the licensee had reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

.3 Verification of Dose Estimates and Exposure Tracking Systems

a. Inspection Scope

The inspectors reviewed the licensee's assumptions and basis for its collective outage exposure estimate and evaluated the methodology and practices for projecting work activity specific exposures. This included evaluating both dose rate and time/labor estimates for adequacy compared to historical station specific or industry data.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.4 Job Site Inspections and ALARA Control

a. Inspection Scope

The inspectors observed the following five jobs that were being performed in radiation areas, airborne radioactivity areas, or high/locked high radiation areas to evaluate those work activities that presented the greatest radiological risk to workers:

- Reactor Head Disassembly;
- RCP "B" Motor Replacement;
- RCP "B" Seal Replacement;
- Sump "B" Strainer Modification; and
- Health Physics Support.

The inspectors reviewed the licensee's use of ALARA controls for these work activities. Specifically, the inspectors evaluated the licensee's use of engineering controls to achieve dose reductions. In addition, the inspectors verified that procedures and controls were consistent with the licensee's ALARA reviews, that sufficient shielding of radiation sources was provided for, and that the dose expended to install/remove the shielding did not exceed the dose reduction benefits afforded by the shielding.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.5 Source Term Reduction and Control

a. Inspection Scope

The inspectors reviewed licensee records to understand historical trends and current status of plant source terms. The inspectors discussed the plant's source term with ALARA staff to determine if the licensee had developed an adequate understanding of the input mechanisms and the methodologies and practices necessary to achieve reductions in source term. The inspectors discussed the water chemistry control initiatives implemented during the cool-down for the outage and its impact on source term reduction compared to industry practices.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.6 Radiation Worker Performance

a. Inspection Scope

Radiation worker and radiation protection technician performance was observed during work activities being performed in radiation areas, airborne radioactivity areas, and high radiation areas that presented the greatest radiological risk to workers. The inspectors evaluated whether workers demonstrated the ALARA philosophy in practice by being familiar with the work activity scope and tools to be used, by utilizing ALARA low dose waiting areas, and that they had knowledge of the radiological conditions and adhered to the ALARA requirements for the work activity. Also, radiation worker skill levels were reviewed to determine if they were sufficient relative to the radiological hazards and the work involved.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.7 Monitoring of Declared Pregnant Women and Dose to Embryo/Fetus

a. Inspection Scope

The inspectors reviewed the licensee's monitoring methods and procedures, exposure controls, and the information provided to declared pregnant women to determine if an adequate program had been implemented to limit embryo/fetal dose. The inspectors also reviewed the pregnancy declaration and radiation exposure results for individuals that declared their pregnancy to the licensee from July 2005 through August 2006 to verify compliance with the requirements of 10 CFR 20.1208 and 20.2106.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.8 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and special reports related to the ALARA program since the last inspection to determine if the licensee's overall audit program's scope and frequency for all applicable areas under the Occupational Radiation Safety Cornerstone met the requirements of 10 CFR 20.1101(c).

The licensee's corrective action program was also reviewed to determine if repetitive deficiencies and/or significant individual deficiencies in problem identification and resolution had been addressed.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstones: Initiating Events, Occupational Radiation Safety, and Public Radiation Safety

.1 Reactor Safety and Radiation Safety Strategic Areas

a. Inspection Scope

The inspectors' review of PI used PI guidance and definitions contained in Nuclear Energy Institute Document 99-02, Revision 2, 3, and 4, "Regulatory Assessment Performance Indicator Guideline," to assess the accuracy of the PI data. The inspectors' review included, but was not limited to, conditions and data from logs, LERs, CAPs, accessible locked HRA entrances, 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 five samples:

- Unplanned Scrams per 7000 Critical Hours, for January 2005 through June 2006;
- Unplanned Scrams with Loss of Normal Heat Removal, for January 2005 through June 2006;

- Unplanned Power Changes per 7000 Critical Hours, for January 2005 through June 2006;
- Occupational Exposure Control Effectiveness for July 2005 through June 2006; and
- Radiological Environmental TS/Offsite Dose Calculation Manual Radiological Effluents for July 2005 through June 2006.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

1. Initial License Examination Root Cause

a. Inspection Scope

The inspectors reviewed the licensee's root cause analysis for correct identification of the causes of operator weaknesses in procedure use and adherence demonstrated when they failed to follow operating procedures and failed to address inadequacies in a procedure they were using for a reactor startup on August 10, 2006. The inspectors reviewed post-event remediation training for the licensed operating crews including operational decision making, procedure use, procedure adherence, and administrative and operating procedure revisions. The inspectors reviewed the extent of post-event reactor startup Just-in-Time-Training provided to the operating crews prior to a subsequent reactor startup. The inspectors reviewed related event administrative and operating procedure revisions, the extent of the procedure revision program, plans for operations management to provide focused oversight of shift crews in procedural compliance, operational decision-making, procedure use, and effective use of resources to evaluate and determine the correct course of action. The inspectors interviewed several station operations instructors, licensed operators, operations managers, and training managers to determine their understanding of program requirements in response to the reactor startup event. The inspectors reviewed the recommended corrective actions contained within the root cause analysis for adequacy and accuracy. This represents one sample of Identification and Resolution of Problems.

b. Findings

Discussion: The inspectors determined that the root cause analysis was thorough and identified the contributing causes of poor procedure use and adherence demonstrated by the licensed operating crew during the reactor startup. The inspectors determined that the licensed senior reactor operators deviated from the operating procedures when conflicting or confusing procedure direction was evident, and this represented poor operational decision-making by the senior reactor operators. The inspectors determined that failure of oversight personnel to question validity of the operator actions reflected an acceptance of justification to continue the plant startup. The inspectors determined that the Cold to Hot Shutdown plant startup procedure was inadequate. The inspectors determined that the Just-In-Time-Training conducted prior to the reactor startup event was ineffective. The inspectors determined that the root cause analysis identified the

failure causes for the poor procedure use and adherence, and made accurate recommendations for corrective actions to prevent recurrence of the poor performance issues. The inspectors determined that if the recommended corrective actions are fully implemented and maintained, a recurrence of the poor performance should be avoided.

.2 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 into 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; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, and focus were commensurate with safety and sufficient to prevent recurrence of the issue.

b. Findings

No findings of significance were identified.

.3 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 meetings.

b. Findings

No findings of significance were identified.

.4 Selected Issue Follow-up (Annual Sample): Adequacy of the Procurement Technical Evaluations

Introduction: The inspectors selected a review of the licensee's Procurement Technical Evaluations (PTEs) as a followup sample to evaluate the licensee's actions in preparation for the upcoming refueling outage. The inspectors evaluated how the PTE process was integrated into the corrective action program to determine the completeness and accurate identification of problems, including an evaluation of extent of condition, operability, and completion of corrective actions in a timely manner. The PTE process was used by the licensee to evaluate replacement items for use in a plant system, structure, or component.

Assessment and Observation: The inspectors conducted a review of the following corrective actions and PTEs:

(a) A review of CAP035010, "Excessive Backlog of Procurement Technical Evaluations" identified the licensee's recognition of a need to increase attention on completion of outstanding PTEs. Included in the corrective actions to be taken was the establishment of a plan to reduce the backlog of required PTE for the upcoming refueling outage. The inspectors reviewed the corrective action (CA024709) that established a plan to reduce the PTE backlog and identified a due date of September 12, 2006. The inspectors questioned the timeliness of this date to assure completion of the 44 PTEs needed for an outage that was scheduled to start on September 2, 2006. The licensee's stated that actions, including establishing of a plan, had been taken and were being taken to assure the required PTEs were completed prior to the outage. The licensee also recognized that the due date was in error and issued two new corrective actions (CA025296 and CA024709) to establish separate plans and due dates to reduce the backlog of PTEs needed for the upcoming outage and outside the outage. This issue did not identify any regulatory findings, however, the inspectors identified a weakness in the licensee's use of a process to assure issues are addressed in a timely manner. The licensee's management was assuring timeliness in lieu of assuring the process addressed the timeliness. By using effective processes, the workload on the management can be reduced.

(b) A review of CAP033562, "Evaluation Never Performed for Gear Oil Used in 10 Path Transfer Units," identified the licensee's recognition for a need to have a PTE performed on lubricant needed in safety application. The inspectors reviewed the associated corrective actions (CE017727 and PCR023622) and the associated PTE (PTE 93-0031, Revision 39). The licensee's action addressed the correction of the problem in that a PTE was written to allow use of the lubricant. However, the inspectors' review of CAP033562 identified, under Notes/Comments, a statement: "It should be noted that this QA-3, non safety-related oil has been used in QA-1 safety-related pieces of Equipment by maintenance in the past without questioning if a PTE was required." A review by the inspectors of the corrective action for this statement failed to identify extent of condition for use of this lubrication in safety application and actions to address why a PTE was not requested. Because of the inspectors' concern, CAP035855 was issued to address operability concerns for use of the lubricant in nonsafety-related applications; however, no addition actions were taken for the failure to determine why a PTE was not requested earlier.

(c) A review of CAP033873, "Safety-Related Relays Ordered Not What Was Received Through Warehouse," and the associated PTE 06-0014, Revision 0, identified the licensee's recognition that a vendor had sent safety-related relays with a part number different than what was ordered. The parts ordered were BF66F and the parts received were BF66FW. The inspectors questioned the licensee on how incorrect parts from vendor is tracked to assure that vendors are providing what is requested, and not relying on the licensee's quality assurance program identifying errors. The licensee provided the inspectors with copies of the licensee's Vendor Performance program. This program tracks and trends vendors performance with trigger points to identify poor performance and take action to correct. No issues were identified.

(d) A review of CAP033329, "QA Typing Issue in RR119" and the associated PTE 06-011, Revision 0, identified the licensee's recognition of a problem with safety-related relays and their use. Review of the corrective actions and the PTE did not identify any finding or issues.

.5 Selected Issue Follow-up (Annual Sample): The Operator Workaround Program

a. Inspection Scope

The inspectors performed a review of the licensee's operator workaround program and associated documents, including related administrative procedures, to identify how effective the program was at identifying and resolving operator workarounds. The inspectors' review also was focused on issues that could indicate the existence of a more significant safety issue.

Inspectors reviewed recent CAPs, modifications, night orders, and operable but degraded conditions to determine if workaround issues were being identified and placed into the program and corrected in a timely manner. The specific items reviewed are listed in the Attachment to this report.

Assessment and Observations

No significant issues were identified. The inspectors evaluated the licensee's operator workaround program and observed that the licensee had identified workarounds and generally was resolving the workarounds in a timely manner. The inspectors did not identify any significant discrepancies.

b. Issues

No significant issues were identified.

4OA3 Event Follow-up (71153)

.1 (Closed) LER 05000305/2005002-01: Auxiliary Feedwater Pumps Assumed to Fail from Postulated Loss of Primary Water - Safe Shutdown and Accident Analysis Assumptions Not Assured - Inadequate Design of Pump Protective Equipment

On February 11, 2005, while the plant was operating at full power, and while following up on NRC High Risk Low Margin Pilot Inspection inquires, engineering personnel discovered that the AFW system discharge pressure switch may not operate in time to protect the AFW pumps from damage in the event of a loss of condensate storage tank (CST) water caused by a tornado. During a tornado that causes substantial plant equipment damage and a loss of offsite power, the AFW pumps are required equipment for a safe plant shutdown. The licensee also determined the AFW pumps could be damaged during a feedwater system high energy line break due to damaged common suction piping. The damaged common piping is postulated to create the same effect on the AFW pumps as the loss of CST inventory. The direct cause of this event is an inadequate pump protection design. A plant modification was completed that installed a new design of the AFW suction piping system to provide pump protection against failure.

These events were considered to have low to moderate safety significance. The NRC issued a preliminary white finding in Inspection Report (IR) 05000305/2005010, dated August 16, 2005. In a letter dated September 16, 2005, the NRC issued a final significance determination white finding. The licensee's final corrective actions were documented in IR 05000305/2006015, dated September 22, 2006. This LER is considered closed.

.2 (Closed) LER 05000305/2005013-00: The Throttle Valves to the Turbine Bearing Oil Coolers for the Turbine-Driven Auxiliary Feedwater Pump Could be Blocked by Debris

On July 13, 2005, while the plant was operating at full power, it was determined that a reportable condition existed for an extended period. Valves throttled to the turbine-driven AFW pump turbine bearing coolers could potentially plug from SW (Lake Michigan) debris if the system were aligned to SW. The SW system has strainers for debris in SW larger than 0.125-inch. The turbine bearing cooler supply valves were throttled such that the clearances through the valves were less than 0.125 inches. If the SW system were lined up to the AFW system to feed the steam generators, cooling to the turbine-driven AFW pump turbine bearing oil coolers could be lost due to plugging of the throttled valves by SW debris. There was very low risk significance associated with this event. A plant design change was implemented to reroute the AFW pump lubrication flow paths. This change included calculations to define the valve minimum throttle position when using SW. The licensee documented the problem in CE015478. This licensee-identified finding involved a violation of 10 CFR 50, Appendix B, Criteria III, "Design Control." The enforcement aspects of the violation are discussed in Section 40A7 of this report. This LER is closed.

.3 (Closed) LER 05000305/2005014-00: Technical Specification Limiting Condition for Operation (LCO) Not Entered for Diesel Generators Inoperable While in Refueling Shutdown

On June 7, 2005, with the unit in refueling shutdown mode, it was identified by the resident inspectors that TS 3.7.c operability was not applied correctly for the impact of tornado missiles and wind on EDG equipment. It was not recognized that one train of EDG equipment was required to support the RHR system whenever the RHR system was required to be operable. Evaluations that were performed revealed tornado impacts on various EDG components could render the EDGs inoperable. At that time, the RHR system should have been declared inoperable and an LCO entered. The initial operability concern was identified on March 24, 2005, for the EDG engine exhaust ductwork. On this date, the EDGs were determined to be capable of starting and assuming bus loads. It was also incorrectly determined that they were not required to be operable during the station's current plant mode of refueling shutdown. The cause of this event was a misinterpretation of TS for auxiliary electrical systems during specific plant modes. Once the EDGs were determined to be inoperable, both RHR trains should have been declared inoperable. The RHR trains were available providing decay heat removal and the EDGs were available as a support system for RHR. The EDGs could have been lost by a tornado missile causing damage to the EDG ductwork.

Introduction: The inspectors identified a finding of very low safety significance (Green). Operability was not applied correctly for both trains of the RHR system with the EDGs

declared inoperable due to possible damage from tornado missiles and wind. The inspectors identified that one train of EDG equipment was required to support the RHR system whenever the RHR system was required to be operable. This finding was attributed to the cross-cutting area of human performance.

Description: On March 24, 2005, with the unit shutdown, an operability concern was identified for the EDGs due to loss of sheet metal panel siding on the Turbine Building which was designed to blow out due to tornado wind loading. Upon loss of the siding, the Class 3 portion of the EDGs exhaust duct-work would be exposed to missiles and tornado wind loads. The licensee declared the EDGs inoperable; however, they were available and capable of starting and assuming the current bus loads. The unit was in a shutdown condition and TS 3.1.b required both trains of RHR to be operable. The licensee misinterpreted TS 3.7, "Auxiliary Electrical System," and assumed that in the refueling shutdown condition the EDGs were not required to be operable. On June 7, 2005, the inspectors identified that the TSs for the "A" and "B" EDGs operability were not applied correctly.

Technical Specification 3.7.c states the following:

"When its normal or emergency power source is inoperable, a system, train or component may be considered OPERABLE for the purpose of satisfying the requirements of its applicable LIMITING CONDITION FOR OPERATION, provided:

1. Its corresponding normal or emergency power source is OPERABLE; and
2. Its redundant system, train, or component is OPERABLE"

The intent of the specification is to follow TS 3.7.c during all modes of operation.

In the shutdown and refueling mode of operation, TS 3.1.b required both trains of RHR to be OPERABLE. However, with the "A" and "B" EDGs inoperable, due to potential damage from tornado missiles and wind, TS 3.7.c for the RHR systems could not be met; therefore, the two RHR trains were required to be declared inoperable. The licensee failed to recognize this condition and was in the process of changing modes when the inspectors identified that both trains of RHR were inoperable and this would prohibit the planned mode change. The licensee prevented the mode change, implemented modifications so the EDGs would meet tornado protection, and issued LER 05000305/2005-014 notifying the NRC of this event.

Analysis: The inspectors determined that the licensee's misinterpretation of TS 3.7.c and consideration that both trains of RHR were operable when both EDGs were inoperable was a performance deficiency. The inspectors determined that the finding is greater than minor because if left uncorrected it would become a more significant safety concern, because the licensee would have made a mode change without the required operable equipment. The inspectors also determined that the finding was associated with the human performance attribute of the Mitigating System cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, TSs, were available, but not followed, that would have facilitated the proper performance of the task. The inspectors also determined for the aforementioned reason

that the finding affected the cross-cutting area of human performance, in that procedures (the TSs) were available but not followed.

The inspectors evaluated the finding using IMC 0609, Appendix G "Shutdown Operations Significant Determination Process." The inspectors used Check List 4 for "PWR Shutdown Operation with Time to Boil >2 hours and Inventory in the Pressurizer," and determined the finding did not require a quantitative assessment; therefore, this finding is of very low safety significance (Green).

Enforcement: Technical Specification 3.7.c states:

"When its normal or emergency power source is inoperable, a system, train or component may be considered OPERABLE for the purpose of satisfying the requirements of its applicable LIMITING CONDITION FOR OPERATION, provided:

1. Its corresponding normal or emergency power source is OPERABLE; and
2. Its redundant system, train, or component is OPERABLE"

On March 24, 2005, with both EDGs declared inoperable due to potential for tornado damage, the licensee failed to recognize that both trains of RHR were also inoperable because both trains of RHR could not meet the requirements of TS 3.7.c for operability. The inspectors identified this issue to the licensee, and the licensee then declared both trains of RHR inoperable and took action to return the EDGs to operable status as soon as possible. This finding was of very low safety significance because the licensee returned the EDGs to operability prior to making any mode changes and no violation of NRC requirements was identified (FIN 0500305/2006004-03). The licensee entered this issue into its corrective action program as CAP027851. This LER is closed.

.4 (Closed) LER 05000305/2005015-00: Both Trains of Component Cooling Water Inoperable During Shifting of Running Equipment

On Sunday, September 18, 2005, while the plant was operating at full power, operations personnel performed a pre-shift briefing identifying the activities for the day. The major activity was an availability test of EDG "A". This test was not normally run on a Sunday, but had been rescheduled for Sunday due to emergent work in the substation. Bimonthly Rotation of Running Equipment was also scheduled for Sunday. At 7:09 a.m., EDG "A" was declared inoperable for testing; in parallel, operations personnel proceeded through the normal component cooling water (CCW) operating procedure for shifting running equipment with peer checking by the Unit Supervisor. The "B" CCW pump discharge valve CC-4B was closed and the "B" CCW pump was stopped. Pump discharge valve CC-4B was then reopened per procedure. Total duration of the pump discharge valve being closed was estimated as 3 minutes. With EDG "A" out-of-service for testing, the "A" CCW pump was considered inoperable, and with the "B" CCW pump discharge valve closed, the "B" CCW pump was considered inoperable, both trains of CCW were inoperable for approximately 3 minutes. This was in violation of TS 3.3.d. No new findings were identified in the inspectors' review of the LER. Since both trains of CCW were out-of-service for such a short duration, only approximately 3 minutes, this finding constitutes a violation of minor significance that is not subject to enforcement action

accordance with Section IV of the NRC's Enforcement Policy. The licensee documented the problem in CAP029280 and Root Cause Evaluation 697. This LER is closed.

.5 (Closed) LER 05000305/2005016-01: Automatic Reactor Trip Due to Main Feedwater Pump Motor Failure

On November 28, 2005, while the plant was operating at 100 percent power with no abnormal indications, the "B" main feedwater pump tripped on a Bus 2 feeder breaker trip. During the transient, "B" steam generator reached its low-low level setpoint actuating a reactor protection system reactor trip. All systems responded as designed. Subsequent inspection of the "B" main feedwater pump identified a short-to-ground in all three phases of the motor. The motor was replaced. The LER was reviewed by the inspectors and no findings of significance were identified and no violation of NRC requirements occurred. The licensee wrote CAP030313, placing this issue into the corrective action program. This LER is closed.

.6 (Closed) LER 05000305/2006001-00: Main Feedwater Pump "A" Trip During Planned Power Reduction Followed by a Manual Reactor Trip

On April 26, 2006, the operating crew manually initiated a reactor trip at 35 percent reactor power during a reactor shutdown to repair an unisolatable SW pipe leak in the SW supply to EDG "B". This event was reviewed during an NRC special team inspection, the results of which were documented in IR 05000305/2006010. The LER was reviewed by the resident inspectors and no additional findings of significance or violations of NRC requirements were identified. This LER is closed.

.7 (Closed) LER 05000305/2006008-00: Diesel Generator Operability Testing Interval Exceeded

On July 26, 2006, while operating at full power, it was discovered that a TS-required daily test of the EDG was not performed within the prescribed time period. EDG "B" was declared inoperable as of 3:41 p.m. on July 25, 2006, due to SW train "B" having been declared inoperable. TS 3.7.b.2 states, "One diesel generator may be inoperable for a period not exceeding 7 days, provided the other diesel generator is tested daily to ensure Operability and the engineered safety features associated with this diesel generator are Operable." To comply with the TS, the daily surveillance test for the operable EDG "A" was required to be performed by 3:41 p.m. on July 26. Testing of EDG "A" was not completed until 7:29 p.m. on July 26. There was a very low risk significance associated with this event. The licensee documented the problem in CAP035457, CA025049, and RCE000728. This licensee-identified finding involved a violation of TS 3.7.b.2. The enforcement aspects of the violation are discussed in Section 4OA7 of this report. This LER is closed.

4OA5 Other Activities

.1 Inspection Scope: Reactor Vessel Head Drop Analysis Review

The inspectors performed a review of licensee documentation related to analysis of a postulated reactor vessel head drop onto the reactor vessel flange. In addition, the

inspectors verified that the analyzed weight and head drop height over the reactor vessel flange bounded licensee procedures associated with the reactor vessel head removal and installation during refueling operations.

b. Findings

No findings of significance were identified.

.2 (Discussed) URI 05000305/2006003-03: Potentially Inappropriate Interface for Service Water Pump Bearing Cooling and Flushing Water

The inspectors reviewed the licensee's schedule for completing the associated root cause evaluation and risk assessments. The licensee currently plans to incorporate final comments into the root cause evaluation by mid-October 2006 and complete related RAs by mid-November, 2006.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Ms. Hartz and other members of licensee management on October 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

Interim exits were conducted for:

- Occupational Radiation Safety Access to Radiologically Significant Areas with Ms. L. Hartz on July 14, 2006;
- Biennial Operator Requalification Program Inspection debrief with Mr. K. Davison, Director, Operations and Maintenance, on July 28, 2006;
- Emergency Preparedness Inspection with Mr. S. Wood on August 23, 2006.
- Biennial Operator Requalification Program Inspection exit meeting with Mr. G. Winks, Training Manager, on September 1, 2006, by telephone;
- Inservice Inspection Procedure IP 71111.08 Inspections with Ms. L. Hartz on September 27, 2006. The inspectors returned proprietary information reviewed during the inspection and the licensee confirmed that none of the potential report input discussed was considered proprietary; and
- Occupational Radiation Safety ALARA control program during the licensee's cycle 28 refueling outage (RFO-28) with Ms. L. Hartz on September 15, 2006.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and were violations of NRC requirements which met the criteria of Section VI of the NRC Enforcement Policy, NUREG - 1600, for being dispositions as a NCV.

- Technical Specifications 3.7.b.2 states, "One diesel generator may be inoperable for a period not exceeding 7 days, provided the other diesel generator is tested daily to ensure Operability and the engineered safety features associated with this diesel generator are Operable." EDG "B" was declared inoperable as of 3:41 p.m. on July 25, 2006, due to SW Train "B" having been declared inoperable. To comply with the TS requirements, the daily surveillance test for the operable diesel generator, EDG "A," was required to be performed by 3:41 p.m. on July 26. However, testing of EDG "A" was not completed until 7:29 p.m. on July 26. The licensee documented the problem in CAP035457, CA25049, and RCE000728. This finding is of very low safety significance because testing of EDG "A" was performed satisfactorily. (Section 4OA3.7)
- Appendix B, Criteria III, "Design Control," of 10 CFR 50 requires, in part, "Measures shall be established to assure that applicable regulatory requirements and design bases ...are correctly translated into specifications, drawings, and instructions." Contrary to this, measures were not established to assure the turbine bearing oil cooler supply valves for the turbine-driven AFW pump were throttled such that clearance through the valves were not less than 0.125 inches. The valves were throttled to openings of 0.03 inches and 0.04 inches. With the SW system lined up to the AFW system to feed the steam generators, cooling to the turbine-driven AFW pump turbine bearing oil coolers could be lost due to SW debris potentially plugging the throttled valves. This problem was identified in the licensee's condition evaluation, CE015478. This finding is of very low safety significance because the normal cooling water supply to the turbine-driven AFW pump bearing cooler is from the CST (clean water) and the supply valves to both the motor-driven AFW pump lube oil coolers were not throttled, so this issue did not affect them. (Section 4OA3.2)

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

- L. Armstrong, Nuclear Engineering Director
- S. Baker, Nuclear Radiation Protection Manager
- L. Barron, Supervisor, Nuclear Training Operations
- T. Breene, Manager, Nuclear Licensing
- P. Bukes, Inservice Inspection Primary and Reactor Vessel Bottom Head Inspection
- C. Chovan, Manager, Outage and Planning
- K. Davison, Director, Operations and Maintenance
- B. Dunn, Steam Generator Tube Inspection
- D. Gauger, Chemistry Supervisor
- T. Hanna, Program Engineering Supervisor
- L. Hartz, Site Vice-President
- W. Henry, Manager, Nuclear Maintenance
- R. Nicolai, Supervisor, Nuclear Training
- M. Orcholski, Boric Acid Control Coordinator
- J. Ruttar, Manager, Nuclear Operations
- P. Short, Supervisor, Nuclear Training
- C. Tomes, Engineering Programs, Inspections & Materials
- G. Winks, Training Manager
- S. Wood, Emergency Preparedness Manager
- M. Hale, Radiation Protection Manager
- R. Adams, Radiation Protection Supervisor
- W. Lehmbeck, Radiation Protection Supervisor
- B. Steckler, Radiation Protection Supervisor

Nuclear Regulatory Commission

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

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

- | | | |
|---------------------|-----|---|
| 05000305/2006004-01 | URI | Potential Medical Restriction Required On Operator's License (Section 1R11) |
| 05000305/2006004-02 | URI | Potential Inoperability of EDG "A" Due to a Fuel Oil Leak (Section 1R22) |
| 0500305/2006004-03 | FIN | Technical Specification LCO Not Entered for Diesel Generators Inoperable While in Refueling Shutdown (Section 4OA3.3) |

Closed

0500305/2006004-03	FIN	Technical Specification LCO Not Entered for Diesel Generators Inoperable While in Refueling Shutdown (Section 4OA3.3)
05000305/2005002-01	LER	Auxiliary Feedwater Pumps Assumed to Fail from Postulated Loss of Primary Water - Safe Shutdown and Accident Analysis Assumptions Not Assured - Inadequate Design of Pump Protective Equipment (Section 4OA3.1)
05000305/2005013-00	LER	The Throttle Valves to the Turbine Bearing Oil Coolers for the Turbine-Driven Auxiliary Feedwater Pump Could Be Blocked by Debris (Section 4OA3.2)
05000305/2005014-00	LER	Technical Specification Limiting Condition for Operation (LCO) Not entered for Diesel Generators Inoperable while in Refueling Shutdown (Section 4OA3.3)
05000305/2005015-00	LER	Both Trains of Component Cooling Water Inoperable During Shifting of Running Equipment (Section 4OA3.4)
05000305/2005016-01	LER	Automatic Reactor Trip Due to Main Feedwater Pump Motor Failure (Section 4OA3.5)
05000305/2006001-00	LER	Main Feedwater Pump "A" Trip During Planned Power Reduction Followed by A Manual Reactor Trip (Section 4OA3.6)
05000305/2006008-00	LER	Diesel Generator Operability Testing Interval Exceeded (Section 4OA3.7)

Discussed

05000305/2006003-03	URI	Potentially Inappropriate Interface for Service Water Pump Bearing Cooling and Flushing Water (Section 4OA5.2)
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LIST OF DOCUMENTS REVIEWED

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

1R01: Adverse Weather

CAP024851; Potential for EDG Derating Due to High Air Temp Not Previously Evaluated
CAP035612; NRC Question Regarding Local Monitoring of Outside Air Temperature for OPR 151
CAP035614; Review Short-Term Corrective Actions and Compensatory Measures for OPR 151 E-0-05; Response to Natural Events; Revision U
GMP-172; Tornado Missile Hazard-Monthly Inspection; dated January 17, 2006
Monitoring for Operability of Emergency Diesel Generators A & B; dated July 31, 2006
Met Twr 10 Meter Temperature; dated July 18 - August 1, 2006
KNPP Summer Equipment Reliability Table - 2005

1R04: Equipment Alignment

Drawing A-203; General Arrangement Turbine and Administration Building Basement Floor; Revision AU
Drawing A-205; General Arrangement Turbine and Administration Building Mezzanine Floor; Revision AK
Drawing A-213; General Arrangement Screenhouse and Circulating Water Discharge; Revision W
Drawing OPERM 213-9; Operation Flow Diagram - Diesel Generator Startup Air Compressor A and B and Fish Screen Air;
Drawing OPERM 213-9; Flow Diagram Diesel Generator Startup Air Compressor A and B and Fish Screen Air; Revision B
Drawing OPERM 220 Flow Diagram - Fuel Oil System; Revision AF
Drawing OPERM 220 Operation Flow Diagrams - Fuel Oil System; Revision AH
Drawing Operation M-218; Flow Diagram Spent Fuel Pool Cooling And Clean-Up System; Revision AA
AC Synchronous Generator; Fig.5-1; Blower-Type Engine, typical Lubricating Oil System
AC Synchronous Generator; Fig.5-2; Turbocharged Engine, Typical Lubricating Oil System
KNPP Drawing D-70006; Switch, Gage, and Instrument Location Diagram
N-DGM-10-CLA; Diesel Generator A Prestartup Checklist; Revision O
N-DGM-10-CLA; Diesel Generator A Prestartup Checklist; Revision P
N-SFP-21-CL; Spent Fuel Pool Cooling and Cleanup System Prestartup CL; Revision S

1R05: Fire Protection

A-546; 4160 V Switchgear & Steam Generator Blowdown Holdup Tanks and Waste Neutralizing Tank Area; Revision C
A-548; Charging Pump, Boric Acid Concentrate Pump & Residual Heat Removal Pump Pit Areas; Revision D
A-575; Miscellaneous Vehicle & Maintenance Garages; Revision C
A-539; 480V Switchgear Bus 1-51 & 1-52 Room
A-540; 480V Switchgear Bus 1-61 & 1-62 Room and Auxiliary Feed Water Pump Area

A-536; 1A Diesel Generator & Diesel Generator Date Tank Rooms
A-537; 1B Diesel Generator & Diesel Generator Day Tank Rooms
A-542; Turbine Building Basement
A-543; Turbine Building Mezzanine
A-549; Waste Handling Area
A-550; Condensate Storage & Reactor Make Up Water Storage Room And Adjacent Areas

1R07: Heat Sink Performance

PMP 33-11; SIK - Safety Injection Pump Lube Oil Coolers Performance Monitoring; Revision R

1R08: Inservice Inspection Activities

Calculation C11470; Reactor Vessel Head Effective Degradation; Revision 2; dated September 2, 2006

Visual Examination Record for Bare Metal Visual of RV Head; dated September 17, 2006
Velan Engineering Companies Drawing 78704, 6-Inch Primary Nuclear Swing Check Valve (SI-303A); Revision F-7; dated April 29, 2003

Maintenance Procedure GMP 211; General Bolting Procedure; Revision 1; dated September 15, 1998

Safety Evaluation Report for Kewaunee Power Station - Fourth 10-Year Inservice Inspection Interval Program Requests for Relief (Relief Request RR-G-2); dated February 18, 2005

Magnetic Particle Exam Report for Weld FW-W59; Feedwater Pipe to Nozzle Weld; dated September 18, 2006

Ultrasonic Examination Report for Weld FW-W59; Feedwater Pipe to Nozzle Weld; dated September 18, 2006

Visual Examination Reports for Valves:

- SI-304B Valve Bolting, Safety Injection to RV; dated September 11, 2006;
- SI-303A Valve Bolting, Safety Injection to RV; dated September 11, 2006;
- SI-304A Valve Bolting, Safety Injection to RV; dated September 11, 2006; and
- RHR-11 Valve Bolting, RHR to B Cold Leg; dated September 11, 2006.

Record of Certification for 3 NDE Personnel

- J. M. Johnson; dated July 20, 2006;
- B. E. Walters; dated September 1, 2006; and
- D. G. Garcia; dated July 20, 2006.

Documents Related to Code Pressure Boundary Welding

Work Order 03-002757-000; ICS-7A Valve Replacement, 6-Inch Valve from Spray Pump to Containment Vessel; dated November 19, 2002

Piping or Mechanical System Welded Repair Check Sheet -GMP-207; Appendix A; dated November 17, 2004

WPS GMP 102-388 TGS; dated December 28, 1987

PQR GMP 102-388-TGS; dated June 24, 1987

Welder Qualification for:

- J. Fessler, dated August 19, 2004;
- J. Blazer, dated September 8, 2004; and
- J. Barbeau, dated September 28, 2004.

Weld Data Sheet; QCIN No. 19721; dated December 9, 2004

Ultrasonic Data Sheets for Welds W-180, W181, W-182; dated November 22, 2004

Radiographic Inspection Reports and Film; Welds W-1, W-2 and W-3; dated November 23, 2004

Work Order 04-008484-000; CVC-5C Valve Replacement; Charging Pump C Discharge Valve; dated May 14, 2004
Weld Data Sheet; QCIN No. 40593; dated August 23, 2004
Liquid Penetrant Data Sheets for Welds 1, 2, 3, 4, 5, and 6; dated October 24, 2004
CAP036384; Work Order 04-008484 for CVC-5C; dated August 25, 2006

Documents Associated with Boric Acid Corrosion Program

Procedure GNP-08.06.01; Boric Acid Corrosion Control Inspection and Evaluation; Revision D
CAP035161; Dry Boric Acid at Swagelok Fitting for RC-404; dated July 13, 2006
CAP034644; Boric Acid Leaks in Containment for the Forced Outage April 2006; dated
June 20, 2006
CAP033924; Dry Boric Acid at Main Flange for 1B Reactor Coolant Pump; dated May 16, 2006
CAP033924; Significant Packing Leakage from RC-300A; dated September 10, 2006
CAP036825; Pressurizer Heater Penetrations; dated September 7, 2006
Inservice Inspection Indication Evaluation Record for Code Case -566-1 Compliance for Safety
Injection for CNTMT Penetration to Reactor; dated June 29, 2005
Inservice Inspection Indication Evaluation Record for Code Case -566-1 Compliance for Safety
Injection for CVC Boric Acid Transfer Pumps Discharge; dated May 18, 2005
Boric Acid Corrosion Control Program Report; 2006 Refueling Outage; dated
September 10, 2006
Boric Acid Corrosion Control Program Report; Forced Outage April 28, 2006 - Containment;
dated May 9, 2006
Surveillance Procedure SP-36-267; Revision N; ASME Boiler and Pressure Vessel Code Class 1
System Pressure Test; performed May 7, 2003.
Surveillance Procedure SP-36-267; Revision O; ASME Boiler and Pressure Vessel Code Class 1
System Pressure Test; performed November 26, 2004.

Documents Associated with Nondestructive Testing Procedures

NEP-15.58; Radiographic Examination; Revision A
NEP-15.07; Magnetic Particle Examination for Inservice Inspection; Revision A
NEP-15.40; Revision C; Ultrasonic Examination of Ferritic Piping for ASME Section XI;
Appendix VIII; Inservice Inspection.
NEP-15.05; Revision B; Visual Examination for Inservice Inspection.

Documents Associated with Disposition of Relevant Indications

ISI Indication Evaluation Record F104; Pipe Support RRHR-H2; Rod not in Tension; dated
October 21, 2004
ISI Indication Evaluation Record F111; Pipe Support RHR-H10H; Evidence of Leakage at
Snubber; dated October 21, 2004
ISI Indication Evaluation Record F114; Pipe Support RSI-H14A; Support in Bound Condition;
dated October 26, 2004
ISI Indication Evaluation Record F117; Pipe Support SW-H153; General Corrosion; dated
November 9, 2004

Corrective Action Documents As A Result of NRC Inspection

CAP037095; Inservice Inspection NRC Audit; dated September 12, 2006
CAP037096; NRC Concern with SI-303A; dated September 12, 2006
CAP037126; Follow up Walkdown Performed after the Hot Shutdown Walk Down Performed by
Ops; dated September 13, 2006

Documents Associated with Steam Generator Tube Examinations

Surveillance Procedure SP-36-084; Steam Generator Tube Inspection; Revision 0; dated August 17, 2006

Steam Generator Degradation Assessment for Kewaunee Replacement Steam Generators - 1R28 Refueling Outage; dated August 2006.

Procedure KEW-400-004; Analysis of Bobbin Coil Eddy Current Data; Revision 1

Procedure KEW-400-007; Eddy Current Site Specific Performance Demonstration; Revision 00

Westinghouse Steam Generator Eddy Current Inspection Multi-Frequency Eddy Current Parameters; WPS-BOB -A; Revision 0; dated September 19, 2005

Westinghouse Steam Generator Eddy Current Inspection Multi-Frequency Eddy Current Parameters; WPS-BOB -B; Revision 0; dated September 19, 2006

Westinghouse Steam Generator Eddy Current Inspection Multi-Frequency Eddy Current Parameters; WPS-R3-A; Revision 0; dated September 19, 2006

Westinghouse Steam Generator Eddy Current Inspection Multi-Frequency Eddy Current Parameters; WPS-R1 -A; Revision 0; dated September 19, 2006

Eddy Current Examination Technique Specification Sheet; ETSS # 96001.1; Revision 10; dated February 2003

Eddy Current Examination TS Sheet; ETSS # 96004.1; Revision 9; dated February 2003

Eddy Current Examination TS Sheet; ETSS # 96008.1; Revision 13; dated July 2003

Eddy Current Examination TS Sheet; ETSS # 22841.3; Revision 4; dated September 2004

Eddy Current Examination TS Sheet; ETSS # 21410.1; Revision 4; dated September 2004

Personnel Certifications for:

- W. Baker, Zetec, dated 3/29/04
- D. Darst, Zetec, dated 6/6/03.
- E. Ericson, Westinghouse, dated 7/01/05.
- J. Evering, Westinghouse, dated 6/25/04
- F. Jerina, NDE Technologies, dated 6/07/06.
- L. Jones, Westinghouse, dated 6/25/04.
- D. Reif, Westinghouse, dated 2/03/06.
- G. Stepanek, Westinghouse, dated 3/14/06

1R11: Licensed Operator Requalification Program

06-1-LOR-7.1111.11; Licensed Operator Requalification Program 71111.11 Self-Assessment; July 2006

CAP034639; LOR Annual EXAM To Be Completed Using Form NTP-6333, Revision A, Not Revision B

CAP035396; NRC Comments Concerning LOR Biennial Written Exam (2005) During 71111.11

CAP036432; Difficulties Experienced Operating Letdown Controls on the DSP During a JPM

CAP035476; Create Review Checklist to Insure Requirements Are Met

CAP035484; Question From NRC Inspector Regarding Time Critical Operator Action During SGTR

CAP035519; Individual's Training Record Did Not Reflect SOMs Training from 2004

CAP035773; Corrective Actions Needed Regarding Licensed Operator Records;

LOR-TP; Training Program Description; Revision F

NAD-03.30; Operations Department; Revision E

Form NTP-6515; LOR Training Feedback Summary Report; January 16, 2006 - February 24, 2006

Form NTP-6515; LOR Training Feedback Summary Report; March 3, 2006 - April 21, 2006

Form NTP-6515; LOR Training Feedback Summary Report; May 1, 2006 - June 9, 2006

QF-1050-01; Trainee Feedback Summary Form; Many/various dates
QF-1050-01a; Course/Cycle Feedback Summary Form; Many/various dates
Individual Progress Reports for LRC Trainees; Multiple Licensees, Multiple Weeks
Job Performance Measures; Multiple Job Performance Scripts; Various Dates
Kewaunee Power Station Biennial Training Plan (2004/2005); Revision C
Kewaunee Power Station Biennial Training Plan (2006/2007); Revision B
Licensed Operator Active Status, Effective Period, July 1 - September 30; July 5, 2006
Nuclear Oversight 4th Quarter 2005 Assessment, Kewaunee Power Station; January 19, 2006
Simulator Exercise; Various Date

1R12: Maintenance Effectiveness

CAP023351; "A" Diesel Generator Temperature Switches Leaking
CAP037206; 1B Emergency Diesel Generator Oil and Jacket Water Leakage
CAP037217; Diesel Engine 1A Temperature Switches Found Out of Specification
CAP037237; 1A Emergency Diesel Generator Supply and Return Fuel Lines Deformed at Mounting Bracket
CAP037677; Diesel Generator 1B Temperature Switch Out of Specification

1R13: Maintenance Risk Assessments and Emergent Work Control

ACE003265; SI Accumulator Level to Volume Correlation and Alarm Setpoints
Non-Conservative
CA023710; SI Accumulator B Low Level
CA024683; Perform Setpoint Calculations for SI Accumulator
CA024684; Perform Calculation for SI Accumulator Level
CA024685; Revise Operator Aids for SI Accumulator Level vs Volume
RT-MI-87F; Auxiliary Operator Logs; Revision A
WO 06-007877-000; Heat Exchanger-Lubricating Oil Safety Injection Pump 1A; July 10, 2006
CAP035041; SI Pump "A" Oil cooler SW Flow D/P > 4.0 psid
SP-42-321B; Test of Step 0 and 6 of Auxiliary Feed Pump B - Auxiliary Lube Oil Pump;
Revision D
CAP035397; High CUNO filter D/P for A2 SW Pump
CAP035402; Potential Common Mode Failure SW Pump Cuno Filter Alignment Valves
CAP035420; 1B1 SW CUNO Filter Housing Selector Valve Leaked by Excessively
CAP035421; Pressure and Flow on 1B2 SW CUNO Filter Increased Slowly Causing an Alarm
CAP035376; SW Pump B1 CUNO Filter Alignment Valve Will Not Move
CAP035158; SI Accumulator Level to Volume Correlation and Alarm Setpoints
Non-Conservative
CAP035067; CUNO Filters A1 and B2 Selector Handles Are Hard to Operate
CAP035007; Revise N-SW-02 to Caution Use of Excessive Force on CUNO Filter Handles
CAP035008; Revise CMP-02-01 to Caution Use of Excessive Force on CUNO Filter Handles
CAP034605; B2 SW Pump CUNO Filter Canister Alignment Valve Handle Is Broken
CAP029915; SW Pump B2 CUNO Filter Changeover Valve Handle Broke
CAP033548; SI Accumulator B Low Level
OPR000156; SI Accumulator Level to Volume Correlation and Alarm Setpoints
Non-Conservative
E-0-05; Response to Natural Events; Revision U
Dominion Energy-Kewaunee Operability Recommendation Form - SI Accumulators A and B;
OPR-156, Revision 0; Attachment 1; July 18, 2006

SI Accumulator B Indicated Level Checks; 7-1-05, 9-1-05, 11-1-05, 1-1-06, 3-1-06, 5-1-06, and 7-1-06
KNPP Work Request Form; Sequence 53260; Provide Support to Verify TS Level at 1250 ± 25 Cubic Feet; November 11, 1991
KNPP Corrective/Repair Procedure 33-53260; Accumulator Level Verification; Revision ORG OPR000156; SI Accumulator Level to Volume Correlation and Alarm Setpoints
Non-Conservative
WO 91-53260; Chart Info for Inches, Gallons and Cubic Feet
Incident Report 91-117; Calculation Identified Error in Design Calculation; September 9, 1991
LER 91-009-00; Error in Safety Injection Accumulator Level Indication Caused by not Compensating for Effects of Nitrogen Density During Calibration; November 15, 1991
Drawing DM-17; Sheet 809; Special Detail of Primary Piping - Level Transmitter and Pressure Transmitter with Manifold for Accumulator 1A; Revision F
Drawing DM-17.6; Sheet 993; Special Detail of Primary Piping - Level Transmitter and Pressure Transmitter with Manifold for Accumulator 1B; May 14, 1993
Justifications for Schedule Extension; OBDs 000068, 000082, 000095, 000097, 000104, 000106, 000128, 000133, 000140, 000141, 000146, 000147, 000148, 000150; May 8, 2006
SI Accumulator B Indicated Level Chart: July 1, September 1, November 1, 2005; January 1, March 1, May 1, 2006
SI Accumulator Level to Meet TS Volume Requirements
SP-42-321B; Test of Step 0 and 6 of Auxiliary Feed Pump B - Auxiliary Lube Oil Pump; Revision D
Justifications for Schedule Extension; OBDs 000139, 000138; May 9, 2006
Justifications for Schedule Extension; OBDs 000151, 000152; Revised May 10, 2006
KNPP Summer Equipment Reliability Table - 2005

1R15: Operability Evaluations

ACE003265; SI Accumulator Level to Volume Correlation and Alarm Setpoints
Non-Conservative
CA023710; SI Accumulator B Low Level
CA024683; Perform Setpoint Calculations for SI Accumulator
CA024684; Perform Calculation for SI Accumulator Level
CA024685; Revise Operator Aids for SI Accumulator Level vs Volume
CAP033548; SI Accumulator B Low Level
CAP035158; SI Accumulator Level to Volume Correlation and Alarm Setpoints
Non-Conservative
CAP035473; NRC Questioned Door 96 Being Opened
Dominion Energy-Kewaunee Operability Recommendation Form - SI Accumulators A and B; OPR-156, Revision 0; Attachment 1; July 18, 2006
N-ACA-17; Auxiliary Building Ventilation System; Revision Y
N-FH-53-CLC; Pre-Refueling Checklist; Revision S
RE-25; Fuel Movement During Non-Refueling Operations; Revision F
RF-03.01; Fuel Movement During a Refueling Outage; Revision J
SI Accumulator B Indicated Level Chart: July 1, September 1, November 1, 2005; January 1, March 1, May 1, 2006
SI Accumulator Level to Meet TS Volume Requirements

1R19: Post-Maintenance Testing

ACE003277; Diesel Generator A Inoperable Due to Identified Fuel Oil Leak
RCE000736; Diesel Generator A Fuel Oil Fitting Leak Evaluation
CA026226; Diesel Generator A Inoperable Due to Identified Fuel Oil Leak; Determine Reportability and Initiate LER if Necessary
CA026428; Past Operability Determination for Diesel Generator A Fuel Oil Fitting leak Evaluation
CAP015033; Diesel Generator A Fuel Oil Return Line Pipe Union Leakage
CAP023416; Diesel Generator A Fuel Oil Pressure Gauge 55007 Flexible Hose Has Small Fuel Oil Leak
CAP034751; Inlet and Outlet Threaded Unions for FO-110A Leaking Fuel Oil
CAP036083; Diesel Generator A Inoperable Due to Identified Fuel Oil Leak, August 17, 2006
CAP036107; Fuel Oil Leak on FO-102A on Diesel Generator A; August 18, 2006
CAP036585; Diesel Generator A Fuel Oil Fitting leak Evaluation; Elevate the Significance from that Specified in CAP 036083
CAP036652; SW-1300B Failed During Manual Operation
CAP036826; Emergency Diesel Generator 1A Lube Oil and Diesel Fuel Oil Leakage
CAP037237; Emergency Diesel Generator 1A Supply and Return Fuel Lines Deformed at Mounting Bracket; September 15, 2006
CAP037524; Fuel Oil Leak at Emergency Diesel Generator 1A Check Valve FO-110A; September 23, 2006
CAP037526; Fuel Oil Leak at Emergency Diesel Generator 1A Fuel Supply Piping Elbow; September 23, 2006
GMP-236-02; MOV Diagnostic Test Analysis and Acceptability Determination; Revision E
N-MI-87B; Motor Valve Manual Operation; Revision C
N-RHR-34; Residual Heat Removal System Operation; Revision BF
OPR-159; Residual Heat Removal System and Service Water System
PMP 33-11; SI - Safety Injection Pump Lube Oil Coolers Performance Monitoring; Revision R
PMP 01-03; Station and Instrument Air System (AS) Station Air compressors 1A, 1B, and 1C Maintenance (QA-2)
SOP-SW-02-17; SW Flow Test - Train B; Revision ORIG
SP-31-1688; Train B component Cooling Pump and Valve Test - IST; Revision J
SP-55-167-1; Blowdown Treatment Valves Timing test (IST); Revision AA
Partial Re-Test; SP-55-167-1; Blowdown treatment Valves Timing Test (IST); July 25, 2006
WO 05-008225-000; Compressor-Station and Instrument Air Compressor 1B; SW Sight Flow Indicator Gasket is not Installed Correctly; July 24, 2006

1R20: Outage Activities

CA007632; a Permanent Contingency Action Should Be Developed for the Spent Fuel Pool Cooling Category of the Safety System Actuation
CAP036402; Develop Work Packages for 1A and 1B Spent Fuel Pool Rebuild to Satisfy Safety System Actuation Requirements
CAP037591; RHR Flooding Mod Does Not Appear to have Addressed All Components
CMP-21-03; SFP - Spent Fuel Pool Pump Overhaul; Revision B
Dominion Material List; Order K06010142; Reservation Number 1303210; Contingency Rebuild Package for Spent Fuel Pool "B"
Drawing M-1230; Spent fuel Pool Pumps APSF-1A and APSF-1B; Revision D
Just-In-Time Operating Experience; Clearance and Tagging Activities; Revision 5

Kewaunee Power Station Tagging Trend Events; August 31, 2006
NAD-03.03; Tagout Control; Revision I
Outage Schedule: September 1, 2006 - September 30, 2006
OTH008526; Determination of the Spent Fuel Pool Pump and Motor Parts Availability to Ensure Pump Can Be Quickly Repaired in the Event of a Failure
Piping or Mechanical System Non-Welded Repair Check Sheet - GMP-207 App. C; Safety Stand-down for Tagging and Work Control
Shutdown Safety Assessment Checklist; September, 2006; October 1-2, 2006
WO 06-008906-000; Plant System/Service Water; SW-3A/B Replacement

1R22 Surveillance Testing

CAP034709; Steps Not Performed in SP-45-49.13 Due to Equipment Being Out-of-Service
CAP034720; SP-14-026C Use of N/A in Procedure Per GNP 03.01.03
CAP036931; During SP-33-110 Did Not Get Expected Results Because SW-3B is Inoperable
CAP035144; 1B RHR Pump Seal and Pump Casing Flange Leakage (Boric Acid)
CEO18721; SP-33-110 Some Discrepancies Were Noted
SP-23-100B; Train B Containment Spray Pump and Valve Test - IST; Revision K
SP-33-110; Diesel Generator Automatic Test; Revision AQ
SP-39-227B; Bus 1-6 Loss of Voltage Relay Test and Calibration; Revision P
SP-39-021B; Bus 1-2 4KV Voltage and Frequency Test and Calibration; Revision K
SP-47-316B; Channel 2 (White) Instrument Channel Test; Revision W
SP-47-316D; Channel 4 (Yellow) Instrument channel Test; Revision W
SP-48-003H; Nuclear Power Range Channel 4 (Yellow) N-44 Monthly Test; Revision R
SP-48-003F; Nuclear Power Range Channel 2 (White) N-42 Monthly Test; Revision R
SP-48-003H; Nuclear Power Range Channel 4 (Yellow) N-44 Monthly Test; Revision R
SP-55-167-4B; Post LOCA Valves Timing Test (IST) from Local Panel - Train B; Revision A
Engineering Justification; Schedule Extension for Return to Original Condition; May 10, 2006
SP-42-312B; Diesel Generator B Availability Test; Revision Y
Drawing OPERM 217; Operation Flow Diagram - Internal Containment Spray System; Revision AK
Drawing A-210; General Arrangement Reactor and Aux Building Cross Section; Revision M
Drawing OPER XK100-29; Operation Flow diagram - Safety Injection System; Revision Y
Drawing OPERM 213-9; Operation Flow Diagram - Diesel Generator Startup Air Compressor A and B and Fish
Drawing OPERM 220 Operation Flow Diagrams - Fuel Oil System; Revision AH
Management Expectations; Pre-Job Briefing Checklist for an IPTE

1R23: Temporary Plant Modifications

TMod Index; SW-49 Replacement
TMod 2006-06; SW-49 Replacement; Revision 0
TMod 2006-06; Configuration Change Process Screening; SW-49 Replacement; September 19, 2006
TMod 2006-06; Revision 0; Design Input Checklist; Part A - Engineering Programs and Departmental Reviews
TMod 2006-06; Revision 0; Design Input Checklist; Part B - Design Considerations, Requirements, and Standards
TMod 2006-06; Design Review Checklist
TMod 2006-06; Design Review Comment Form
TMod 2006-06; Interim Piping Configuration Evaluation; Attachment 1

TMod 2006-06; Pipe Stress Analysis and Design Program; Attachment 2
TMod 2006-06; Revision 0; SW-49 Replacement; Design Input Consultation Form;
September 19, 2006
TMod 2006-06; Revision 0; SW-49 Replacement; Design Verification Assignment
TMod 2006-06; Revision 0; 50.59 Pre-Screening; September 20, 2006
TMod 2006-06; Revision 0; 10 CFR 50.59 Screening; SCR# 06-074-00
TMod 2006-06; 10 CFR 50.59; SCR# #06-074-00; Attachment 1
TMod 2006-06; 10 CFR 50.59; SCR# #06-074-00; Attachment 2
TMod 2006-06; 10 CFR 50.59; SCR# #06-074-00; Attachment 3
TMod 2006-06; Revision 0; 50.59 Applicability Review; September 20, 2006

1EP4: Emergency Action Level and Emergency Plan Changes

Kewaunee Power Station Emergency Plan; Revision 30

1EP6: Drill Evaluation

Nuclear Accident Reporting System Form; July 26, 2006
Scenario ID: Technical Support Center Evaluation 2; July 26, 2006
Kewaunee Emergency Operating Procedure Diagnostic Evaluation Program Performance
Indicator Tabletop Drill; Controller Guidance; July 26, 2006
Source Term to Dose/Radiological Assessment System for Consequence Analysis 3.0;
July 26, 2006
Technical Support Center 2 Environmental/Radiation; July 26, 2006

2OS1: Access Control to Radiologically Significant Areas

ANSI-N18.7-1976; American National Standard Administrative Controls and Quality Assurance
for the Operational Phase of Nuclear Power Plants
CAP031555; Mechanic Used Wrong TLD to Enter RCA; dated February 22, 2006
CAP034506; Atlantic Carpenter Used Wrong TLD to Enter RCA; dated June 13, 2006
CAP035090; Wrong TLD Number Used for RCA Entry; dated July 10, 2006
CAP035098; Individual Typed in Incorrect TLD Number; dated July 10, 2006
CAP036071; Employee Entered Without TLD; dated August 17, 2006
CAP037062; Individual Signed Into RCA Under wrong TLD Number; dated September 12, 2006
CAP037143; Supplemental Employee Enters RCA Turnstile Without TLD; dated
September 13, 2006
EPIP - AD - 11; Emergency Radiation Controls; Revision U
GNP - 01.23.03; Non-Essential Personnel Participating in Significant Exposure Events;
Revision C
HP - 01.004; RCA Entry and Exit; Revision V
HP - 01.016; Radiation Work Permit - Preparation, Issuance and Termination; Revision L
HP - 01.019; Radiological Postings, Boundaries and Barricades; Revision J
HP- 01.021; Issuance and Control of Locked High Radiation Area Keys; Revision E
HP- 01.023; Evaluation of Radiological Risk Significant Task and Evolutions; Revision C
HP - 03.008; Evaluation of Inhalations or Injections; Revision D
HP - 03.009; Calculating Internal Dose from Whole Body Counter Results; Revision F
HP - 03.011; Special Dosimetry Issuance; Revision G
HP - 04.001; ALARA Plan; Revision H
HP - 05.010; Control of Radiography; Revision H; Revision K
HP - 05.011; Radiological Precautions for Diving Operations; Revision C
HPF - 103; Personnel Contamination Data Sheet; Revision E

NAD - 01.11; Dosimetry and Personnel Monitoring; Revision L
NAD - 01.23; ALARA Program; Revision H
NAD - 08.03; Radiation Work Permit; Revision K
RF-03.01; Fuel Movement During a Refueling Outage; Revision J
Technical Specifications 6.8; Procedures; dated September 19, 2002
Weekly RP Walkdown Checklist (Various Dates)

2OS2: As-Low-As-Is-Reasonably-Achievable Planning and Controls

Procedures Listed Above and:

CHEM-40.004 Chemistry Control Guidelines for Plant Shutdown; Revision B
CHEM-40.007 Hydrogen peroxide Addition to the Reactor Coolant; Revision E
Dominion Cobalt Reduction Program; Revision 0, Draft
Daily Individual Worker Exposure Reports; Various dates
Daily (Cumulative and RWP Specific) Dose Tracking Reports; Various dates
Exposure Performance Summary for all Outage RWPs; Various dates
Historical Outage Exposure Performance Data (undated)
Radiation Protection RFO27 ALARA Post Outage Report; Undated
RWP 2006-301; Health Physics Routines; Revision 0
RWP 2006-355; RCP "B" Motor Replacement; Revision 0
RWP 2006-359; RCP "B" Seal Replacement; Revision 0
RWP 2006-551; Reactor Head Disassembly; Revision 0
RWP 2006-703; Sump "B" Strainer Modification; Revision 0
Outage Work Schedules; Various dates

4OA1: Performance Indicator Verification

NEI 99-02; Regulatory Assessment performance Indicator Guidelines; Revisions 2, 3, & 4
Kewaunee Operator Logs; January 2005 to June 2006
CAP Database List for Selected Keyword Searches; January 2005 to June 2006
CAP Database Listing for Selected Keyword Searches for the period July 2005 through -
September 12, 2006
GNP-03.18.01; NRC Performance Indicators Reporting Instructions; Revision N
Monthly Data Elements for RETS/ODCM Radiological Effluent Reports; July 2005 through
June 2006
Various Dosimetry Egress Transactions, Personal Contamination Reports, and Selected Intake
Dose Assessments for the period July 2005 through September 12, 2006

4OA2: Identification and Resolution of Problems

NAD-12.07; Operator Workarounds; Revision E
Operator Workaround Aggregate Impact List; July, 2006
DCR STATUS Report; All Open DCRs; dated June 1, 2006
CAP listing for period May - June 2006
Operable But Degraded List; July, 2006

4OA3: Event Follow-up

CA018835; Turbine AFW has its throttle valves less than 1/8", dated March 24, 2005
CA018844; Turbine AFW has its throttle valves less than 1/8", dated March 24, 2005
CA021546; LER for Feedwater Pump B Trip, dated December 8, 2005
CA022231; Use question in TR5-50 to identify motor program weakness dated February 9, 2006

CA022232; Send out Operating Experience update on MFP Motor failure, dated February 9, 2006
CAP025780; Turbine AFW has its throttle valves less than 1/8", dated February 27, 2005
CAP027851; TS Interpretations
CAP030313; Feedwater Pump B Trip
CE015478; Turbine AFW has its throttle valves less than 1/8", dated March 2, 2005
LER 05000305/2005002-001; AFW Pumps Assumed to Fail from Postulated Loss of Primary Water - Safe Shutdown and Accident Analysis Assumptions Not Assured - Inadequate Design of Pump Protective Equipment
LER 05000305/2005013-00; The Throttle Valves to the Turbine Bearing Oil Coolers for the Turbine Driven AFW Pump Could be Blocked by Debris
LER 05000305/2005014-00; TS Limiting Condition for Operation (LCO) Not entered for Diesel Generators Inoperable while in Refueling Shutdown
LER 05000305/2005015-00; Both Trains of Component Cooling Water Inoperable During Shifting of Running Equipment
LER 05000305/2005016-01; Automatic Reactor Trip due to Main Feedwater Pump Motor Failure
LER 05000305/2006001-00; Main Feedwater Pump A Trim During Planned Power Reduction Followed by a Manual Reactor Trip

4AO5: Other Activities

Calculation No. 2006-04360; Analysis of Postulated Reactor Vessel Head Drop onto the Reactor Vessel Flange; Revision 0
Calculation No. KPS-70152140-P01; Evaluation of Safety Injection Nozzle Displacement Limit Due to Reactor Vessel Head Drop; Revision 1
Drawing No. S264; Reactor Building, Reactor Vessel Supports: Plans, Sections and Details; Revision E
Drawing No. S265; Reactor Building, Reactor Vessel Steel Supports; Revision L
Drawing No. S266; Reactor Building, Reactor Vessel Support Steel Columns; Revision C
Drawing No. E233-764; General Arrangement; Revision 3
Drawing No. E233-766; Pressure Vessel Welding and Machining; Revision 3
Drawing No. E233-769; Nozzle Details; Revision 5
Drawing No. E233-775; Pressure Vessel Miscellaneous Details; Revision 3
RF-02.06; Refueling Procedure: Reactor Vessel Head Lift; Revision G
RF-04.03; Refueling Procedure: Reactor Vessel Head Installation; Revision H

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
ALARA	As-Low-As-Is-Reasonably Achievable
ASME	American Society of Mechanical Engineers
BACC	Boric Acid Corrosion Control
CAP	Corrective Action Program Document
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CST	Condensate Storage Tank
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EDY	Effective Degradation Years
EPRI	Electric Power Research Institute
ET	Eddy Current
FIN	Finding
HRA	High Radiation Area
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ISI	Inservice Inspection
JPM	Job Performance Measure
KW	Kilowatt
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LOCA	Loss-of-Coolant Accident
LOR	Licensed Operator Requalification
LORT	Licensed Operator Requalification Training
MT	Magnetic Particle Examination
NCV	Non-Cited Violation
NDE	Nondestructive Examination
NRC	U.S. Nuclear Regulatory Commission
PI	Performance Indicator
PT	Dye Penetrant Examination
PTE	Procurement Technical Evaluation
PWR	Pressurized Water Reactor
RA	Risk Assessment
RCP	Reactor Coolant Pump
RFO	Refueling Outage
RHR	Residual Heat Removal
RP	Radiation Protection
RPV	Reactor Pressure Vessel
RVCH	Reactor Vessel Closure Head
RWP	Radiation Work Permit
RWST	Refueling Water Storage Tank

SAT	Systems Approach to Training
SDP	Significance Determination Process
SG	Steam Generator
SRO	Senior Reactor Operator
SW	Service Water
TS	Technical Specification
URI	Unresolved Item
USAR	Updated Safety Analysis Report
UT	Ultrasonic Examination
V	Volt
VHP	Vessel Head Penetration
VT	Visual Examination
WO	Work Order
WPS	Weld Procedure Specification