

October 25, 2004

Mr. Mark Peifer
Site Vice-President
Duane Arnold Energy Center
Nuclear Management Company, LLC
3277 DAEC Road
Palo, IA 52324

SUBJECT: DUANE ARNOLD ENERGY CENTER
NRC INTEGRATED INSPECTION REPORT 05000331/2004004

Dear Mr. Peifer:

On September 30, 2004, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Duane Arnold Energy Center. The enclosed integrated inspection report documents the inspection findings which were discussed on October 5, 2004, with Mr. Bjorseth and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, there were one NRC-identified and one self-revealed findings of very low safety significance, both of which involved violations of NRC requirements. However, because these violations were of very low safety significance and because the issues were entered into the licensee's corrective action program, the NRC is treating these findings and issues as Non-Cited Violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy. Additionally, a licensee identified violation is listed in Section 40A7 of this report.

If you contest the subject or severity of a Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Duane Arnold Energy Center.

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Sincerely,

/RA/

Bruce L. Burgess, Chief
Branch 2
Division of Reactor Projects

Docket Nos. 50-331
License Nos. DPR-49

Enclosure: Inspection Report 5000331/2004004
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-331

License No: DPR-49

Report No: 05000331/2004004

Licensee: Alliant, IES Utilities Inc.

Facility: Duane Arnold Energy Center

Location: 3277 DAEC Road
Palo, Iowa 52324-9785

Dates: July 1, 2004, through September 30, 2004

Inspectors: G. Wilson, Senior Resident Inspector
K. Stoedter, Senior Resident Inspector
S. Caudill, Resident Inspector
M. Kurth, Resident Inspector
M. Mitchell, Radiation Specialist

Observers: R. Baker, Reactor Engineer
G. Gibbs, Reactor Engineer

Approved by: Bruce L. Burgess, Chief
Branch 2
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000331/2004004; 07/01/2004 - 09/30/2004; Duane Arnold Energy Center; Personnel Performance During Non-Routine Plant Evolutions and Events, and Surveillance Testing.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections of radiation protection. The inspections were conducted by Region III reactor inspectors and the resident inspectors. These inspections identified two Green findings, both of which involved Non-Cited Violations (NCV). 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. Inspector-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. A finding of very low safety significance was identified by the resident inspectors when control room operators did not perform the annunciator response procedure (ARP) 1C08B-A-2, "'B' Diesel to 1A4 Breaker 1A411 Trip," when the 'B' standby diesel generator (SBDG) output breaker failed to close. Once identified, the licensee conducted operator training on procedural compliance and standards.

The finding was more than minor since the failure to perform actions contained in approved procedures has the potential to adversely impact plant safety. The finding was determined to be of very low safety significance since it did not represent the actual loss of a safety function or exceed the Technical Specification Allowed Outage Time (AOT) for the SBDG. An NCV of Technical Specification 5.4.1.a for procedural non adherence was identified. (Section 1R22)

Cornerstone: Occupational Radiation Safety

- Green. A finding of very low safety significance was identified through a self-revealing event when the control room operators failed to follow the approved procedure for the draining of the fuel pool cooling system. The draining evolution resulted in the floor drains backing up, thereby contaminating a significant portion of the south end of the floor in the reactor building. Once identified, the licensee cleaned up the contaminated area, which resulted in workers receiving an unplanned dose for the scheduled evolution. Additionally, the licensee conducted operator training on management expectations and pre job briefings.

The finding was more than minor since the failure to perform actions contained in approved procedures has the potential to adversely impact plant safety. The finding was determined to be of very low safety significance since no overexposure occurred. An NCV of Technical Specification 5.4.1.a for procedural non adherence was identified. (Section 1R14)

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 actions tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Duane Arnold Energy Center operated at full power for the entire assessment period except for brief down-power maneuvers to accomplish rod pattern adjustments and to conduct planned surveillance testing activities.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed three partial walkdowns of accessible portions of trains of risk-significant mitigating systems equipment. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. Equipment alignment was reviewed to identify any discrepancies that could impact the function of the system and potentially increase risk. Redundant or backup systems were selected by the inspectors during times when the trains were of increased importance due to the redundant trains of other related equipment being unavailable. 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 in-service equipment. Identified equipment alignment problems were verified by the inspectors to be properly resolved.

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

- 'A' Standby Gas Treatment System (SBGT) with 'B' SBGT System out-of-service (OOS) for maintenance during the week ending July 24, 2004;
- Electric Fire Pump with Diesel Fire Pump OOS for maintenance during the week ending August 28, 2004; and
- 'B' Core Spray with 'A' Core Spray OOS for maintenance during the week ending September 4, 2004.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

During the week ending July 31, 2004, the inspectors performed a complete system alignment inspection of the Fire Protection System for a total of one sample. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspection consisted of the following activities:

- a review of plant procedures (including selected abnormal and emergency procedures), drawings, and the Updated Final Safety Analysis Report (UFSAR) to identify proper system alignment;
- a review of outstanding or completed temporary and permanent modifications to the system;
- a review of control room operator log entries from January 1, 2003, through July 31, 2004, to identify potential system issues; and
- an electrical and mechanical walkdown of the system to verify proper alignment, component accessibility, availability, and current condition.

The inspectors also reviewed selected issues documented in Corrective Action Plans (CAPs), to determine if they had been properly addressed in the licensee's corrective action program. As part of this inspection, the documents in the Attachment were utilized to evaluate the potential for an inspection finding.

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 nine risk-significant fire areas to assess fire protection requirements. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. Various fire areas were reviewed 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 OOS, degraded or inoperable fire protection equipment, systems or features. Fire areas were selected based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events, their potential to adversely impact equipment which is used to mitigate a plant transient, or their impact on the plant's ability to respond to a security event. 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.

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

During the week ending July 17, 2004:

- Area Fire Plan (AFP) 4, North Control Rod Drive (CRD) Module Area and CRD Repair Room;
- AFP 5, South CRD Module Area, Off-Gas Recombiner Room;
- AFP 14, Reactor Feed Pump Area and Turbine Lube Oil Tank Area; and
- AFP 16, Condensate Pump Area.

During the week ending August 21, 2004:

- AFP 13, Refueling Floor;
- AFP 69, Main Transformer;
- AFP 70, Standby Transformer;
- AFP 71, Startup Transformer; and
- AFP 72, Auxiliary Transformer.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed an annual review of the flood protection barriers and procedures for coping with internal flooding in the Turbine Building Basement for a total of one sample. The inspectors used the documents listed in the Attachment to accomplish the objectives of the inspection procedure. The inspection focused on verifying that flood mitigation plans and equipment were consistent with design requirements and risk analysis assumptions. The inspection activities included, but were not limited to, a review and/or walkdown to assess design measures, seals, drain systems, contingency equipment condition and availability of temporary equipment and barriers, performance and surveillance tests, procedural adequacy, and compensatory measures. The inspection was conducted during the week ending July 31, 2004.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

During the week ending August 21, 2004, the inspectors observed a training crew performance on Simulator Exercise Guide (SEG) 2004C4-01 for a total of one sample. The scenario included a loss of the 'A' drywell cooling loop, 'A' recirculation pump seal failure, and an Anticipated Transient Without SCRAM (ATWS). The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. The inspection activities assessed the licensee's effectiveness in evaluating the requalification program, ensuring that licensed individuals operated the facility safely and within the conditions of their license, and evaluated licensed operators' mastery of high-risk operator actions. Inspection activities included, but were not limited to, a review of high-risk activities, emergency plan performance, incorporation of lessons learned, clarity and formality of communications, task prioritization, timeliness of actions, alarm response actions, control board operations, procedural adequacy and implementation, supervisory oversight, group dynamics, interpretations of Technical Specifications (TSs), simulator fidelity, and the licensee critique of performance.

The crew performance was compared to licensee management expectations and guidelines as presented in the following documents:

- Administrative Control Procedure (ACP) 110.1, "Conduct of Operations," Revision 2;
- ACP 101.01, "Procedure Use and Adherence," Revision 27; and
- ACP 101.2, "Verification Process and SELF/PEER Checking Practices," Revision 5.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed two systems to assess maintenance effectiveness. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. Maintenance activities were reviewed 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 maintenance 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 condition reports, and current equipment performance status.

The inspectors performed the following maintenance effectiveness reviews for a total of two samples:

- C A function-oriented review of the Emergency Service Water (ESW) System because it was designated as risk-significant under the Maintenance Rule, during the week ending July 24, 2004; and
- C A function-oriented review of the Residual Heat Removal Service Water (RHRSW) System because it was designated as risk-significant under the Maintenance Rule, during the weeks ending July 24 and July 31, 2004 .

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's evaluation of plant risk, scheduling, and configuration control for a total of three samples. An evaluation of the performance of maintenance associated with planned and emergent work activities were completed by the inspectors to determine if they were adequately managed. In particular, the inspectors reviewed the program for conducting maintenance risk safety assessments and to ensure that the planning, assessment and management of on-line risk was adequate. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. Licensee actions taken in response to increased on-line risk were reviewed including the establishment of compensatory actions, minimizing activity duration, obtaining appropriate management approval, and informing appropriate plant staff. These activities were accomplished when on-line risk was increased due to maintenance on risk-significant structures, systems, and components (SSCs).

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

- The inspectors reviewed the maintenance risk assessment for work planned during the weeks ending July 17, August 14, and August 28, 2004.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed personnel performance for three planned non-routine evolutions to review operator performance and the potential for operator contribution to the evolutions. The inspectors observed or reviewed records of operator performance

during the evolutions. Reviews included, but were not limited to, operator logs, pre job briefings, instrument recorder data, and procedures. As part of this inspection, the inspectors used the documents listed in the Attachment to accomplish the objectives of the inspection procedure.

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

- During the week ending September 18, 2004, the inspectors reviewed operator performance during the draining of the fuel pool cooling system for maintenance;
- During the week ending September 18, 2004, the inspectors observed portions of the licensee's planned power reduction and various surveillance test procedures; and
- During the week ending September 25, 2004, the inspectors observed portions of the licensee's control building envelope tracer gas special surveillance test procedure.

b. Findings

Introduction: A finding of very low safety significance (Green) and an associated NCV of TS 5.4.1.a, related to the failure to follow procedures for draining the fuel pool cooling system in accordance with Regulatory Guide 1.33, was self-revealing during an event.

Description: On July 26, 2004, the Operators were preparing to shutdown, drain, and tag out the fuel pool cooling system for scheduled maintenance. Prior to performing the tag out, a decision was made by the Operators to backwash and shutdown the fuel pool cooling filter demineralizer.

Section 5 of Operating Instruction (OI) 435, "Fuel Pool Cooling System," was listed as the approved procedure to shut down and drain the system in the hazard's section of the tag out. Section 5 requires the cooling system to be drained from the surge tanks through a fuel pool filter demineralizer to the condensate storage tanks or radwaste sludge tank.

Instead of placing a demineralizer in service to drain the system in accordance with Section 5 of OI 435, the Operators made a decision to go outside of approved procedures by using the pump casing drains to drain the system. The draining evolution through the casing drains resulted in the floor drains backing up, thereby contaminating a significant portion of the south end of the floor in the reactor building. The decontamination of the area resulted in workers receiving an unplanned dose for the scheduled evolution.

The primary cause of this finding was related to the Cross-Cutting area of Human Performance for the failure to follow approved procedures.

Analysis: The inspectors determined that the plant operator's failure to follow approved procedures was an example of not complying with a procedural requirement that could have reasonably been foreseen or corrected by the licensee and was, therefore, a performance deficiency. Since a performance deficiency existed, the inspectors

reviewed this issue against the guidance contained in Appendix B, "Issue Dispositioning Screening," of IMC 0612, "Power Reactor Inspection Reports." In particular, the inspectors compared this finding to the findings identified in Appendix E, "Examples of Minor Issues," of IMC 0612 to determine whether the finding was minor. Following that review, the inspectors concluded that the guidance in Appendix E was not applicable for the specific finding. As a result, the inspectors compared this performance deficiency to the minor questions contained in Appendix B of IMC 0612. The inspectors determined that the finding was more than minor, since if it was left uncorrected, it would become a more significant safety concern. This was based on the fact that the failure to perform actions in accordance with approved procedures has the potential to adversely impact plant safety.

As a result, the inspectors reviewed this issue in accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process." The inspectors determined that the finding affected the Occupational Radiation Safety Cornerstone; however, since the failure to follow the fuel pool cooling procedure did not represent a problem with As-Low-As-Is-Reasonably-Achievable (ALARA) planning or work controls, did not cause an overexposure or a substantial potential for one, and did not affect the ability to perform dose assessments, that the finding was of very low safety significance and screened as Green.

Enforcement: Technical Specification 5.4.1.a and Regulatory Guide 1.33, Revision 2, Appendix A, Section 3.h requires procedures associated with the fuel pool cooling systems to be properly performed in accordance with written procedures or documented instructions appropriate to the circumstances. Contrary to this requirement, operations personnel failed to follow OI 435 Section 5 while draining the system on July 26, 2004. The failure to follow approved procedures for operation of the fuel pool cooling system was an example where the requirements of TS 5.4.1.a, were not met and was a violation. However, because of its low safety significance and because it was entered into the corrective action program, the NRC is treating this issue as a Non-Cited Violation (NCV 5000331/2004004-01), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. This issue was entered into the licensee's corrective action program as CAP 032425.

Corrective actions taken included decontaminating the area. In addition, the operations shift manager performed training following the event to re-enforce standards and expectations. Additional emphasis was placed on pre job briefs for the Operations Department.

IR15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed six of the licensee's operability evaluations of degraded or non-conforming systems. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. Operability evaluations that affected mitigating systems or barrier integrity cornerstones were reviewed to ensure adequate justification for declaration of operability and that the

component or system remained available. Inspection activities included, but were not limited to, a review of the technical adequacy of the evaluation against the TSs, UFSAR, and other design information; validation that appropriate compensatory measures, if needed, were taken; and comparison of each operability evaluation for consistency with the requirements of ACP-114.5, "Action Request System" and ACP-110.3, "Operability Determination."

The inspectors reviewed the following operability evaluations for a total of six samples:

- Operability (OPR) 266, 'B' Control Building Chiller, 'B' ESW, during the week ending July 10, 2004;
- OPR 267, 'B' Standby Diesel Generator (SBDG) Ventilation Exhaust Damper, during the week ending August 14, 2004;
- OPR 268, Secondary Containment Door 286, during the week ending August 14, 2004;
- OPR 262, Secondary Containment 1VAD042A/B, during the week ending August 14, 2004;
- OPR 264, High Pressure Coolant Injection (HPCI), during the week ending August 21, 2004; and
- OPR 269, 'A' SBDG, during the week ending August 21, 2004.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (OWA) (71111.16)

a. Inspection Scope

The inspectors reviewed one operator workaround (OWA). Inspectors used the documents listed in the Attachment to accomplish the objectives of the inspection procedure. Inspectors verified that the selected OWA did not impact the functionality of a mitigating system. Inspection activities included, but were not limited to, a review of the selected OWAs to determine if the functional capability of the system or human reliability in responding to an initiating event was affected, including a review of the impact of the OWAs on the operator's ability to execute Emergency Operating Procedures (EOPs).

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

- CAP 032762, 'B' Control Building Chiller did not operate as expected, during the week ending September 11, 2004.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed three post-maintenance testing (PMT) activities. The documents listed in the Attachment were used to accomplish the objectives of the inspection procedure. PMT procedures and activities were verified to be adequate to ensure system operability and functional capability. Inspection activities were selected based upon the SSC's ability to impact risk. 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 PMT activities adequately ensured that the equipment met the licensing basis, TS, and UFSAR design requirements.

The inspectors selected the following PMT activities for review for a total of three samples:

- Preventive Work Order (PWO) 1126881, Diesel Fire Pump, Engine Inspection, during the week ending July 17, 2004;
- Corrective Work Order (CWO) A64914, Hole in Weld on 12 inch GBC-5 Upstream of V13-004 (RHRSW Crosstie), during the week ending July 24, 2004; and
- CWO 1126360, 'A' Core Spray Pump Seal Replacement, during the week ending September 4, 2004.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed five surveillance test activities. The documents listed in the Attachment were used to accomplish the objectives of the inspection procedure. Surveillance testing activities were reviewed to assess operational readiness and ensure that risk-significant SSCs were capable of performing their intended safety function. Surveillance activities were selected based upon risk significance and the potential risk impact from an unidentified deficiency or performance degradation that a SSC could impose on the unit if the condition were left unresolved. 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.

The inspectors selected the following surveillance testing activities for review for a total of five samples:

- Surveillance Test Procedure (STP) 3.0.0-01, Instrument Checks (Reactor Coolant System (RCS) Leakage), during the week ending July 10, 2004;
- STP 3.5.1-03, Core Spray System Simulated Automatic Actuation, during the week ending July 17, 2004;
- STP 3.8.1-04, 'B' SBDG Operability Test, during the week ending July 24, 2004;
- STP 3.3.6.1-10, Reactor Lo Lo Water Level (ATWS-RPT/ARI Trip/Reactor Water Cleanup (RWCU) Isolation) and Lo Lo Lo (Main Steam Line Isolation Trip) Channel Calibration, during the week ending August 14, 2004; and
- STP 3.4.5-04, Functional Test of Equipment and Floor Drain Sump Flow Timers, during the week ending August 21, 2004.

b. Findings

Introduction: A finding of very low safety significance (Green) and an associated NCV of TS 5.4.1.a, related to the failure to perform the ARP for the 'B' SBDG output breaker in accordance with Regulatory Guide 1.33, was identified by the resident inspectors.

Description: On July 20, 2004, the operators received an unexpected annunciator 1C08B-A-2, "B' Diesel to 1A4 Breaker 1A411 Trip," when the 'B' SBDG output breaker failed to close during the performance of STP 3.8.1-04, "SBDG Operability Test." After receiving the annunciator, the reactor operator failed to perform the actions of the ARP.

The ARP requires the verification of all closing interlocks for the breaker and/or checking the fuses in the closing circuit, thereby potentially preventing further damage to the breaker if a fault existed.

In addition, the operators failed to inform the control room supervisor or to document that the breaker did not close while performing the STP in accordance with ACP 110.1, "Conduct of Operations."

After observing the evolution, the inspectors challenged operations shift management on the failure to perform the ARP. They also questioned operations management on how they were implementing the requirements associated with the Conduct of Operations. As a result of the discussions with the inspectors, operations shift management had a discussion with the operators involved to reinforce procedural adherence and requirements.

The primary cause of this finding was related to the Cross-Cutting area of Human Performance for the failure to perform approved procedures.

Analysis: The inspectors determined that the plant operator's failure to perform the ARP was an example of not complying with a procedural requirement that could have reasonably been foreseen or corrected by the licensee and was, therefore, a performance deficiency. Since a performance deficiency existed, the inspectors reviewed this issue against the guidance contained in Appendix B, "Issue Dispositioning

Screening,” of IMC 0612, “Power Reactor Inspection Reports.” In particular, the inspectors compared this finding to the findings identified in Appendix E, “Examples of Minor Issues,” of IMC 0612 to determine whether the finding was minor. Following that review, the inspectors concluded that the guidance in Appendix E was not applicable for the specific finding. As a result, the inspectors compared this performance deficiency to the minor questions contained in Appendix B of IMC 0612. The inspectors determined that the finding was more than minor, since if it was left uncorrected, it would become a more significant safety concern. This was based on the fact that the failure to perform actions and procedures based on valid plant indications and parameters has the potential to adversely impact plant safety.

As a result, the inspectors reviewed this issue in accordance with IMC 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations.” The inspectors determined that the finding affected the Mitigating Systems Cornerstone; however, since the failure to perform the ARP did not represent the actual loss of a safety function, did not exceed a TS AOT, did not represent an actual loss of safety function for a non-Tech Spec train, and was not risk-significant due to seismic, fire, flooding or severe weather, that the finding was of very low safety significance and screened as Green.

Enforcement: TS 5.4.1.a and Regulatory Guide 1.33, Revision 2, Appendix A, Section 5 requires ARPs to be properly performed in accordance with written procedures or documented instructions appropriate to the circumstances. Contrary to this requirement, operations personnel failed to perform ARP 1C08B for the ‘B’ SBDG breaker 1A411 on July 18, 2004. The failure to perform the ARP as it was written, was an example where the requirements of TS 5.4.1.a were not met and was a violation. However, because of its low safety significance and because it was entered into the corrective action program, the NRC is treating this issue as a Non-Cited Violation (NCV 5000331/2004004-02), in accordance with Section VI.A.1 of the NRC’s Enforcement Policy. This issue was entered into the licensee’s corrective action program as CAP 032349.

Corrective actions taken included the operations shift manager immediately performing a stand down following the event to re-enforce standards and expectations. Additional training was performed on procedural adherence and requirements for the Operations Department.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed one temporary modification. The documents listed in the Attachment were used to accomplish the objectives of the inspection procedure. Temporary modifications were reviewed to assess the modification’s impact on the safety function of the associated systems. Inspection activities included, but were not limited to, a review of design documents, safety screening documents, UFSAR, and applicable TSs to determine that the temporary modification was consistent with modification documents, drawings, and procedures. 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 was adequately verified.

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

- Temporary Modification 04-034, Holes to be drilled and test ports installed into Heating Ventilation and Air Conditioning (HVAC) ductwork, during the week ending August 7, 2004.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

On August 11, 2004, the inspectors observed an Emergency Preparedness (EP) drill for a total of one sample. The drill simulated a design basis earthquake and a failure of the reactor vessel bottom head drain which resulted in a General Emergency declaration.

Inspectors evaluated the licensee's drill conduct and the adequacy of the post-drill performance critique to identify weaknesses and deficiencies. The documents listed in the Attachment were used to accomplish the objectives of the inspection procedure. Exercises that the licensee had previously scheduled were selected to provide input to the Drill/Exercise PI. Inspection activities included, but were not limited to, the classification of events, notifications to off-site agencies, protective action recommendation development, and drill critiques. Observations were compared with the licensee's observations and corrective action program entries. Inspectors verified that there were no discrepancies between observed performance and reported PI statistics.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 High Risk Significant, High Dose Rate High Radiation Area (HRA) and Very High Radiation Area (VHRA) Controls

a. Inspection Scope

The inspectors discussed with Radiation Protection (RP) supervisors the controls that were in place for special areas that had the potential to become very high radiation areas (VHRAs) during certain plant operations, to determine if these plant operations required communication beforehand with the RP group, so as to allow corresponding timely actions to properly post and control the radiation hazards. This review represented one sample.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the plant Final Safety Analysis Report (FSAR) to identify applicable radiation monitors associated with transient high and VHRA including those used in remote emergency assessment. The inspectors identified the types of portable radiation detection instrumentation used for job coverage of HRA work, other temporary area radiation monitors currently used in the plant, continuous air monitors associated with jobs with the potential for workers to receive 50 mrem Committed Effective Dose Equivalent (CEDE), whole body counters, and the types of radiation detection instruments utilized for personnel release from the radiologically controlled area. This review represented two samples.

The inspectors verified calibration, operability, and alarm setpoint (if applicable) of the following five instruments: Eberline RO-2, Teletector 61128, Eberline RMS-2, MGP-DMC Electronic Alarming Dosimeter, and Fastscan Whole Body Counter.

The inspectors determined that there were no instances where the instrument was found significantly out of calibration. The inspectors also determined that the licensee had procedures in place to assure that the licensee would take the correct action if an instrument was found significantly out of calibration (>50 percent). From this the inspectors concluded that the licensee staff would be able to determine possible consequences of instrument use since last successful calibration or source check and that the out of calibration result would be entered into the corrective action program. The inspectors also reviewed the licensee's 10 CFR Part 61 source term reviews to determine if the calibration sources used are representative of the plant source term. This review represented one sample.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, Licensee Event Reports (LERs), and Special Reports that involved personnel contamination monitor alarms due to personnel internal exposures to verify that identified problems were entered into the corrective action program for resolution. All event reports involving internal exposures >50 mrem CEDE were reviewed to determine if the affected personnel were properly monitored utilizing calibrated equipment and if the data was analyzed and internal exposures properly assessed in accordance with licensee procedures. This review represented one sample.

The inspectors reviewed corrective action program reports related to exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area. Staff members were interviewed and corrective action documents were reviewed to verify that 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 NCVs tracked in the corrective action system; and
- Implementation/consideration of risk significant operational experience feedback.

This review represented one sample.

The inspectors determined if the licensee's self-assessment activities were identifying and addressing repetitive deficiencies or significant individual deficiencies in problem identification and resolution. This review represented one sample.

b. Findings

No findings of significance were identified.

.3 Radiation Protection Technician Instrument Use

a. Inspection Scope

The inspectors verified the calibration expiration and source response check currency on radiation detection instruments staged for use and observed radiation protection technicians for appropriate instrument selection and self-verification of instrument operability prior to use. This review represented one sample.

b. Findings

No findings of significance were identified.

.4 Self-Contained Breathing Apparatus (SCBA) Maintenance and User Training

a. Inspection Scope

The inspectors reviewed the status and surveillance records of SCBAs staged and ready for use in the plant and inspected the licensee's capability for refilling and transporting SCBA air bottles to and from the control room and operations support center during emergency conditions. The inspectors verified that control room operators and other emergency response and radiation protection personnel were trained and qualified in the use of SCBAs (including personal bottle change-out). The inspectors verified that three individuals on each control room shift crew, and three individuals from each designated department were currently assigned emergency duties (e.g., onsite search and rescue duties). This review represented one sample.

The inspectors reviewed the qualification documentation for the onsite personnel designated to perform maintenance on the vendor-designated vital components, and the vital component maintenance records over the past 5 years for three SCBA units currently designated as "ready for service." The inspectors also ensured that the required, periodic air cylinder hydrostatic testing was documented and up to date, and that the Department of Transportation (DOT) required retest air cylinder markings were in place for these three units. The inspectors reviewed the onsite maintenance procedures governing vital component work including those for the low-pressure alarm and pressure-demand air regulator and licensee procedures and the SCBA manufacturer's recommended practices to determine if there were inconsistencies between them. This review represented one sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstones: Mitigating Systems

.1 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors reviewed the licensee PI submittals for a total of two PIs. Performance Indicator guidance and definitions contained in Nuclear Energy Institute (NEI) Document 99-02, Revision 2, "Regulatory Assessment Performance Indicator Guideline," were used to verify the accuracy of the PI data. The documents listed in the Attachment were used to accomplish the objectives of the inspection procedure. The inspector's review included, but was not limited to, conditions and data from logs, LERs, condition reports, and calculations for each PI specified.

The following PIs were reviewed for a total of two samples during the week ending August 21, 2004:

- Safety System Unavailability for Emergency AC Power Systems, for the period of July 2003 through June 2004;
- Safety System Unavailability for Residual Heat Removal System, for the period of July 2003 through June 2004;

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

For inspections performed and documented in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Minor issues entered into the corrective action program, as a result of the inspectors' observations, are included in the attached list of documents reviewed.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

b. Findings

One specific issue which involved a Licensee-Identified Violation was identified during this daily review as discussed in Section 4OA7.

.3 Post Maintenance Testing

Introduction

The inspectors have observed several problems with the licensee's PMT program over the past year. For example, the licensee received a Green finding (FIN 50-331/2004-02-05) due to an inadequate PMT to ensure condensate filter/demineralizer system septa were correctly replaced. Another inadequate PMT resulted in a Green finding and an NCV (50-331/2003-06-01), due to the failure to specify the appropriate checks to ensure proper operation of the Pump House HVAC system following maintenance. As a result of these findings and other PMT-related weaknesses, the licensee began implementing corrective actions.

The inspectors selected the following CAPs for review:

CAP 29461, Inadequate post maintenance testing on TC7539A, Pump House H&V temperature controller, October 20, 2003;
CAP 30423, Snapshot self assessment on post maintenance testing, January 19, 2004;
CAP 31792, Qualifications for specifying post maintenance testing, May 27, 2004;
CAP 32250, Work orders not planned in accordance with post maintenance testing procedure requirements, July 9, 2004;
CAP 32499, Work Order process for post maintenance testing, August 2, 2004; and
CAP 32641, Post maintenance testing process, August 16, 2004.

a. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed the multiple PMT-related CAPs to determine if they addressed generic implications and that corrective actions were appropriately focused to correct the problem.

(2) Issues

Corrective actions related to each CAP appeared to be adequate to ensure that the specific issue was appropriately addressed. For instance, corrective actions taken as a result of the Pump House HVAC temperature controller maintenance errors (CAP 29461) included adding a sheet for lifted pneumatic lines, similar to the electrical lifted leads and jumpers form.

More generic corrective actions were also put into place such as the work planners being required to physically walk down the planned maintenance job to ensure that the PMT adequately verifies the operability of the SSC after maintenance.

Another corrective action was the requirement for the maintenance supervisors to perform a more rigorous review of work packages at least a week in advance of the planned work. An effectiveness review was performed on 5 percent of the second quarter work packages in 2004 and the review showed that these shop reviews are identifying inadequate PMTs before the work is commenced.

In addition, clarifications and enhancements were made to Maintenance Directive MD-024, "Post Maintenance Testing Program," to provide better guidance on the PMT process. All maintenance personnel received two briefings on the MD-024 enhancements, and the need to adhere to the directions were reiterated. Personnel who actually performed the maintenance were requested to provide written feedback on the adequacy of the related PMT.

In summary, the inspectors observed that the number of problems in this area has decreased over the past few months and when problems with PMT's do occur, enhanced management attention is received. The inspectors concluded that the licensee's corrective actions to prevent PMT-related problems have been effective.

40A4 Cross-Cutting Aspects of Findings

- .1 A finding described in Section 1R14 of this report had, as its primary cause, a human performance deficiency, in that, the operators failed to follow approved procedures when draining the fuel pool cooling system.
- .2 A finding described in Section 1R22 of this report had, as its primary cause, a human performance deficiency, in that, the operators failed to perform the ARP for the 'B' SBDG output breaker after receiving the annunciator when it failed to close.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. J. Bjorseth and other members of licensee management on October 5, 2004. 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 radiological access control and ALARA inspection with Mr. J. Bjorseth on July 16, 2004.

4OA7 Licensee-Identified Violations

The following violation of very low significance was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

Cornerstone: Mitigating Systems

- .1 10 CFR Part 50.55a(g)(4) requires in part that throughout the service life of a boiling or pressurized water reactor facility, components classified as ASME Code Class 1, 2, and 3 must meet requirements of Section XI. Section IWA-2312 "NDE Methods Not Listed in SNT-TC-1A" required "Personnel performing visual examinations or using other methods not addressed in SNT-TC-1A shall be qualified and certified to comparable levels of qualification as defined in SNT-TC-1A and the employers written practice." Section XI, IWA-2313 "Certification and Resertification" required "Personnel shall be qualified by examination and shall be certified in accordance with SNT-TC-1A. Level I, and Level II personnel shall be recertified by qualification examinations every 3 years." Contrary to these requirements, during several system leakage tests conducted since June 2003, the licensee performed visual VT-2 examinations using personnel who had not received a training and certification examination in accordance with SNT-TC-1A or a comparable level of qualification as established in the licensee's written practice ACP 1211.1, "Written Practice for Qualification and Certification of NDE Personnel," used to certify VT-2 inspection staff. However, because of the very low safety significance of this finding and because the issue was entered into the licensee's corrective action program CAP 32867, it is being treated as an NCV, consistent with Section VI.A.1 of the Enforcement Policy.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Peifer, Site Vice President
J. Bjorseth, Site Director
D. Curtland, Plant Manager
S. Catron, Regulatory Affairs Manager
G. Rushworth, Operations Manager
S. Haller, Acting Site Engineering Director
B. Kindred, Security Manager
C. Kress, Training Manager
W. Simmons, Maintenance Manager
D. Wheeler, Chemistry Manager
J. Windschill, Radiation Protection Manager

Nuclear Regulatory Commission

D. Beaulieu, Project Manager, NRR
B. Burgess, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

5000331/2004004-01	NCV	Failure to Follow the Approved Procedures for the Draining of the Fuel Pool Cooling System (1R14)
5000331/2004004-02	NCV	Failure to Perform the Annunciator Response Procedure for the 'B' SBDG Output Breaker (1R22)

Closed

5000331/2004004-01	NCV	Failure to Follow the Approved Procedures for the Draining of the Fuel Pool Cooling System (1R14)
5000331/2004004-02	NCV	Failure to Perform the Annunciator Response Procedure for the 'B' SBDG Output Breaker (1R22)

Discussed

None.

LIST OF DOCUMENTS REVIEWED

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

1R04 Equipment Alignment

OI 170A1, "A" SBT System Valve Lineup, Revision 3
OI 170A2, SBT System Electrical Lineup, Revision 2
Fire Plan - Volume 1, Program, Revision 47
ACP 1203.53, Fire Protection, Revision 3
AOP 913, Fire, Revision 39
OI 513, Fire Protection System, Revision 70
OI 513A1, Fire Protection System Electrical Lineup, Revision 2
OI 513A2, Fire Protection System Valve Lineup, Revision 8
OI 513A2, Cardox Fire Protection System Valve Lineup, Revision 2
CAP 26904, Valves found out of position during performance of STP NS13C017, April 11, 2003
CAP 28616, Setup preventive maintenance for diesel fire pump starter/alternator, August 15, 2003
CAP 32195, Fire penetration inoperable for nearly 2 years and no plan to repair, July 6, 2004
CAP 32366, Pipe cap found on floor near Diesel Fire Pump, July 21, 2004, (NRC Identified)
CAP 32375, Consider procedure enhancements to AOP 913 "Fire", July 22, 2004
CAP 32417, 1P049 Diesel fire pump flow performance, July 26, 2004
CAP 32454, Fire hose station valve leaks by following STP NS13E002, July 29, 2004
CAP 32497, V-33-0993 open while completing post lineup for STP NS13C018, August 2, 2004
BECH-M133(1), Fire Protection Yard Loop, Revision 30
BECH-M133(2), Fire Protection, Revision 22
BECH-M133(3), Fire Protection Hose Stations, Revision 6
BECH-M133(1), Fire Protection Deluge System, Revision 12
BECH-M133(1), Fire Protection Sprinkler System, Revision 14
OI 151A4, 'B' Core Spray System Valve Lineup, Revision 2
OI 151A1, Core Spray System Electrical Lineup, Revision 2

1R05 Fire Protection

AFP 4, North CRD Module Area and CRD Repair Room, Revision 24
AFP 5, South CRD Module Area, Off-Gas Recombiner Room, Revision 24
AFP 14, Reactor Feed Pump Area and Turbine Lube Oil Tank Area, Revision 26
AFP 16, Condensate Pump Area, Revision 23
AFP 13, Refueling Floor, Revision 22
AFP 69, Main Transformer, Revision 2

AFP 70, Standby Transformer, Revision 3
AFP 71, Startup Transformer, Revision 2
AFP 72, Auxiliary Transformer, Revision 1

1R06 Flood Protection Measures

Individual Plant Examination, Internal Flooding Analysis, Section 3.3.6, November 1992
CAP 32165, Drywell sand cushion drains piping found vibrating, July 1, 2004 (NRC Identified)
CAP 28184, Draining of RHR/RHRSW Cross-Connect piping floods room if unattended, July 11, 2003
CAP 32383, Evaluate discontinuing use of drain socks, July 22, 2004
CAP 32389, Plugged drain lines required additional tagging and drainage, July 23, 2004
CAP 32404, Torus drainage/CV-3752/CWO A66939, July 23, 2004
CAP 32426, RB South floor drain backed up when attempting to drain fuel pool cooling pump, July 27, 2004
CAP 32482, TB equipment sump high level alarm came in unexpectedly, August 1, 2004
CAP 32483, TB equipment drain sump high level alarm came in, August 1, 2004
CWO A63503, Level Switch 3737 (Turbine Building Equipment Drain Sump) High Sump Level Fails to Activate Sump Pump, August 15, 2003
CWO A61873, Level Switch 3716 (Turbine Building Floor Drain Sump) Received Alarm TBFD Sump High Level, Pumps Did Not Start, April 23, 2003
BECH-M137(1), Radwaste Sump System, Revision 30
ARP 1C84B(D2), Turbine Building Floor Drain Sump, Revision 3
ARP 1C84B(E2), Turbine Building Equipment Drain Sump, Revision 3

1R11 Licensed Operator Requalification Program

SEG 2004C4-1, Loss of 'A' Drywell Cooling, Recirculation pump failure, ATWS, Revision 0
EOP 2, Primary Containment Control, Revision 12
EOP 1, Reactor Pressure Control, Revision 11
ATWS-Reactor Pressure Vessel, Revision 12
Emergency Action Level (EAL) Table 1, Revision 2
ACP 110.1, Conduct of Operations, Revision 2
ACP 101.01, Procedure Use and Adherence, Revision 27
ACP 101.2, Verification Process and SELF/PEER Checking Practices, Revision 5

1R12 Maintenance Effectiveness

March/April 2004 Maintenance Rule Monitoring and Status Report, June 4, 2004
May/June 2004 Maintenance Rule Monitoring and Status Report, August 5, 2004
Maintenance Rule Performance Criteria Basis Document for ESW, Revision 2
CAP 26213, Flushing of ESW Flow Transmitter Causes Erroneous Post Flushing Indication, March 18, 2003
CAP 26638, Weld repair to spare ESW pump may not meet ASME criteria, April 2, 2003
CAP 28811, Unsat. Workmanship (inadequate weld buildup on valve disk) W.O. #A63078, August 27, 2003

PWO 1122937, Remove, inspect and reinstall spare pump, May 21, 2003
PWO 1123648, Perform service water radiography at location HBD-24-P67 per program engineering, March 23, 2004
PWO 1123651, Perform service water radiography at location HBD-29-P42 per program engineering, March 23, 2004
PWO 1124456, Perform non-intrusive check valve testing using acoustics or a combination of acoustics and magnetics, July 30, 2003
CWO A62646, Repair contingency WO tied to PWO 1123648 in the event that RT reveals wall thickness below min. wall, March 9, 2004
PWO 1124658, Overhaul limitorque operator, March 22, 2003
CWO A62386, Change oil in strainer gearbox. Provide sample of oil to chemistry so concentration of oil can be determined, June 2, 2003
Maintenance Rule Performance Criteria Basis Document for RHRSW, Revision 4
CAP 28107, Moisture intrusion into the 1P-022C Upper Bearing, July 7, 2003
CAP 31725, Foaming concerns related to oil change of upper bearings 1P-022 B&D, May 20, 2004
CAP 32407, 'B' RHRSW leak upstream of V13-004, July 22, 2004
CWO A60263, RHRSW 45 degree elbow has MIC damage and requires replacement, May 8, 2003
CWO A60821, Piece of loose material in motor casing, November 25, 2002
CWO A62696, As a result of the RHRSW elbow (GBC-1-E22) need to UT examine the piping between MO-1942 and V20-0010, April 19, 2004
CWO A63050, Upper bearing reservoir indicates moisture intrusion and emulsification, October 10, 2003
CWO A64914, Hole in weld on 12" GBC Upstream of V13-0004, July 22, 2004
CWO A65201, 'A' RHRSW motor upper bearing appears to have a large amount of water in it, June 28, 2004
CWO A65696, Strainer flange is leaking by bolts numbered #1 & #35, December 18, 2003
PWO 1124455, Perform non-intrusive check valve testing using acoustics, July 30, 2003

1R13 Maintenance Risk Assessments and Emergent Work Control

WPG - 2, On-Line Risk Management Guideline, Revision 17
Maintenance Risk Evaluation for Week 29, July 9, 2004
DAEC Online Schedule, Week 9428/9429, July 9, 2004
CAP 032255, Risk Analysis did not include the B well, July 11, 2004
CAP 032302, Review Adequacy of Surveillance Requirements, July 15, 2004
Maintenance Risk Evaluation for Week 33, August 6, 2004
DAEC Online Schedule, Week 9432/9433, August 6, 2004
Risk Review with One Train of Recirculation Pump Trip Logic Out of Service, November 9, 2003
Maintenance Risk Evaluation for Week 35, August 20, 2004
DAEC Online Schedule, Week 9434/9435, August 20, 2004

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

CAP 032425, Delay in tagging activities, July 27, 2004
OI 435, Fuel Pool Cooling System, Revision 40
Level A Plan, Downpower Plan, September 9, 2004
Instructions for Sequence Exchange, September 9, 2004
Pre-Rod Move Briefing, Sequence Exchange, September 9, 2004
Expected Power Profile Graph for Sequence Exchange, September 9, 2004
Reactor Engineering Sequence Exchange Checklist, September 9, 2004
IPOI 3, Power Operations, Revision 61
STP NS930002, Main Turbine Stop and Combined Intermediate Valve Test, Revision 3
STP 3.6.1.3-03, Main Steam Isolation Valve Trip/Closure Time Check, Revision 3
STP 3.3.1.1-13, Turbine Control Valve Logic and Instrument Functional Test, Revision 8
Special Surveillance Test Procedure 207, Tracer Gas Test of Control Building Envelope, Revision 0

1R15 Operability Evaluations

ACP 110.3, Operability Determination, Revision 1
ACP 114.5, Action Request System, Revision 32
OPR 266, 'B' Control Building Chiller, 'B' ESW, June 20, 2004
OPR 267, 'B' SBDG Ventilation Exhaust Damper, July 19, 2004
OPR 268, Secondary Containment Door 286, July 30, 2004
OPR 262, Secondary Containment 1VAD042A/B, May 13, 2004
OPR 264, HPCI, May 26, 2004
OPR 269, 'A' SBDG, August 9, 2004

1R16 Operator Workarounds

ACP 1410.12, Operator Burden Program, Revision 0
CAP 032762, 'B' Control Building Chiller did not operate as expected, August 25, 2004

1R19 Post-Maintenance Testing

PWO 1126881, Diesel Fire Pump, Engine Inspection, July 12, 2004
STP NS13B001A, Diesel Fire Pump Electrical Inspections, Revision 22
STP NS13B009, Diesel Fire Pump Operability Tests, Revision 16
CAP 32377, 'B' RHRSW leak upstream of V13-004, July 22, 2004
CWO A64914, Hole in weld on 12" GBC-5 Upstream of V13-004, July 22, 2004
NMC Fleet Procedure FP-PE-SW-01, Service Water and Fire Protection Inspection Program, Revision 1, March 22, 2004
STP NS160002, RHRSW Operability Test, Revision 10
STP NS160003, RHRSW System Leakage Inspection, Revision 5
CWO 1126360, 'A' Core Spray Pump Seal Replacement, August 23, 2004

1R22 Surveillance Testing

STP 3.0.0-01, Instrument Checks, Revision 48
STP 3.4.5-04, Functional Test of Equipment and Floor Drain Sump Flow Timers, Revision 6
STP 3.4.5-01, Calibration of Equipment and Floor Drain Sump Flow Integrators, Revision 6
STP 3.5.1-03, Core Spray System Simulated Automatic Actuation, Revision 4
STP 3.5.1-03, Core Spray System Simulated Automatic Actuation, Revision 5
CAP 032291, STP 3.5.1-03 aborted due to procedural inadequacy, July 14, 2004
STP 3.8.1-04, ' B' SBDG Operability Test, Revision 13
CAP 032349, Annunciator response standard not meet, July 20, 2004 (NRC Identified)
STP 3.3.6.1-10, Reactor Lo Lo Water Level (ATWS-RPT/ARI Trip/RWCU Isolation) and Lo Lo Lo (Main Steam Line Isolation Trip) Channel Calibration, Revision 6
STP 3.4.5-04, Functional Test of Equipment and Floor Drain Sump Flow Timers, Revision 6
ACP 110.1, Conduct of Operations, Revision 2
ARP 1C08B-A-2, 'B' Diesel to 1A4 Breaker 1A411 trip, Revision 9

1R23 Temporary Modifications

ACP 1410.6, Temporary Modification Process, Revision 39
Temporary Modification 04-034, Holes to be drilled and test ports installed into HVAC ductwork, July 22, 2004
CWO A65424, Drill three holes 5/8" diameter for tracer gas and pitot tube testing upstream of 1V-SFU-30A/B inlet flow element as marked on air duct, July 8, 2004
CWO A65458, Drill two holes 5/8" diameter, 90 deg. apart to allow for transverse test upstream of AV-7301A as marked on air duct, July 22, 2004
CWO A65459, Drill two holes 5/8" diameter, 90 deg. apart to allow for transverse test upstream of AV-7301B as marked on air duct, July 14, 2004
Engineered Maintenance Action A68190, July 12, 2004
CAP 32559, EMA A65443 renders 'A' SFU inoperable, August 6, 2004

1EP6 Drill Evaluation

2004 Full Scale Emergency Response Drill Scenario, August 11, 2004
EOP 1, RPV Control, Revision 11
EOP 2, Primary Containment Control, Revision 12
EOP 3, Secondary Containment Control, Revision 15
EOP 4, Radioactivity Release Control, Revision 15
Emergency Plan Implementing Procedure (EPIP) 1.1, Emergency Plan Implementing Procedure, Revision 24
EPIP 1.2, Notifications, Revision 31
EPIP 2.5, Control Room Emergency Response Operation, Revision 16
AOP 255.1, Control Rod Movement/Indication Abnormal, Revision 26
AOP 255.2, Power/Reactivity Abnormal Change, Revision 24
AOP 901, Earthquake, Revision 14

CAP 32615, EAL notification for FS1 during emergency response drill inaccurate, August 12, 2004
CAP 32616, Emergency response drill: NRC Event Notification NOTE-3 not completed, August 12, 2004

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

ACP 1411.20, Respiratory Protection; Revision 21
CAP 029607, Deviation From HPP3109.71 Fastscan Was Not Placed Back in Routine Count; October 31, 2003
CAP 030363, Inaccurate Fine-gain Values Were Used for November/December 2003 Monthly Fastscan QA, January 12, 2004
CAP 031020, Two Control Room MSA Tanks Were Less Than 2000 PSI; dated March 17, 2004
CAP 031504, PCM-1B Not Source Checked for 4 Days; dated May 4, 2004
HPS 3108.02, Inventory and Calibration Frequency for HP Instrumentation; Revision 6
HPS 3109.27, Operation of MGP-DMC Electronic Alarming Dosimeter; Revision 11
HPS 3109.71, Operation of FastScan Whole Body Counting System; Revision 6
HPS 3110.01, Calibration of Eberline RO-2, RO-2a, RO-20 Ion Chamber; Revision 6
HPS 3110.03, Calibration of Eberline Teletector Doserate Meter; Revision 4
HPS 3110.27, Calibration of MGP-DMC Electronic Alarming Dosimeter; Revision 11
HPS 3110.71, Calibration of FastScan Whole Body Counting System; Revision 6
I.RIM-E070-01, Eberline Model RMS-II Area Radiation Monitors; Revision 2
STP 3.3.3.1-0, Primary Containment Area Radiation Post Accident Monitoring Instrumentation Electronic Calibration; Revision 2
STP 3.3.3.1.-08, Primary Containment Area Radiation Post Accident Monitoring Instrumentation Source Calibration Check; Revision 0
UFSAR/DAEC Section 12.3, Radiation Protection Design Features; Revision 13
Duane Arnold Energy Center 1st Quarter 2004 Radiation Protection Group Self-Evaluation Report; June 15, 2004
Nuclear Oversight Observation Report 2002-002-1-026, Radiation Monitoring Instrumentation; June 28, 2002

4OA1 Performance Indicator Verification

NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 2
ACP 1402.4, NRC Performance Indicators Collection and Reporting, Revision 3
Memorandum, DAEC 4th Quarter 2003 PI Summary, January 21, 2004
Memorandum, DAEC 3rd Quarter 2003 PI Summary, October 21, 2003
Memorandum, DAEC 2nd Quarter 2004 PI Summary, July 20, 2004
Memorandum, DAEC 1st Quarter 2004 PI Summary, April 21, 2004

4OA2 Identification and Resolution of Problems

ACP 114.4, Corrective Action Program, Revision 16
ACP 114.5, Action Request System, Revision 40
Maintenance Directive MD-024, Post Maintenance Testing Program, Revision 31

Effectiveness Review EFR 36131, Review, analyze and trend field observations, November 7, 2003

CAP 29461, Inadequate post maintenance testing on TC7539A, Pump House H&V temperature controller, October 20, 2003

CAP 30423, Snapshot self assessment on post maintenance testing, January 19, 2004

CAP 31792, Qualifications for specifying post maintenance testing, May 27, 2004

CAP 32250, Work orders not planned in accordance with post maintenance testing procedure requirements, July 9, 2004

CAP 32499, Work Order process for post maintenance testing, August 2, 2004

CAP 32641, Post maintenance testing process, August 16, 2004

40A7 Licensee-Identified Violations

CAP 032867, Retests of VT-2 qualified individuals not performed in accordance with N-546, September 1, 2004

ACP 1211.1, Written Practice for Qualification and Certification of NDE Personnel, Revision 10

LIST OF ACRONYMS USED

ACP	Administrative Control Procedure
AFP	Area Fire Plan
ALARA	As-Low-As-Is-Reasonably-Achievable
ARP	Annunciator Response Procedure
AOT	Allowed Outage Time
ATWS	Anticipated Transient Without SCRAM
CAP	Corrective Action Plan
CEDE	Committed Effective Dose Equivalent
CFR	Code of Federal Regulations
CRD	Control Rod Drive
CWO	Corrective Work Order
DOT	Department of Transportation
EAL	Emergency Action Level
EOP	Emergency Operating Procedure
EP	Emergency Preparedness
EPIP	Emergency Planning Implementing Procedure
ESW	Emergency Service Water
FSAR	Final Safety Analysis Report
HPCI	High Pressure Coolant Injection
HRA	High Radiation Area
HVAC	Heating Ventilation and Air Conditioning
IMC	Inspection Manual Chapter
LER	Licensee Event Report
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
OI	Operating Instruction
OOS	Out-of-service
OPR	Operability
OWA	Operator Workaround
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post-Maintenance Test
PWO	Preventive Work Order
RCS	Reactor Coolant System
RHRSW	Residual Heat Removal Service Water
RP	Radiation Protection
RWCU	Reactor Water Cleanup
SBDG	Standby Diesel Generator
SBGT	Standby Gas Treatment
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SEG	Simulator Exercise Guide
SSC	Structures, Systems, Components
STP	Surveillance Test Procedure
TS	Technical Specification

LIST OF ACRONYMS USED

UFSAR	Updated Final Safety Analysis Report
VHRA	Very High Radiation Area