July 27, 2005

Mr. Gary Van Middlesworth
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 5000331/2005003

Dear Mr. Van Middlesworth:

On June 30, 2005, 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 June 30, 2005, with you 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 three NRC-identified and two self-revealed findings of very low safety significance, of which three involved a violation 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 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 4OA7 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.

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

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 5000331/2005003
(w/Attachment: Supplemental Information)

cc w/encl: E. Protsch, Executive Vice President -
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-331
License No:	DPR-49
Report No:	05000331/2005003
Licensee:	Nuclear Management Company, LLC
Facility:	Duane Arnold Energy Center
Location:	3277 DAEC Road Palo, Iowa 52324-9785
Dates:	April 1 through June 30, 2005
Inspectors:	G. Wilson, Senior Resident Inspector R. Baker, Resident Inspector D. Karjala, Acting Senior Resident Inspector K. Stoedter, Senior Resident Inspector M. Kurth, Resident Inspector G. Gibbs, Reactor Engineer R. Landsman, Project Inspector, Decommissioning Branch D. Melendez, Reactor Engineer M. Mitchell, Radiation Specialist T. Ploski, Senior Emergency Preparedness Analyst L. Ramadan, Reactor Engineer C. Roque-Cruz, Reactor Inspector R. Winter, Reactor Engineer C. Zoia, Operations Engineer
Observers:	None
Approved by:	Bruce L. Burgess, Chief Branch 2 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000331/2005003; 04/01/2005 - 06/30/2005; Duane Arnold Energy Center, Adverse Weather, Post-Maintenance Testing, and Refueling Outage.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections of radiation protection, inservice inspection activities, independent spent fuel storage installation activities, emergency preparedness and maintenance rule implementation. The inspections were conducted by Region III reactor inspectors and the resident inspectors. These inspections identified five Green findings, three of which involved Non-Cited Violations (NCVs). 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 Nuclear Regulatory Commission (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: Initiating Events

- Green. A finding of very low safety significance was identified by the inspectors regarding the failure to control materials in the areas adjacent to the main, startup, and standby transformers and the switchyard. The licensee entered this issue into their corrective action program.

  The finding was more than minor because it adversely impacted the initiating events cornerstone attribute for protection against external factors designed to limit the likelihood of events that upset plant stability. This finding was determined to be of very low safety significance since it did not impact any mitigating systems capability. No 10 CFR 50, Appendix B components were impacted by this finding, therefore, no violations of NRC requirements occurred. (Section 1R01)

- Green. A finding of very low safety significance was identified through a self-revealing event regarding the failure to have adequate maintenance procedures while working on the Drywell to Reactor Building Closed Cooling Water Loop Return Header Isolation. The inadequate procedure resulted in an inadvertent Group Seven Isolation. The licensee restored the inadvertent Group Seven Isolation and informed all site personnel of the issue through a yellow announcement sheet.

  The finding was more than minor because this event had an adverse impact on the initiating events cornerstone attribute of procedural quality. The inadequate procedure resulted in an actual Group Seven isolation. This finding was determined to be of very low safety significance since the finding did not increase the likelihood of a loss of reactor coolant system (RCS) inventory, or degrade the ability to terminate a leak path, or degrade the ability to recover decay heat removal (DHR). An NCV of Technical Specification (TS) 5.4.1, "Procedures," was identified for the failure to have adequate maintenance procedures. (Section 1R19)

- Green. A finding of very low safety significance was identified through a self-revealing event for the failure to properly perform a maintenance procedure while working on the Reactor Protection System Trip Channel A1, "High Drywell Pressure." The improperly performed procedure resulted in an inadvertent Group Three Isolation. The licensee restored the inadvertent Group Three Isolation and informed all site personnel of the issue through a yellow announcement sheet.

  The finding was more than minor because of its adverse impact on the initiating events cornerstone attribute of procedural quality. The inadequately performed procedure resulted in an actual Group Three Isolation. This finding was determined to be of very low safety significance since the finding did not increase the likelihood of a loss of RCS inventory, or degrade the ability to terminate a leak path, or degrade the ability to recover DHR. An NCV of TS 5.4.1, "Procedures," was identified for the failure to properly perform maintenance procedures. (Section 1R19)

- Green. A finding of very low safety significance was identified by the inspectors for the failure to have all supporting hardware attached to the DBD-3 Drain Line from the 6A & 6B Feedwater Heaters. The licensee installed the appropriate supporting hardware.

  The finding was more than minor, since if left uncorrected, it would become a more significant safety concern due to potential weld failure from cyclic stress. This finding was determined to be of very low safety significance since it did not impact any mitigating systems capability. The DBD-3 drain line is not classified as a safety-related system, structure, or component, therefore, no violations of NRC requirements occurred. (Section 1R20)

  Cornerstone: Mitigating Systems

- Green. A finding of very low safety significance was identified by the inspectors regarding the failure to identify a broken Spring Hanger, during the drywell closeout, that affected the operability of a Reactor Core Isolation Cooling (RCIC) Instrument line. The licensee repaired the broken Spring Hanger to original design specification.

  The finding was more than minor due to its' effect on the mitigating systems cornerstone attribute of equipment availability and reliability for the RCIC system. This finding was determined to be of very low safety significance, since the finding did not increase the likelihood of a loss of RCS inventory, or degrade the ability to terminate a leak path, or degrade the ability to recover DHR. An NCV of TS 5.4.1, "Procedures," was identified for the failure to identify the broken Spring Hanger during the Drywell closeout. (Section 1R20)

B. <u>Licensee-Identified Violations</u>

A violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspectors. The corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and the corrective actions tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

The Duane Arnold Energy Center began the inspection period in a refueling outage. On May 2, 2005, the reactor was taken critical. The generator was placed on-line on May 3, 2005. Over the next ten days, the unit was gradually brought to full power and operated at or near full power for the rest of the inspection period with the following exceptions:

- On May 6, 2005, after holding at approximately 60 percent power for several days to allow chemistry stabilization, power was reduced to approximately 30 percent to repair a condenser tube leak. On May 7, 2005, following repair of the condenser tube leak, power ascension resumed.

- On May 10, 2005, the unit was reduced in power to approximately 60 percent to repair a condensate pump oil leak. Following restoration of the condensate pump on May 11, 2005, power was raised to approximately 91 percent. Power was held at this level, to facilitate troubleshooting of high-level alarms on the 2A feedwater heater, until May 13, 2005, when power was increased to the previously established maximum operating level of approximately 94 percent (1790 MWth).

- On June 16, 2005, in accordance with the special test procedure for power ascension testing (SpTP 203), power was incrementally increased to approximately 96 percent (1840 MWth). Power was subsequently reduced by 50 MWe later in the day as requested by the load dispatcher to address grid instability concerns. On June 17, 2005, power was restored to 96 percent and remained there for the rest of the reporting period.

1. REACTOR SAFETY

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

1R01 Adverse Weather (71111.01)

.1 Situational Preparation

a. Inspection Scope

During the week ending May 7, 2005, the inspectors performed a detailed review of the licensee's procedures and a walkdown of areas to observe preparations for adverse weather, in particular, high winds and/or tornadoes for a total of one sample. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. During the inspection, the inspectors focused on plant specific system design features and implementation of 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, and a review of analysis and requirements identified in the Updated Final Safety Analysis Report (UFSAR). The inspectors also verified that operator actions specified by plant specific procedures were appropriate.

b. Findings

No findings of significance were identified.

.2 Summer Preparations

a. Inspection Scope

During the week ending June 4, 2005, the inspectors performed a detailed review of the licensee's procedures and a walkdown of systems and areas to observe the licensee's preparations for summer conditions for a total of one sample. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. During the inspection, the inspectors focused on plant specific system design features and implementation of 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 for summer weather identified in the UFSAR.

The inspectors evaluated summer readiness of the following areas and systems for a total of one sample:

- River Water Supply System de-icing secured during the week ending June 4, 2005;
- Intake Structure heating, ventilation and air-conditioning (HVAC) during the week ending June 4, 2005;
- Pumphouse HVAC during the week ending June 4, 2005; and
- Exterior portions of the plant auxiliary power system and the Duane Arnold Energy Center (DAEC) transmission system, including the 345 kilo-Volt (kV) and 161 kV sections of the switchyard, during the week ending June 4, 2005.

b. Findings

Introduction: A finding of very low safety significance (Green) was identified by the inspectors due to the failure of the licensee to control materials in the areas adjacent to the main, startup, and standby transformers and the switchyard.

Description: On June 1, 2005, the inspectors conducted a walkdown of the risk significant portions of the external power system and the switchyard to assess the licensee's preparations to preclude or minimize potential damage from high velocity winds associated with severe thunderstorms and tornados. During the walkdown of the external power system, the inspectors noted the storage of a significant quantity of lumber, unsecured office trailers, and other material adjacent to the main, startup, and standby transformers. The standby transformer is relied upon to meet minimum power requirements for the safety-related 4.16 kV busses as specified in TS 3.8.1. The inspectors concluded that high velocity winds combined with the close proximity of the standby transformer to the large quantity of stored materials increased the potential to damage the transformer or related electrical equipment.

The DAEC switchyard contains 345 kV, 161 kV, 36 kV, and 34.5 kV system equipment. In particular, the 345 kV and 161 kV sections have been determined to be risk significant with respect to the maintenance rule and provide power to the auxiliary power system transformers included in TS 3.8.1. The inspectors identified unsecured items stored in the switchyard during the walkdown and concluded that these items increased the potential for an initiating event because the material could become missiles when subjected to high velocity winds created by tornados and severe weather conditions, thereby increasing the probability of damage to installed risk significant equipment. Included in the list of observed items were spare insulators, a spill recovery trailer, an aluminum junction box, and miscellaneous tools.

The inspectors reviewed several licensee procedures to assess the controls for loose materials that could become missiles during a tornado and high wind conditions. The inspectors found no specified procedural actions or pro-active elements that required the licensee to evaluate the potential for missile hazards prior to seasonable susceptibilities in the plant yard areas. Administrative Control Procedure (ACP) 1408.23, "Controls to the DAEC Switchyard," includes a precaution that poor housekeeping or loose materials in the switchyard could result in wind-driven missile hazards during severe weather or tornados that increase the risk of interruption of generation capability and delay restoration of offsite power following a weather event. Additionally, the inspectors observed a lack of sensitivity on the part of plant personnel towards the minimization of tornado or severe thunderstorm generated missiles.

Preparations for summer weather are performed under licensee procedure Integrated Plant Operating Instruction (IPOI) 6, "Cold Weather Operations," Attachment 2, ""Plant Return to Normal Operation Checklist." Step 8 of the attachment states, "Perform a walkdown of owner controlled areas and switchyard for potential missile hazards (i.e., Gas bottles, scaffold, plywood, etc.)." Additionally, Appendix A to DAEC UFSAR Chapter 17, Quality Assurance During the Operations Phase, commits the licensee to Regulatory Guide 1.39, Revision 2, and ANSI N45.2.3-1973. This standard requires scheduled inspections of work areas and construction practices to ensure protection of installed equipment from weather-related movement of stored items. The inspectors also found that related procedures did not stipulate standards for cleanliness/ housekeeping and that these standards were considered skill-of-the-craft.

Analysis: The inspectors determined that the failure to control materials in the areas adjacent to the main, startup, and standby transformers and the switchyard was a failure to meet a standard and was reasonably in the licensee's ability to foresee, therefore, it was 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 because it affected the protection against external factors attribute of the initiating events cornerstone designed to limit the likelihood of events that upset plant stability. Specifically, the increased number of potential missiles

in the vicinity of risk significant power systems raised the probability that severe weather could cause a loss of TS-required power supplies or a loss of off-site power, and thereby initiate a plant transient.

The inspectors evaluated the finding using IMC 0609, Appendix A, Attachment 1, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Using the Phase 1 Significance Determination Process (SDP) worksheet for the initiating event cornerstone, transient initiator contributor, the inspectors determined that the finding did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator; the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available; and the finding did not increase the likelihood of a fire or internal or external flooding. Therefore, the finding was of very low safety significance and screened as Green.

Enforcement: The inspectors determined that procedures were inadequate in that they did not provide a housekeeping standard for the switchyard and areas adjacent to the main, startup and standby transformers to protect risk significant equipment from severe weather generated missiles. However, a violation of NRC requirements did not occur because no 10 CFR 50, Appendix B, components were impacted by the Finding (FIN 05000331/2005003-01). This issue was entered into the licensee's corrective action process as CAP 037858.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed four 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 four samples:

- 'B' train of Core Spray system with the 'A' train of Core Spray System out-of-service (OOS) for maintenance during the week ending April 16, 2005;
- Fuel Pool Cooling system with 'A' Residual Heat Removal (RHR) system OOS since it was used as a back up decay heat removal system during the week ending April 16, 2005;

- ‘B’ train of the River Water Supply (RWS) system with the ‘A’ train of RWS OOS for maintenance during the week ending April 16, 2005; and
- ‘A’ train of Core Spray system with the ‘B’ train of OOS for maintenance during the week ending May 14, 2005.

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 ten 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 ten samples:

During the week ending April 16, 2005:

- Area Fire Plan (AFP) 22, Turbine Building South Turbine Operating Floor;
- AFP 17, Turbine Building Condenser Bay, Heater Bay and Steam Tunnel;
- AFP 21, Turbine Building North Turbine Operating Floor; and
- AFP 05, Reactor Building - South Control Rod Drive (CRD) Module - Drywell Area Only.

During the week ending May 21, 2005:

- AFP 1, Reactor Building Torus Area and North Corner Rooms;
- AFP 2, Reactor Building South Corner Rooms;
- AFP 4, Reactor Building North CRD Module Area, and CRD Repair Room;
- AFP 8, Reactor Building Standby Gas Treatment System and MG Set Rooms; and

- AFP 9, Reactor Building Reactor Building Closed Cooling Water (RBCCW) Heat Exchanger Area, Equipment Hatch Area, and Jungle Room.

During the week ending June 4, 2005:

- AFP 74, Site Switchyard.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

During the week ending May 21, 2005, the inspectors performed an annual review of flood protection barriers and procedures for coping with external flooding for a total of one sample. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. Inspection activities focused on verifying that flood mitigation plans and equipment were consistent with design requirements and risk analysis assumptions. 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.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

During the week ending April 16, 2005, the inspectors performed an annual review of the licensee's bio-fouling and cleanliness inspection and associated thermal performance testing of the 'A' RHR Heat Exchanger for a total of one sample. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. 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 for bio-fouling control, 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.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's inservice inspection program for monitoring degradation of the reactor coolant system boundary and risk significant piping system boundaries, based on review of records and in-process observation of nondestructive examinations (NDE) for a total of one sample.

From April 4 through 8, 2005, the inspectors evaluated several activities involving NDE examinations and welding. Specifically, the inspectors observed the following:

- Ultrasonic (UT) examination of two of the top head meridional welds HMC B003 and HMC B004, in the reactor building drywell;

- Automated UT examination of weld RRF-F002-N2F, on the reactor recirculation piping inside containment; and

- Magnetic Particle examination of the top head to top head flange weld in the reactor building drywell.

The inspectors selected these components in order of risk priority as identified in Section 71111.08-03 of Inspection Procedure (IP) 71111.08, "Inservice Inspection Activities," based upon the inservice inspection 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 licensee's records related to pressure boundary welding performed, specifically:

- two welds completed during re-design of the head vent supports to allow attachment to the reactor insulation structure (weld F7 and F10);

- one weld completed during "re-routing of seal lines to 1P216 High Pressure Core Injection (HPCI) main pp to 1P216A HPCI booster pp for easier maintenance (weld 1);" and

- two welds performed during replacement of core spray pump seal and cap screws (welds 3 and 4).

The inspector 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 the requirements of the ASME Code, Sections III, V, IX, and XI.

The inspectors reviewed two examinations with recordable indications that were accepted by the licensee for continued service to verify that the licensee's acceptance for continued service was in accordance with the ASME Code. Specifically, the inspectors reviewed an indication identified in the reactor pressure vessel head, weld HCC-B002, which was accepted for continued service and an indication found in the Torus immersion area bay 1.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

During the week ending May 21, 2005, the inspectors observed a training crew performance on Evaluation Scenario Guide 2005B-1, for a total of one sample. The scenario included a Loss of Offsite Power (LOOP) and a Station Blackout (SBO). 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, 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:

- ACP 110.1, "Conduct of Operations," Revision 1;
- ACP 101.01, "Procedure Use and Adherence," Revision 25; 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)

.1 Quarterly Evaluation

a. Inspection Scope

The inspectors reviewed one system 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 one sample:

- A function-oriented review of the 125 Volts Direct Current (Vdc) System was performed because it was designated as risk-significant under the Maintenance Rule, during the week ending May 14, 2005.

b. Findings

No findings of significance were identified.

.2 Periodic Evaluation

a. Inspection Scope

The inspectors examined the periodic evaluation report completed for the period of May 2001 through April 2003. To evaluate the effectiveness of (a)(1) and (a)(2) activities, the inspector examined a sample of (a)(1) Action Plans, Performance Criteria, Functional Failures, and Condition Reports. These same documents were reviewed to verify that the threshold for identification of problems was at an appropriate level and the associated corrective actions were appropriate. Also, the inspectors reviewed the maintenance rule procedures and processes. The inspectors focused the inspection on the following four systems for a total of four samples:

- Direct Current;
- Emergency Diesel Generator;
- Feedwater System; and
- Condenser.

The inspectors verified that the periodic evaluation was completed within the time restraints defined in 10 CFR 50.65 (once per refueling cycle, not to exceed 24 months). The inspectors also ensured that the licensee reviewed its goals, monitored Structures, Systems, and Components (SSCs) performance, reviewed industry operating experience, and made appropriate adjustments to the maintenance rule program as a result of the above activities.

The inspectors verified that:

- the licensee balanced reliability and unavailability during the previous refueling cycle, including a review of high safety significant SSCs;

- (a)(1) goals were met, that corrective action was appropriate to correct the defective condition, including the use of industry operating experience, and that (a)(1) activities and related goals were adjusted as needed; and

- the licensee has established (a)(2) performance criteria, examined any SSCs that failed to meet their performance criteria, and reviewed any SSCs that have suffered repeated maintenance preventable functional failures including a verification that failed SSCs were considered for (a)(1).

In addition, the inspectors reviewed maintenance rule self-assessments that addressed the maintenance rule program implementation.

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 five samples. An evaluation of the performance of maintenance associated with planned and emergent work activities was 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 SSCs.

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

- The inspectors reviewed the maintenance risk assessment for work planned during the weeks of May 14, 21, 28, and June 4, 18, 2005.

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 during two preplanned non-routine evolutions and one unplanned non-routine evolution for a total of three samples. A review of the planned evolution, associated procedures, briefings, and contingency plans were observed or evaluated by the inspectors. The inspectors observed and reviewed records of operator performance during these evolutions. Reviews included, but were not limited to, operator logs, pre-job briefings, instrument recorder data, and procedures. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure.

The inspectors observed the following non-routine evolutions for a total of three samples:

- Preplanned plant startup from the reactor being critical through power ascension to 1790 MWth, approximately 93% power, during the week ending May 7, 2005;
- Unplanned fast power reduction due to problems associated with the 'A' condensate pump, during the week ending May 14, 2005; and
- Preplanned power ascension from 1790 MWth to 1840 MWth per the approved power uprate, during the week ending June 18 and June 30, 2005.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed five 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 were reviewed that affected mitigating systems or barrier integrity cornerstones 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 five samples:

- Condition Evaluation (CE) 2452, Evaluate thinned piping exams found on HLE 13, 15, and 16 exams, during the week ending April 9, 2005;
- Corrective Action Process, (CAP) 35498, Pressure Regulator Failure, during the week ending April 23, 2005;
- Operability Recommendation (OPR) 286, Pressure Switches for Turbine Control Valve Fast Closure, during the week ending April 30, 2005;
- OPR 284, RCIC Room Cooler, during the week ending May 7, 2005; and
- OPR 285, Torus Coatings, during the week ending May 7, 2005.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (OWA) (71111.16)

.1 Individual Workaround

a. Inspection Scope

The inspectors reviewed two OWAs. The documents listed in the Attachment were reviewed 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 Abnormal Operating Procedures (AOP) and Emergency Operating Procedures (EOPs).

The inspectors reviewed the following OWAs for a total of two samples:

- CAP 36358, "2 Condensate Pumps Running," during the week ending May 21, 2005; and
- CAP 36377, "1E-002A Feedwater Heater Level," during the week ending May 21, 2005.

b. Findings

No findings of significance were identified.

.2 Semiannual Workaround Review

a. Inspection Scope

During the week ending May 21, 2005, the inspectors performed a semiannual review of the cumulative effects of OWAs for a total of one sample. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection procedure. OWAs were reviewed to identify any potential effect on the functionality of mitigating

systems. Inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds on the availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents. Additionally, reviews were conducted to determine if the workarounds could increase the possibility of an initiating event, if the workaround was contrary to training, required a change from long standing operational practices, created the potential for inappropriate compensatory actions, impaired access to equipment, or required equipment uses for which the equipment was not designed.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed one permanent plant modification. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection procedure. The inspectors focused on verification that the design bases, licensing basis, and performance capability of related structures, systems or components were not degraded by the installation of the modification. The inspectors also verified that the modifications did not place the plant in an unsafe configuration. The inspection activities included, but were not limited to, a review of the design adequacy of the modification by performing a review, or partial review, of the modification's impact on plant electrical requirements, material requirements and replacement components, response time, control signals, equipment protection, operation, failure modes, and other related process requirements.

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

- Control Rod Replacement with Marathon Control Rod Blade Assemblies, ECP1702, during the week ending May 7, 2005.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed eight 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 SSCs 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 eight samples:

- Corrective Work Order (CWO) A67565, Replace the EG-A for the 'A' Standby Diesel Generator (SBDG) during the week ending April 9, 2005;
- Preventative Work Order (PWO) 1129989, Eliminate Flanges in Torus Air Space for 'B' RHR during the week ending April 9, 2005;
- PWO 1128220, Diagnostic Test of RBCCW to Drywell Return Header Isolation during the week ending April 23, 2005;
- PWO 1128391, Reactor Protection System Trip Channel 1 during the week ending April 23, 2005;
- CWO A67505, CRD Friction Testing for Control Rod Hydraulic System Work during the week ending April 23, 2005;
- CWO A67500, 10 Year Reactor Vessel Hydro for Control Rod Hydraulic System Work during the week ending April 30, 2005;
- CWO A67501, SCRAM Insertion Timing Test for Control Rod Hydraulic System Work during the week ending April 30, 2005; and
- CWO A67502, Nuclear Steam Supply System Shutoff Work during the week ending May 7, 2005.

b. Findings

(1) Inadvertent Group 7 Isolation during performance of PWO 1128220

Introduction: A finding of very low safety significance (Green) and an associated NCV of TS 5.4.1, "Procedures," related to the failure to adequately preplan maintenance work order 1128220 in accordance with Regulatory Guide 1.33 was identified through a self-revealing event.

Description: On April 14, 2005, Electrical Maintenance was performing maintenance activities on Motor Operated (MO) 4841A, "Drywell to RBCCW Loop Return Header Isolation," in accordance with maintenance work order 1128220. During the performance of the maintenance, electrical jumpers were placed on various equipment, in accordance with the enclosed electrical termination sheet. In this particular case the electrical termination sheet had listed the wrong relay for the installation of the electrical jumpers. Control Relay (CR) 4841X, "Group Seven Isolation Seal-In Relay" was listed instead of CR 4841, "Group Seven Isolation Relay" which was the proper relay for the associated work. When the electrical jumpers were installed on CR 4841X, the isolation seal-in condition was met, which initiated an inadvertent Group Seven Isolation. A Group Seven Isolation results in a loss of containment cooling water. The maintenance work order 1128220 was not properly preplanned. The primary cause of this issue was a cross-cutting issue associated with a human performance deficiency, in that the

planners failed to adequately identify and verify the appropriate equipment for the maintenance activity.

Analysis: The inspectors determined that the failure to properly plan the associated work procedure was a failure to meet a standard and was reasonably in the licensee's ability to foresee, therefore, it was 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 concluded that the issue was more than minor due to the effect on the initiating events cornerstone attribute of procedural quality since the inadequate procedure resulted in an actual Group Seven isolation.

The inspectors reviewed this issue in accordance with Manual Chapter 0609, "SDP," Appendix G, "Shutdown Operations Significance Determination Process." The inspectors determined that the finding would be evaluated by Checklist 7, since the plant was in refueling operation with the RCS level greater than 23 feet. Since the finding did not increase the likelihood of a loss of RCS inventory, or degrade the ability to terminate a leak path, or degrade the ability to recover DHR, 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 9, "Procedures for Performing Maintenance," requires procedures for performing maintenance to be properly preplanned and performed in accordance with written procedures or documented instructions appropriate to the circumstances. Contrary to this requirement, maintenance engineering personnel failed to adequately preplan maintenance work order 1128220, thereby resulting in an inadvertent Group Seven Isolation on April 14, 2005. The electrical termination sheet had instructions for doing work on the wrong relay and when a jumper was placed on that relay the Group Seven Isolation occurred. The failure to adequately preplan maintenance work order 1128220 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 5000331/2005003-02), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. This issue was entered into the licensee's corrective action process as CAP 035897.

Corrective actions taken include the restoration of the inadvertent Group Seven Isolation. In addition, the Department Human Performance Clock was reset and all site personnel were informed of the issue through a yellow announcement sheet.

(2) Inadvertent Group 3 Isolation during performance of PWO 1128391

Introduction: A finding of very low safety significance (Green) and an associated NCV of TS 5.4.1, "Procedures," related to the failure to properly perform maintenance work order

1128391 in accordance with Regulatory Guide 1.33 was identified through a self-revealing event.

Description: On April 14, 2005, Electrical Maintenance was performing maintenance activities on the Reactor Protection System Trip Channel A1, “High Drywell Pressure,” in accordance with maintenance work order 1128391. During the performance of landing a lead on terminal ten of relay C71A-K004A, “Channel A1 High Drywell Pressure,” terminal fourteen was grounded. The grounded lead resulted in a blown fuse that caused an inadvertent Group Three isolation. A Group Three isolation results in various primary and secondary containment isolations. The event would have been prevented if the relay being worked was deenergized or if the other terminals of the associated relay would have been insulated to prevent electrical contact and grounding. The primary cause of this issue was a cross-cutting issue associated with a human performance deficiency, in that the worker failed to ensure that the other terminals of the relay were not inadvertently grounded during the maintenance activity.

Analysis: The inspectors determined that the failure to properly perform the associated work procedure was a failure to meet a standard and was reasonably in the licensee’s ability to foresee, therefore, it was 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 concluded that the finding was more than minor due to the effect on the initiating events cornerstone attribute of human performance since the improperly performed maintenance resulted in an actual Group Three isolation.

The inspectors reviewed this finding in accordance with Manual Chapter 0609, “SDP," Appendix G, "Shutdown Operations Significance Determination Process." The inspectors determined that the finding would be evaluated by Checklist 7 since the plant was in refueling operation with the RCS level greater than 23 feet. Since the finding did not increase the likelihood of a loss of RCS inventory, or degrade the ability to terminate a leak path, or degrade the ability to recover DHR, 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 9, “Procedures for Performing Maintenance,” requires procedures for performing maintenance to be properly preplanned and performed in accordance with written procedures or documented instructions appropriate to the circumstances. Contrary to this requirement, electrical maintenance personnel failed to properly perform maintenance work order 1128391, resulting in an inadvertent Group Three isolation on April 14, 2005. Terminal fourteen of relay C71A-K004A was grounded, while landing a lead on terminal ten, which resulted in a blown fuse and a subsequent inadvertent Group Three Isolation. The failure to adequately perform maintenance work order 1128391 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 5000331/2005003-03), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. This issue was entered into the licensee's corrective action process as CAP 035919.

Corrective actions taken include the restoration of the inadvertent Group Three Isolation. In addition, the Department Human Performance Clock was reset and all site personnel were informed of the issue through a yellow announcement sheet.

1R20 Outage Activities (71111.20)

.1 Refueling Outage

a. Inspection Scope

The inspectors observed outage activities for Scheduled Refueling Outage Number 19 during this inspection period. The entire Refueling Outage, which began in the previous inspection period and ended during this inspection period, will count as a total of one sample. Outage configuration management was also monitored on a daily basis by verifying that the licensee maintained appropriate defense in depth to address all shutdown safety functions and satisfy TS requirements, thereby ensuring that the licensee considered risk in developing, planning, and implementing the outage schedule. In addition, proper operation of the decay heat removal system was reviewed during multiple reactor building and control room tours and observations.

The inspectors observed or reviewed electrical lineups, selected clearances, control of containment activities, identification and resolution of problems associated with the outage, and the reactor startup and heatup. The licensee restarted the reactor on May 2, 2005. The documents listed in the Attachment were used to accomplish the objectives of the inspection procedure.

b. Findings

(1) Broken RCIC Instrumentation Line Spring Hanger

Introduction: A finding of very low safety significance (Green) and an associated NCV of TS 5.4.1, "Procedures," was identified during a drywell closeout inspection related to the failure to identify a broken spring hanger. The broken spring hanger rendered a RCIC instrument line inoperable.

Description: On April 23, 2005, the inspectors identified a broken rod on spring hanger 24 for a RCIC instrumentation line while performing the drywell closeout inspection. The licensee had already completed their inspection of the area and failed to identify the broken Spring Hanger. The broken spring hanger was not supporting the RCIC instrument line as designed, therefore; the associated reactor connected piping and instrumentation was inoperable. The Spring Hanger was repaired before plant start up to ensure TS compliance prior to any mode changes.

Analysis: The inspectors determined that the failure to walk down and identify equipment issues that adversely impacted the RCIC system and supporting equipment was a failure to meet a standard and was reasonably in the licensee's ability to foresee therefore it was 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 concluded that the finding was more than minor due to the effect on the mitigating systems cornerstone attribute of equipment availability and reliability for the RCIC system.

The inspectors reviewed this finding in accordance with Manual Chapter 0609, "SDP," Appendix G, "Shutdown Operations Significance Determination Process." The inspectors determined that the finding would be evaluated by Checklist 8 since the plant was in refueling operation with the time to boil greater than two hours and the RCS level less than 23 feet. Since the finding did not increase the likelihood of a loss of RCS inventory, or degrade the ability to terminate a leak path, or degrade the ability to recover DHR, 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 2, "General Plant Operating Procedures," requires procedures to be properly performed in accordance with written procedures or documented instructions appropriate to the circumstances. Contrary to this requirement on April 23, 2005, operations and engineering personnel failed to identify a broken spring hanger, during the drywell closeout inspection that resulted in an inoperable RCIC Instrument Line. The Spring Hanger was repaired on April 30, 2005. The failure to identify material conditions that affect the operability of equipment during the drywell closeout 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 5000331/2005003-04), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. This issue was entered into the licensee's corrective action process as CAP 036151.

Corrective actions taken include the replacement of the spring hanger rod and the adjustment of the spring setting to the original design.

(2) Missing Support Hardware for Drain Line DBD-3 to Heaters 6A-6B

Introduction: A finding of very low safety significance (Green) was identified by the inspectors due to the failure of the licensee to ensure that drain line DBD-3 to feedwater heaters 6A-6B had all the required supporting hardware attached.

Description: On May 6, 2005, the resident inspectors performed a walk down of the feedwater piping in the condenser bay. During that walk down, they identified that there was a significant amount of motion on DBD-3, the one inch drain line to the 6A-6B

heaters. The inspectors pointed out the motion to the licensee's structural engineer and followed up with questions on the potential consequences of the cyclic motion. The inspectors were particularly interested in weld failure due to cyclic fatigue. A closer inspection of the DBD-3 drain line discovered that the piping was missing its' associated supporting hardware. After evaluating the piping movement, the licensee's structural engineers recommended reattaching the associated supporting hardware. The supporting hardware, which was a u-bolt clamp, was installed under CWO A66384.

Analysis: The inspectors determined that the failure to properly attach supporting hardware for the DBD-3 drain line was a failure to meet a standard and was reasonably in the licensee's ability to foresee, therefore; it was 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 concluded that the issue was more than minor since if left uncorrected it would become a more significant safety concern due to potential weld failure from cyclic stress. The weld failure would result in a significant steam leak and a resultant feedwater heater transient.

The inspectors evaluated the finding using IMC 0609, Appendix A, Attachment 1, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Using the Phase 1 SDP worksheet for the initiating event cornerstone, transient initiator contributor, the inspectors determined that the finding did not contribute to the likelihood of a primary system loss of coolant accident initiator; the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available; and the finding did not increase the likelihood of a fire or internal or external flooding. Therefore, the finding was of very low safety significance and screened as Green.

Enforcement: The inspectors determined that not having all of the required supporting hardware attached for the DBD-3 drain line was not a violation of NRC requirements. This determination was based on the fact that the heater drain line is not classified as a safety-related SSC. The licensee entered this into the corrective action program as CAP 036363. (FIN 5000331/2005003-05)

Corrective actions taken included the installation of the associated support hardware for the DBD-3 drain line.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed seven surveillance test activities. Inspection procedure objectives were accomplished as indicated by the documents listed in the Attachment to this inspection report. 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 seven samples:

- Surveillance Test Procedure (STP) 3.7.2-01, River Water Simulated Actuation, during the week ending April 9, 2005;
- STP 3.1.7-02, SBLC System Initiation and Explosive Valve Test, during the week ending April 9, 2005;
- STP 3.6.1.1-04, Containment Leak Tightness Test - Type C Penetrations, during the week ending April 9, 2005;
- STP 3.3.5.1-29, Containment Spray Logic System Functional Test (LSFT) and RHR Timer Calibration, during the week ending, April 23, 2005;
- STP 3.3.3.2-06, Remote Shutdown Panel Functional Test, during the week ending, April 23, 2005;
- STP 3.8.1-07, LOOP, Loss of Coolant Accident Test, during the week ending, April 23, 2005; and
- STP 3.3.5.1-15, RHR LSFT, during the week ending April 30, 2005.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed three temporary modifications. 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 were adequately verified.

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

- Temporary Modification (TM) -05-001; Air Intake to the Control Rod Drive Repair Room for Connecting Two Portable High Efficiency Particulate Air (HEPA) Units Above this Room," during the week ending April 9, 2005;
- CWO C002297, Assemble Refuel Auxiliary Bridge, during the week ending April 9, 2005; and
- TM-RTM-04-OI151, Maintaining Core Spray System Discharge Piping Filled, during the week ending April 16, 2005.

b. Findings

No findings of significance were identified.

1EP2 Alert and Notification System (ANS) Testing (71114.02)

a. Inspection Scope

The inspectors discussed with Emergency Planning (EP) staff the operation, maintenance, and periodic testing of the ANS in the Duane Arnold Energy Center's plume pathway Emergency Planning Zone to determine whether the ANS equipment was adequately maintained and tested in accordance with Emergency Plan commitments and procedures. An inspector also observed and discussed a monthly test of the entire Emergency Planning Zone's siren system that was initiated by a county official from the Benton County Sheriff Department Dispatch Center, as well as an initial assessment of the test results' printout that was performed by licensee EP staff. The inspectors reviewed work orders used to document 2004 preventive maintenance activities, samples of work orders used to document non-scheduled maintenance activities performed between October 2003 and March 2005, and records of monthly ANS tests that were conducted by Benton County and Linn County officials between July 2004 and March 2005.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed and discussed with EP staff the emergency plan commitments, Emergency Plan Implementing Procedures (EPIP), and Emergency Planning Department Manual (EPDM) instructions that addressed the primary and alternate methods of initiating an ERO activation to augment the on-shift ERO, as well as the provisions for maintaining the ERO roster and ERO telephone book. The inspectors reviewed critiques and a sample of CAP records of unannounced off-hours augmentation drills, which involved the entire ERO and were conducted between December 2003 and March 2005, to determine the adequacy of the critiques and associated corrective actions. The inspectors reviewed records and discussed the

bases of the following enhancements to ERO augmentation provisions, which were implemented during roughly the last 12 months: a different, automated ERO call-out system; increased number of ERO members assigned to weekly duty teams; and the increased number of ERO members who are assigned pagers. The inspectors also reviewed the EP training records of a random sample of 30 ERO members, who were assigned to key and support positions, to verify that they were currently trained for their assigned ERO positions. The inspectors also reviewed the ERO roster to verify that good numbers of personnel were assigned to each response position.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed Nuclear Oversight (NOS) staff's 2004 and 2005 reviews of the licensee's Emergency Preparedness program to verify that these independent assessments met the requirements of 10 CFR 50.54(t). The inspectors reviewed a sample of CAP records associated with those reviews to determine whether NOS concerns were being addressed. The inspectors also reviewed critique reports and samples of CAP records associated with the 2004 biennial exercise and some other 2004 drills in order to verify that the licensee fulfilled its annual drill commitments and to evaluate the licensee's efforts to adequately identify, track, and resolve concerns identified during these activities.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

On June 22, 2005, the inspectors observed an Emergency Preparedness drill for a total of one sample. The inspectors observed the ERO, including an operations crew in the control room simulator, ERO staff in the Technical Support Center, and ERO staff in the Operations Support Center. The drill scenario included a steam leak in the RCIC room, an inadvertent HPCI actuation, an anticipated transient without a SCRAM (ATWS), and an unisolable steam leak in the turbine building, which resulted in a radiation release to the environment.

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 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 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 reviewed licensee controls and surveys in the following three radiologically significant work areas within radiation areas, high radiation areas (HRAs), and airborne radioactivity areas in the plant and reviewed work packages which included associated licensee controls and surveys of these areas to determine if radiological controls including surveys, postings, and barricades were acceptable:

- Refuel Floor Fuel Moves and Dryer Inspections;
- Drywell Nozzle In-service Inspection; and
- Torus Diving and Repairs.

This review represented one sample.

The inspectors reviewed the radiation work permits (RWPs) and work packages used to access these three areas and other high radiation work areas to identify the work control

instructions and control barriers that had been specified. Electronic dosimeter alarm set points for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy. Workers were interviewed to verify that they were aware of the actions required when their electronic dosimeters noticeably malfunctioned or alarmed. This review represented one sample.

The inspectors walked down and surveyed (using an NRC survey meter) these three areas to verify that the RWP, procedure, 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 RWPs for the airborne radioactivity areas to verify barrier integrity and engineering controls performance (e.g., HEPA ventilation system operation) and to determine if there was a potential for individual worker internal exposures of greater than 50 millirem committed effective dose equivalent. There were no airborne radioactivity areas in the plant during this outage. Work areas having a history of, or the potential for, airborne transuranics were evaluated to verify that 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 greater than 50 millirem committed effective dose equivalent was assessed. There were no internal exposures greater than 50 millirem. This review represented one sample.

The inspectors also reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) stored within spent fuel or other storage pools. 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, Licensee Event Reports, and Special Reports related to the access control program to verify that identified problems were entered into the corrective action program for resolution. This review represented one sample.

The inspectors reviewed six corrective action reports related to access controls and two high radiation area radiological incidents (non-performance indicators identified by the licensee in high radiation areas less than 1R/hr). 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:

1. Initial problem identification, characterization, and tracking;

2. Disposition of operability/reportability issues;
3. Evaluation of safety significance/risk and priority for resolution;
4. Identification of repetitive problems;
5. Identification of contributing causes;
6. Identification and implementation of effective corrective actions;
7. Resolution of NCVs tracked in the corrective action system; and
8. Implementation/consideration of risk significant operational experience feedback.

This review represented one sample.

The inspectors evaluated the licensee's process for problem identification, characterization, prioritization, and verified that problems were entered into the corrective action program and resolved. For repetitive deficiencies and/or significant individual deficiencies in problem identification and resolution, the inspectors verified that the licensee's self-assessment activities were capable of identifying and addressing these deficiencies. This review represented one sample.

The inspectors reviewed licensee documentation packages for all PI events occurring since the last inspection to determine if any of these PI events involved dose rates greater than 25 R/hr at 30 centimeters or greater than 500 R/hr at 1 meter. Barriers were evaluated for failure and to determine if there were any barriers left to prevent personnel access. There were no PI events occurring since the last inspection. This review represented one sample.

b. Findings

No findings of significance were identified.

.4 Job-In-Progress Reviews

a. Inspection Scope

The inspectors observed the following two jobs that were being performed in radiation areas, airborne radioactivity areas, or high radiation areas for observation of work activities that presented the greatest radiological risk to workers:

- Drywell Nozzle In-service Inspection; and
- Torus Diving and Repairs.

The inspectors reviewed radiological job requirements for these two activities, including RWP requirements and work procedure requirements, and attended As Low As Reasonably Achievable (ALARA) job briefings. This review represented one sample.

Job performance was observed with respect to these requirements to verify that radiological conditions in the work area were adequately communicated to workers through pre-job briefings and postings. The inspectors also verified the adequacy of radiological controls including required radiation, contamination, and airborne surveys for system breaches; radiation protection job coverage which included audio and visual

surveillance for remote job coverage; and contamination controls. This review represented one sample.

Radiological work in high radiation work areas having significant dose rate gradients was reviewed to evaluate the application of dosimetry to effectively monitor exposure to personnel and to verify that licensee controls were adequate. These work areas involved areas where the dose rate gradients were severe (i.e., diving activities and the reactor water cleanup heat exchanger room) which increased the necessity of providing multiple dosimeters and/or enhanced job controls. No jobs observed required multiple dosimeters. This review represented one sample.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors held discussions with the Radiation Protection Manager concerning high dose rate/high radiation area and very high radiation area controls and procedures, including procedural changes that had occurred since the last inspection, in order to verify that any procedure modifications did not substantially reduce the effectiveness and level of worker protection. This review represented one sample.

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

The inspectors conducted plant walkdowns to verify the posting and locking of entrances to high dose rate HRAs; however, there were no accessible very high radiation areas in the plant. 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 and evaluated whether workers were aware of the significant radiological conditions in their workplace, of 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.

The inspectors reviewed radiological problem reports which found that the cause of the event was due to radiation worker errors 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. These problems, along with planned and taken corrective actions, were discussed with the Radiation Protection Manager. This review represented one sample.

b. Findings

No findings of significance were identified.

.7 Radiation Protection Technician Proficiency

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation protection technician performance with respect to radiation protection work requirements and evaluated whether they 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.

The inspectors reviewed radiological problem reports which found that the cause of the event was radiation protection technician error 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.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstone: Occupational Exposure

.1 Radiation Safety Strategic Area

a. Inspection Scope

During the week ending April 9, 2005, the inspectors reviewed the licensee draft data collections used to prepare submittals for two PIs. The inspectors used PI guidance and definitions contained in Nuclear Energy Institute Document 99-02, Revision 2, “Regulatory Assessment Performance Indicator Guideline,” to verify the accuracy of the PI data. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection procedure. The inspectors' review included, but was not

limited to, conditions and data from logs, licensee event reports, condition reports, and calculations for each PI specified.

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

- Occupational Exposure Control Effectiveness, for the period of January 2005 through March 2005; and

- RETS/ODCM Radiological Effluent Occurrence, for the period of January 2005 through March 2005.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

.2 Emergency Preparedness Strategic Areas

a. Inspection Scope

During the week ending May 7, 2005, the inspectors reviewed the licensee's records associated with the three Emergency Preparedness PIs listed below. The inspectors verified that the licensee accurately reported these indicators in accordance with relevant procedures and Nuclear Energy Institute guidance endorsed by NRC. Specifically, the inspectors reviewed licensee records associated with PI data reported to the NRC for the period July 2004 through March 2005. Reviewed records included: procedural guidance on assessing opportunities for the three PI; assessments of PI opportunities during pre-designated Control Room Simulator training sessions, the 2004 biennial exercise, and integrated emergency response facility drills; revisions of the roster of personnel assigned to key ERO positions; and results of monthly ANS operability tests.

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

Common

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

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

.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. This activity does not count as an annual sample.

b. Findings

No findings of significance were identified.

.2 Routine Review of Identification and Resolution of Problems associated with the Inservice Inspection Program

a. Inspection Scope

From April 4 through 6, 2005, the inspectors performed a review of a sample of inservice inspection related problems that were identified by the licensee and entered into the corrective action program. The inspectors reviewed these corrective action program documents to confirm that the licensee had appropriately described the scope of the problems. Additionally, the inspectors' review included confirmation that the licensee had an appropriate threshold for identifying issues and had implemented effective corrective actions. The inspectors performed these reviews to ensure compliance with 10 CFR Part 50 Appendix B, Criterion XVI, "Corrective Action," requirements. The specific corrective action documents that were reviewed by the inspectors are listed in the attachment to this report. This activity does not count as an annual sample.

b. Findings

No findings of significance were identified.

.3 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 station's daily condition report packages. This activity does not count as an annual sample.

b. Findings

No findings of significance were identified.

.4 Semi-Annual Trend Review

a. Inspection Scope

During the week ending June 25, 2005, the inspectors performed a review of the licensee's CAPs and associated documents to identify trends that could indicate the existence of a more significant safety issue. This review focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in section 4OA2.2 above, licensee trending efforts, and licensee human performance results. Nominally, the review considered the six-month period of January 2005 through June 2005, although some examples expanded beyond those dates when the scope of the trend warranted.

The inspectors' semi-annual trend review also included issues documented in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The results of this trend review was compared and contrasted with the results contained in the licensee's CAP and Nuclear Oversight Department reports. Corrective actions associated with a sample of the trends identified by the licensee were reviewed for adequacy.

Inspectors also evaluated the licensee's trending CAPs against the requirements of the licensee's Corrective Action Process as specified in ACP 114.8, "Action Request Trending," Revision 5. Additional documents reviewed are listed in the attachment. This activity does not count as an annual sample.

b. Findings and Issues

No findings or issues of significance were identified.

.5 Classification of Corrective Actions

a. Inspection Scope

The inspectors reviewed the licensee's significance classification and evaluation process for a sample of CAPs generated during this quarter's reporting period. The assessment included a review of the category assigned, operability and reportability determinations, extent of condition evaluations, cause investigations, and the appropriateness of the assigned corrective actions. They also attended daily Corrective Actions Review Board (CARB) screening meetings to observe the assignment of CAP categories for current issues.

In most instances, the licensee appropriately classified items entered into the corrective action program into one of four significance levels (A-D), with the more safety significant issues being given a higher significance classification. Issues classified at the A or B level were generally designated to receive a root cause or an apparent cause evaluation.

Issues classified at the C or D level usually did not receive a root or apparent cause evaluation, but were evaluated using an action request or condition evaluation. The significance threshold for entering issues into the program appeared appropriate. The licensee had previously identified a weakness in classification of CAPs during the 4th quarter 2004 (CAP 34350) in that four CAPs were initially assigned a significance level of C when assignment of significance level B would more appropriately have provided an extent of condition review commensurate with the problem identified. A review of the corrective actions associated with this CAP and the associated condition evaluation, did not identify any issues. Additional documents reviewed are listed in the attachment.

During the observation of several daily CARB sessions, the inspectors noted that members of the management team were actively participating in the daily screening process, and that the screening team used a clearly defined matrix to determine the significance level of problems identified. The inspectors did notice one issue of note in that there were several examples of items identified and placed into the quality assurance portion of the CAP action request tracking system (Team Trak), that the screening board correctly characterized as maintenance work tracking items, therefore they should have been entered into the non-CAP portion of the action request tracking system. The reclassification of these maintenance items placed an additional burden on the CARB. During the review of the CAPs for this sample, there were no instances of significant conditions adverse to quality not being properly identified or incorrectly being entered into the non-CAP portion of the action request tracking system. This activity counts as one annual sample.

b. Findings and Issues

No findings or issues of significance were identified.

4OA4 Cross-Cutting Aspects of Findings

.1 A finding described in Section 1R19 of this report had, as its primary cause, a Human Performance deficiency, in that, maintenance engineering personnel failed to adequately preplan maintenance work order 1128220, resulting in an inadvertent Group Seven Isolation.

.2 A finding described in Section 1R19 of this report had, as its primary cause, a Human Performance deficiency, in that, electrical maintenance personnel failed to properly perform maintenance work order 1128391, resulting in an inadvertent Group Three isolation.

4OA5 Other Activities

.1 Operation of an Independent Spent Fuel Storage Installation (60855.1)

a. Inspection Scope

The inspector evaluated the licensee's monitoring of dry fuel storage to verify that the concrete temperatures remained within long-term storage limits. The inspector verified

that the monitoring (visual inspections that the vent screens were clear and of the thermocouple readings) were performed as specified in the site surveillance test procedure, STP 3.0.0-03, “Refueling Instrument Checks.” The inspector also reviewed data for the ten horizontal storage modules, and compared it to the requirements specified in the Certificate of Compliance, the Technical Specifications, and the Safety Analysis Report.

b. Findings

No findings of significance were identified.

.2 Operational Readiness of Offsite Power (Temporary Instruction (TI) 2515/163)

The objective of TI 2515/163, "Operational Readiness of Offsite Power," was to confirm, through inspections and interviews, the operational readiness of offsite power (OSP) systems in accordance with NRC requirements. On May 22 - 25, 2005, the inspectors reviewed licensee procedures and discuss the attributes identified in TI 2515/163 with licensee personnel. In accordance with the requirements of TI 2515/163, inspectors evaluated licensee procedures against the attributes discussed below.

The operating procedures that the control room operator uses to assure the operability of the OSP have the following attributes:

1. Identify the required control room operator actions to take when notified by the transmission system operator (TSO) that post-trip voltage of the OSP at the Nuclear Power Plant will not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply.

2. Identify the compensatory actions the control room operator is required to perform if the TSO is not able to predict the post-trip voltage at the Nuclear Power Plant for the current grid conditions.

3. Identify the notifications required by 10 CFR 50.72 for an inoperable offsite power system when the nuclear station is either informed by its TSO or when an actual degraded voltage condition is identified.

The procedures to ensure compliance with 10 CFR 50.65(a)(4) have the following attributes:

1. Direct the plant staff to perform grid reliability evaluations as part of the required maintenance risk assessment before taking a risk-significant piece of equipment out-of-service to do maintenance activities.

2. Direct the plant staff to ensure that the current status of the OSP system has been included in the risk management actions and compensatory actions to reduce the risk when performing risk-significant maintenance activities or when LOOP or SBO mitigating equipment are taken out-of-service.

3. Direct the control room staff to address degrading grid conditions that may emerge during a maintenance activity.

4. Direct the plant staff to notify the TSO of risk changes that emerge during ongoing maintenance at the nuclear power plant.

The procedures to ensure compliance with 10 CFR 50.63 have the following attribute:

1. Direct the control room operators on the steps to be taken to try to recover offsite power within the SBO coping time.

The results of the inspectors' review were forwarded to the office of Nuclear Reactor Regulation for further review and evaluation.

.3 (Closed) Unresolved Item (URI) 5000331/2005002-01, Failure to Perform Vessel Weld Attachment Inspections Examinations

On March 10, 2005, the licensee identified that they were not in compliance with the ASME Boiler and Pressure Vessel Code Section XI percentage requirements for examining reactor vessel attachment welds. The non compliance was the result of the failure to perform the weld inspections on the four vessel stabilizer welds.

The licensee is committed to use Code Case N-509 for examining the reactor vessel attachment welds. Code Case N-509 requires the performance of surface exams on 100% of the reactor coolant pressure boundary vessel attachment welds.

In addition, the licensee is required to perform the exams in accordance with the frequencies described in Code Case N-598. Code Case N-598 breaks the ten-year interval into three periods. The interval consist of a three-year period, a four-year period, and a three-year period. Each period has a minimum percentage requirement and since the schedule did not include the vessel stabilizer welds the percentages were not meet for the first three-year period or the second four-year period. Therefore, this condition was not in compliance with the requirements of 10 CFR 50.55.a(g)(4).

The inspectors noted the fact that no indications were found during the last weld examinations of the vessel stabilizer welds which occurred in 1996 and 1989. In addition, there has not been an inspection in which a failed weld attachment of the vessel was identified.

The licensee performed weld examination results for the vessel stabilizer welds during the Refueling Outage in the month of April 2005 and no abnormalities or indications were identified, therefore this issue is of very low safety significance.

This issue is closed to a licensee identified violation associated with 10 CFR 50.55a(g)(4) as documented in Section 4OA7.1 of this report. The licensee documented the issue in CAP 35212.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. G. Van Middlesworth and other members of licensee management on June 30, 2005. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exit meetings were conducted for:

- Inservice Inspection IP 7111108 with Mr. D. Curtland, Plant Manager, on April 8, 2005;
- Occupational Radiation Safety inspection with Mr. D. Curtland, Plant Manager, on April 8, 2005;
- Independent Spent Fuel Storage Installation with Mr. D. Curtland, Plant Manager, on April 22, 2005;
- Emergency Preparedness inspection with Mr. M. Peifer, Site Vice President, on May 6, 2005; and
- Maintenance Effectiveness Periodic Evaluation with Mr. J. Bjorseth, Site Director, on June 17, 2005;

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 Manual, NUREG-1600, for being dispositioned as an NCV.

Cornerstone: Barrier Integrity

.1 As discussed in Section 4OA5.3 of this report, 10 CFR 50.55a(g)(4) requires, in part, that throughout the service life of a boiling or pressurized water reactor facility, components must meet the requirements set forth in the ASME Code, Section XI. Section XI, Article IWB-2412 states that, “The required examinations shall have been completed during successive inspection intervals in accordance with Table IGC-2412-1.” Contrary to these requirements, the licensee failed to examine the Reactor Vessel attachment welds during the ISI Third Interval First and Second Period as scheduled in accordance with Code Case N-509 as authorized by the NRC in the submitted ISI relief request NDE-R035 and required by the ASME code Section XI. In addition, they also failed to meet the requirements of the approved code case N-598 which talks about the scheduling of these inspections.

The licensee performed weld examination results for the vessel stabilizer welds during the Refueling Outage in the month of April 2005, and no abnormalities or indications were identified, therefore this issue is of very low safety significance. Since this issue is of the very low safety significance and because it was entered into the licensee's corrective action process, CAP 35212, 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
G. Van Middlesworth, Site Vice President
J. Bjorseth, Site Director
D. Curtland, Plant Manager
G. Rushworth, Operations Manager
S. Catron, Nuclear Safety Assurance Manager
S. Haller, Site Engineering Director
B. Kindred, Security Manager
C. Kress, Training Manager
G. Pry, Maintenance Manager
D. Wheeler, Chemistry Manager
J. Windschill, Radiation Protection Manager

Nuclear Regulatory Commission
D. Spaulding, Project Manager, NRR
B. Burgess, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

5000331/2005003-01	FIN	Failure to Control Materials in the Areas Adjacent to the Main, Startup, and Standby Transformers and the Switchyard. (1R01)
5000331/2005003-02	NCV	Failure to Properly Preplan Maintenance Instructions Resulting in an Inadvertent Group Seven Isolation. (1R19)
5000331/2005003-03	NCV	Failure to Properly Perform Maintenance Instructions Resulting in an Inadvertent Group Three Isolation. (1R19)
5000331/2005003-04	NCV	Failure to Identify a Broken Spring Hanger on a RCIC Instrument Line during the Drywell Closeout Inspection. (1R20)
5000331/2005003-05	FIN	Failure to Have All Support Hardware Attached to the DBD-3 Drain Line from the 6A & 6B Feedwater Heaters. (1R20)

Closed

5000331/2005003-01	FIN	Failure to Control Materials in the Areas Adjacent to the Main, Startup, and Standby Transformers and the Switchyard. (1R01)

5000331/2005003-02	NCV	Failure to Properly Preplan Maintenance Instructions Resulting in an Inadvertent Group Seven Isolation. (1R19)
5000331/2005003-03	NCV	Failure to Properly Perform Maintenance Instructions Resulting in an Inadvertent Group Three Isolation. (1R19)
5000331/2005003-04	NCV	Failure to Identify a Broken Spring Hanger on a RCIC Instrument Line during the Drywell Closeout Inspection. (1R20)
5000331/2005003-05	FIN	Failure to Have All Support Hardware Attached to the DBD-3 Drain Line from the 6A & 6B Feedwater Heaters. (1R20)
5000331/2005002-01	URI	Failure to Perform Vessel Weld Attachment Inspections. (4OA5)

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.

1R01 Adverse Weather

IPOI 6, Cold Weather Operations, Revision 31
Operating Instruction (OI) 711, Pumphouse HVAC System, Revision 7
OI 711A1, Pumphouse HVAC Electrical Lineup, Revision 1
OI 710, Intake Structure HVAC System, Revision 10
OI 710A1, Intake Structure HVAC Electrical Lineup, Revision 2
OI 537, Condensate/Demin Services Water, Revision 32
AOP 903, Tornado, Revision 15
CAP 036858; Potential Missile Hazards in the Protected Area/Switchyard; dated June 21, 2003 (NRC Identified)

1R04 Equipment Alignment

Operating Instruction (OI) 151A1, Core Spray System Electrical Lineup, Revision 2
OI 151A4, 'B' Core Spray System Valve Lineup and Checklist, Revision 2
OI 410A1, RWS Electrical Lineup, Revision 8
OI 410A4, 'B' RWS Valve Lineup and Checklist, Revision 7
OI 435A1, Fuel Pool Cooling System Electrical Lineup, Revision 2
OI 435A2, Fuel Pool Cooling System Valve Lineup and Checklist, Revision 2
OI 151A2, 'A' Core Spray System Valve Lineup and Checklist, Revision 1

1R05 Fire Protection

AFP 17, Turbine Building Condenser Bay, Heater Bay and Steam Tunnel, Revision 23
AFP 21, Turbine Building North Turbine Operating Floor, Revision 23
AFP 22, Turbine Building South Turbine Operating Floor, Revision 24
AFP 05, Reactor Building - South CRD Module - Drywell Area Only, Revision 26
AFP 1, Reactor Building Torus Area and North Corner Rooms, Revision 24
AFP 2, Reactor Building South Corner Rooms, Revision 23
AFP 4, Reactor Building North CRD Module Area, and CRD Repair Room, Revision 26
AFP 8, Reactor Building Standby Gas Treatment System and MG Set Rooms, Revision 24
AFP 9, Reactor Building RBCCW Heat Exchanger Area, Equipment Hatch Area, and Jungle Room, Revision 25
AFP 74, Site Switchyard, Revision 4
CAP 036713; Combustible Material Storage; dated June 21, 2005 (NRC Identified)
CAP 036606; Control of Combustibles; dated May 27, 2005 (NRC Identified)
CAP 036594; Fire Barrier Penetration Seal Inspection; dated May 26, 2005 (NRC Identified)

1R06 Flood Protection Measures

Individual Plant Examination, Internal Flooding Analysis, Section 3.3.6, November 1992
AOP 902, Flood, Revision 25

1R07 Heat Sink Performance

PWO 1128081, 'A' RHR Loop Heat Exchanger Inspection, April 11, 2005
Equipment Monitoring Procedure EMP-1E201-HT, RHR Heat Exchangers Heat Transfer Test, Revision 2

1R08 Inservice Inspection

CAP 010240; Approximately 26 1/4-inch of Incomplete Weld Was Observed Between Torus Shell and Ring Girder; dated April 26, 2001
OTH 012229; Repair of Torus Weld on Ring Girder to Shell; dated May 8, 2001
CAP 035691; After Removing Weld Cap on WO 1129234, Weld Failed Surface Exam; dated April 6, 2005
CAP 035212; DAEC ISI Program May Not Meet Percentages for Category B-K; dated March 10, 2005
CAP 039930; DAEC ISI Program May Not Meet Period Percentages for Category B-K; dated March 15, 2005
CAP 035304; Recommended Revision to Operability Recommendation OPR000283 (CAP035212); dated March 17, 2005
CAP 039974; Recommended Revision to Operability Recommendation OPR000283 (CAP035212); dated March 21, 2005
ACE 001435; DAEC ISI Program May Not Meet Period Percentages for Category B-K; March 15, 2005
OPR 000283; Operability Recommendation (CAP 035212); dated March 11, 2005
IO5058; Ultrasonic Examination Data Sheet Weld ID: RRD-J005; dated April 7, 2005
IO5040; Ultrasonic Examination Data Sheet Weld ID: CRA-J032; dated April 7, 2005
IO5040; Volumetric Examination Method Ferritic Piping Weld ID: CRA-J032; dated April 7, 2005
IO5034; Ultrasonic Examination Data Sheet Weld ID: PSA-J001; dated April 7, 2005
ACP 1211.38; Ultrasonic Examination of Dissimilar Metal Piping Welds; Revision 2
ACP 1211.27; Manual Ultrasonic Examinations of Reactor Pressure Vessel Welds; Revision 1
UT 103; Automated Ultrasonic Examination of Dissimilar Metal Piping Welds; Revision 1
ACP 1211.5; NDE Procedure Magnetic Particle (Dry or Wet Visible) MT-1; Revision 6
ACP 1211.3; NDE Procedure for Liquid Penetrant (Visible Dye and Water Washable) PT-1; Revision 7
ACP 1211.19; Ultrasonic Examination of Ferritic Piping Welds; Revision 4
ACP 1211.20; Ultrasonic Examination of Austenitic Piping Welds; Revision 5
ACP 1211.36; Reactor Pressure Vessel Inspection Procedure; Revision 0
DAEC-SC-PEG-08; DAEC Shelf Life Evaluation Program; Revision 0
DAEC Third Ten Year ISI Plan
Engineering Evaluation of ISI/ISP No. IO3034; dated April 4, 2003
Duane Arnold Flaw Evaluation Worksheet; dated July 1, 2003
NG-03-0577; Evaluation of Indication in Dollar Weld HCC-B002; dated August 7, 2003

WE Visual Examination Data Sheet ISI/ISP No. IO1184; dated May 22, 2001
IWE Visual Examination Data Sheet ISI/ISP No. I99128; dated February 17, 2000
DWG NO. VS-01-06; Tod Head Assembly; Revision 3
ISO NO. 1.2-20; Recirculation Manifold "A" and Risers E, F, G, and H; Revision 4
Demonstration for Magnetic Particle Examination thru Paint; dated October 11, 1995
WPS P8-AT-Ag; Revision 12
PQR PrQR-W-4; Revision 1
NIS-2 19-03-10; PWO A63477 Replace Seal Lines on HPCI System
NIS-2 19-05-02; MWO 1126360 Replace 1P211A Seal
NIS-2 18-03-06; CWO A 57816 RPV Head Spray Supports
WPS P1-AT-Lh; Revision 8
PQR PrQR-W-2; dated May 16, 1975
PQR PrQR-W-6; dated May 16, 1975
PQR PrQR-W-12; Revision 1
Certifications for NDE Personnel:

1. Fisher, Todd M.
2. Stevermer, Aaron J.
3. Thomas, Wayne L.
4. Thomas, Travis W.
5. Thompson, Lee D.
6. Vanruler, Christopher D.

1R11 Licensed Operator Requalification Program

Evaluation Scenario Guide 2005B-1, Station Blackout, Revision 0
EOP 2, Primary Containment Control, Revision 12
EOP 1, Reactor Pressure Control, 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
AOP 301.1, Station Blackout, Revision 24

1R12 Maintenance Effectiveness

November/December 2004 Maintenance Rule Monitoring and Status Report, March 29, 2005
Maintenance Rule Performance Criteria Basis Document for 125 Vdc, Revision 4
Maintenance Rule Criteria Values for 125 Vdc, April 2005
CAP 031811; 125 Vdc grounds found out of spec without alarm; dated May 28, 2005
CAP 032906; Received Spurious 125 Vdc System 2 Trouble Alarm; dated September 3, 2004
CAP 034494; Received 125 Vdc Trouble; dated January 12, 2005
CAP 035698; STP 3.3.3.2-05 Unsat; dated April 6, 2005
Maintenance Rule Cycle 17 Periodic Report; May 1999 - April 2001; dated 2001
Maintenance Rule Cycle 18 Periodic Report; May 27, 2001 - April 20, 2003; dated October 2003
Summary of DAEC Maintenance Rule System Goals for RED (a)(1) Systems; dated May 5, 2005

125 Vdc Root Cause Analysis RCE 0002261; Fall 2002
Feedwater/Condensate System Evaluation of 50.65(a)(1) (Red) Analysis for Goal Setting; dated February 2000
Maintenance Rule Criteria Values; dated May 25, 2005
DAEC Maintenance Preventable Functional Failures for Cycle 18 from May 2001 to April 2003; dated May 24, 2005
Expert Panel Meeting Minutes; dated August 6, 2001
Expert Panel Meeting Minutes; dated June 10, 2002
May/June 2001 Maintenance Rule Monitoring and Status Report; dated August 31, 2001
January/February 2003 Maintenance Rule Monitoring and Status Report; dated February 28, 2003
125 Vdc System Health and Status Report; June 2005
Diesel Generator System Health and Status Report; June 2005
Main Condenser System Health and Status Report; June 2005
Feedwater System Health and Status Report; June 2005
CAP 19655; 1D4 250 Vdc Battery Declared Inoperable Did Not Meet Tech Spec Limit; dated October 17, 2002
CAP 025411; Need to Evaluate Fuel Oil in 1T34 for SBDG Fuel Oil Makeup; dated February 3, 2003
CAP 036437; Maintenance Rule SUS 44, FW/Condensate Return to 50.65 Red; dated May 12, 2005
DAEC Maintenance Rule Program, Module 0; Revision 3
DAEC Maintenance Rule Program, Module 5, Preparation of Cyclic Report; Revision 6
Maintenance Rule; On-Line Maintenance and Performance Criteria Assessment; dated June 1999

1R13 Maintenance Risk Assessments and Emergent Work Control

Work Procedure Guidelines (WPG) - 2, On-Line Risk Management Guideline, Revision 19
Maintenance Risk Evaluation for Week 19, May 9, 2005
DAEC Online Schedule, Week 9518/9519, May 9, 2005
Maintenance Risk Evaluation for Week 20, May 12, 2005
DAEC Online Schedule, Week 9519/9520, May 12, 2005
Maintenance Risk Evaluation for Week 21, May 19, 2005
DAEC Online Schedule, Week 9520/9521, May 19, 2005
Maintenance Risk Evaluation for Week 22, May 26, 2005
DAEC Online Schedule, Week 9520/9522, May 26, 2005
Maintenance Risk Evaluation for Week 24, June 10, 2005 (Revision 0 and 1)
DAEC Online Schedule, Week 9523/9524, June 9, 2005

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

IPOI 2, Startup, Revision 75
IPOI 3, Power Operations, Revision 73
Special Test Procedure (SpTP) 203, Power Ascension Test to Greater Than 1790 MWTH, Revision 0
SpTP 203, Power Ascension Test to Greater than 1790 MWt (Post Refueling Outage 19), Revision 0

SpTP 209, Pressure Regulator Dynamic Tuning, Revision 0
IPOI 4, Shutdown, Revision 71
AOP 255.2, Power/Reactivity Abnormal Change, Revision 26

1R15 Operability Evaluations

Fleet Procedure (FP) -OP-OL-01, Operability Determination, Revision 1
ACP 110.3, Operability Determination, Revision 1
ACP 114.5, Action Request System, Revision 32
CE 002452; Evaluate thinned piping exams found on HLE 13, 15, and 16 exams; dated April 6, 2005
Regulatory Guide 1.147; Inservice Inspection Code Case Acceptability - American Society of Mechanical Engineers Section XI; Revision 13
American Society of Mechanical Engineers Code Case N-597-1; Requirements for Analytical Evaluation of Pipe Wall Thinning; dated September 7, 2001
Evaluation of Allowable Wall Thinning Downstream of MO 2112; dated March 11, 2005
Evaluation of Allowable Wall Thinning Downstream of MO 2132; dated March 4, 2005
Evaluation of Allowable Wall Thinning Downstream of MO 1934; dated March 11, 2005
Electric Power Research Institute Report NSAC-202L-R2; Recommendations for an Effective Flow-Accelerated Corrosion Program; dated April 1999
CAP 035498; Pressure Regulator Failure; dated April 14, 2005
OPR 286, Pressure Switches for Turbine Control Valve Fast Closure, April 19, 2005
OPR 284, RCIC Room Cooler, March 23, 2005
OPR 285, Torus Coatings, April 15, 2005
CAP 036710; Engineering Evaluation 04-E09; dated June 7, 2005 (NRC Identified)

1R16 Operator Workarounds

ACP 1410.12, Operator Burden Program, Revision 0
Operations -001, Operator Burden and Tagout Audit, Revision 31
OWA 00-004, Control Building Chillers Trip, January 29, 2004
OWA 03-001, Control Room Habitability, January 29, 2004
OWA 03-002, 'A' and 'C' source range monitors spiking, September 14, 2004
OWA 03-004, Control Valve (CV) 1622 sticking, May 3, 2004
OWA 04-002, Feed water level control, October 27, 2004
Operator Challenge 02-002, Control Rods Double Notch, January 30, 2004
Operator Challenge 05-001, Condensate Pumps, May 6, 2005
Operations -001, Operator Burden and Tagout Audit, Revision 31
CAP 036358; 2 Condensate Pumps Running; dated May 6, 2005
CAP 036377; 1E-002A Feedwater Heater Level; dated May 8, 2005
Annunciator Response Procedure 1C06B, Feedwater and Condensate, Revision 35

1R17 Permanent Plant Modifications

General Modification Controlling Procedure GMCP-ECP1702, Control Rod Blade Replacement with Marathon Control Rod Blade Assemblies, February 8, 2005
10 CFR 50.59 Screening package # 4354 for ECP1702-Control Rod Blade Replacement, dated January 21, 2005
DAEC UFSAR Chapter 4, Reactor, Revision 17, October 2003

Topical Report NEDE-31758P, “GE Marathon Control Rod Assembly” and
NEDE-30931-6-P, GE BWR Control Rod Lifetime
STP NS550004, CRD Friction Testing, Revision 9
STP 3.1.3-02, Control Rod Coupling Integrity Check, Revision 5
STP 3.1.4-01, SCRAM Insertion Time Test, Revision 15
STP 3.1.1-01, Shutdown Margin Test, Revision 2
STP 3.1.2-01, Reactivity Anomalies Check, Revision 10
DAEC Control Rod Withdrawal Sequence Sheets for Cycle 20, A2 Sequence, and Plant Startup plan from Refueling Outage 19, dated April 19, 2005

1R19 Post-Maintenance Testing

Maintenance Directive-024, Post Maintenance Testing Program, Revision 31
CWO A67565, Replace the EG-A for the ‘A’ SBDG, April 6, 2005
STP 3.8.1-06 SBDG Operability Test (Fast Start), Revision 21
PWO 1129989, Eliminate Flanges in Torus Air Space for ‘B’ RHR, November 11, 2004
PWO 1128220, Diagnostic Test of RBCCW to Drywell Return Header Isolation, April 13, 2005
CAP 035897; Inadvertent Group 7 Isolation; dated April 14, 2005
PWO 1128391, Reactor Protection System Trip Channel 1, April 14, 2005
CAP 035919; Group 3 Isolation; dated April 14, 2005
CWO A67500, 10 Year Reactor Vessel Hydro for Control Rod Hydraulic System Work, April 15, 2005
STP 3.10.1-02, Non Nuclear Heat Class 1 Ten Year System Leakage Pressure Test, Revision 11
CWO A67505, Control Rod Drive Friction Testing for Control Rod Hydraulic System Work, April 15, 2005
STP NS550004 CRD Friction Testing, Revision 9
CWO A67501, SCRAM Insertion Timing Test for Control Rod Hydraulic System Work, April 15, 2005
STP 3.1.4-01, SCRAM Insertion Time Test, Revision 15
CWO A67502, Nuclear Steam Supply System Shutoff Work, April 15, 2005
STP 3.0.0.-01, Instrument Checks, Revision 53

1R20 Outage Activities

Planned Outage Look Ahead Report, March 4, 2005
Planned Outage Risk Analysis, February 17, 2005
IPOI 1, Startup Checklist, Revision 90
IPOI 2, Startup, Revision 75
IPOI 3, Power Operations, Revision 61
IPOI 8, Outage and Refueling Operations, Revision 30
Operating Instruction (OI) 149, RHR System, Revision 81
Outage Management Guidelines, Outage Risk Management Guidelines, Revision 11
CAP 036151; RCIC System Spring Hanger; dated April 25, 2005 (NRC Identified)
CAP 036104; Belzona found spilled onto cable trays; dated April 23, 2005 (NRC Identified)
CAP 036260; Small Bore Piping not properly installed; dated May 2, 2005 (NRC Identified)

CAP 036363; Drain Line DBD-3 to Heaters 6A-6B; dated May 6, 2005 (NRC Identified)
CAP 036273; SCRAM Time Testing; dated May 3, 2005 (NRC Identified)
CAP 036448; Evaluate Revision to IPOI 7; dated May 13, 2005 (NRC Identified)

1R22 Surveillance Testing

STP 3.7.2-01, River Water Simulated Actuation, Revision 11
STP 3.1.7-02, SBLC System Initiation and Explosive Valve Test, Revision 9
STP 3.6.1.1-04, Containment Leak Tightness Test - Type C Penetrations, Revision 9
STP 3.3.5.1-29, Containment Spray LSFT and RHR Timer Calibration, Revision 7
STP 3.3.3.2-06, Remote Shutdown Panel Functional Test, Revision 2
STP 3.8.1-07, LOOP Loss of Coolant Accident Test, Revision 15
STP 3.3.5.1-15, RHR LSFT, Revision 4

1R23 Temporary Modifications

FP-E-MOD-03, Temporary Modifications, Revision 0
ACP 1410.6, Temporary Modification Process, Revision 40
TM-05-001; Air Intake to the Control Rod Drive Repair Room for Connecting Two Portable HEPA Units Above this Room; dated March 23, 2005
Specification MRS-M068; Technical Specification for the Ventilating Ductwork for the Duane Arnold Energy Center; Revision 4
Engineering Design Guide DGC-M-100; Stress Analysis and Support Design of Seismic Category I Piping Systems; Revision 7
CWO A68913; Provide Cooling to the Control Rod Drive Rebuild Room in Support of Maintenance During Refueling Outage 19; dated March 21, 2005
GMP-CNST-01; Installation of Hilti Kwik Bolt II and Drop-In Anchors; Revision 13
ACP 1408.9; Control of Transient Equipment; Revision 5
ACP 1408.1; Work Orders; Revision 63
ACP 1203.59; Power Systems Configuration and Analyses; Revision 2
Drawing BECH-M152; Reactor Building Air Flow Diagram; Revision 26
CWO C002297, Assemble Refuel Auxiliary Bridge, March 24, 2005
ACP 1408.2; Scaffold Control; Revision 18
Memorandum, Requirements for use of Auxiliary Bridge over the reactor vessel, March 8, 2005
OI 151, Core Spray System, Revision 44
TM RTM-04-OI151, Maintaining Core Spray System Discharge Piping Filled, March 14, 2005

1EP2 Alert and Notification System (ANS) Testing

EPDM 1013; Emergency Siren and Siren Sign Program; Revision 2
Offsite Emergency Plan Prompt Alert and Notification System Addendum for the Duane Arnold Energy Center; Revision 4A; dated December 1999
High Power Voice and Siren System Inspection, Testing, and Repair Procedure; undated
Work Orders 1127007 through 1127150 on Annual Preventive Maintenance of Each Emergency Planning Zone Siren; dated May 2004 through August 2004

Sample of 15 Work Orders Documenting Non-Scheduled Maintenance Activities on Individual Sirens Between October 2003 and March 2005

1EP3 Emergency Response Organization (ERO) Augmentation Testing

DAEC Emergency Plan Section B; Emergency Response Organization; Revision 26
DAEC Emergency Plan Section H; Emergency Facilities, Staffing, Activation, and Equipment; Revision 23
DAEC Emergency Plan Section N; Exercises and Drills; Revision 21
EPIP 1.2; Notifications; Revision 31
NOTE-01; ERO Notification - DAEC Call-out System; Revision 6
NOTE-02; ERO Notification - Alphanumeric Paging System Call-out; Revision 4
Test Procedure NSEP 0007; Group Page Test; Revision 2
Instruction; Manual ERO Call-out Process; Revision 0
ERO Training and Qualifications Manual; Qualification Cards Index; Revision 1
EPDM 1009; ERO Training and Qualification Program; Revision 5
EPDM 1016; ERO Augmentation Drill and testing Program; Revision 5
EPDM 1018; ERO Duty Teams; Revision 0
Talking Points for Expansion of the 30- and 60-Minute, Non-Union Duty Team Response Positions; undated
Questions and Answers Talking Points; Transition to Having All 30- and 60-Minute Responders on Duty Teams; dated January 5, 2005
Emergency Telephone Book; Revision 84
Records of Off-Hours, Unannounced, ERO Actual Response Drill; dated December 16, 2003
Records of Off-Hours, Unannounced, ERO Call-in Drills Conducted in February, June, September, and December 2004
Records of Off-Hours, Unannounced, ERO Call-in Drill Conducted in March 2005
Random Sample of 30 ERO Members' ERO Training Records
CAP 033216; Inaccurate Duty ERO Staffing Board in Control Room Noted During a September 2004 Drill

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

DAEC Emergency Plan Section N; Exercises and Drills; Revision 21
EPDM 1002; Procedure Preparation, Review, Approval, and Control; Revision 6
EPDM 1008; Emergency Response Drill and Exercise Program; Revision 5
Records of Onsite Medical Response Drill on March 4, 2004
Records of Full-Scale Emergency Response Drill on June 23, 2004
Records of NRC-Evaluated Exercise in October 2004
Internal Correspondence; Fleet Comparison - Emergency Preparedness 10 CFR 50.54(t) Assessments 2003 and 2004; undated
NOS Observation Report 2004-001-1-003; Emergency Preparedness 50.54(t); dated March 17, 2004
NOS Observation Report 2005-001-1-024; Emergency Preparedness 50.54(t); dated April 15, 2005
CAP 030859; No Specific Owner Assigned to Ensure That All Medical Drill Objectives are Demonstrated Annually; dated February 27, 2004

CAP 030860; Procedural Inconsistency Between EPIP 4.2 and ACP 101.13 on Medical Emergency Response; dated February 27, 2004
CAP 032102; Evaluate Communications Expectations During a Medical Emergency; dated June 24, 2004
CE 001741; Communications During a Medical Emergency; dated June 24, 2004
CAP 032109; Two Unsuccessful DEP PI Opportunities During June 2004 Drill; dated June 25, 2004
Other Action 002229; Evaluation of Three Concerns on Off-site Re-assembly Area Usage During October 2004 Exercise; dated October 21, 2004
CAP 033476; Radio Communications Equipment Concern in Technical Support Center During October 2004 Exercise; dated October 21, 2004
Corrective Action 039039; Response to Radio Communications Equipment Concern in Technical Support Center During October 2004 Exercise; dated October 25, 2004
CAP 033470; Three Concerns on Emergency Operations Staff Performance During October 2004 Exercise; dated October 21, 2004
CAP 033471; Shift Manager Did Not Declare an Emergency as Expected During October 2004 Exercise; dated October 21, 2004
CAP 033499; Several Out of Date Air Sampler Cartridges Identified During October 2004 Exercise; dated October 22, 2004

1EP6 Drill Evaluation

2005 Duane Arnold Energy Center Emergency Response Drill and Exercise Program Full Scale Drill I Scenario; June 22, 2005
EOP 1; RPV Control; Revision 12
EOP 2; Primary Containment Control; Revision 12
EOP 3; Secondary Containment Control; Revision 16
EOP 4; Radioactivity Release Control; Revision 16
ATWS - RPV Control; Revision 13
EPIP 1.1; Determination of Emergency Action Levels; Revision 25
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 28
AOP 255.2; Power/Reactivity Abnormal Change; Revision 26
CAP 036880; Unable to Broadcast Dose Projections from EOF to TSC During Emergency Drill; dated June 23, 2005
CAP 036884; Problems With Connecting PI System to Simulator Computer During an ERO Drill; dated June 23, 2005
CAP 036885; ERDS Not Sending Simulated Data at the Beginning of the June 22, 2005 Emergency Preparedness Drill; dated June 23, 2005

2OS1 Access Control to Radiologically Significant Areas

CAP 034731; Access Control Observations; dated January 31, 2005
CAP 034911; Issues with the Control and Retention of Radwaste Vendor Processing Procedures; dated February 15, 2005
CAP 034957; Workers Entered a Radiologically Controlled Area Without Proper Dosimetry; dated February 18, 2005

CAP 035373; Floor Contamination Found Outside the CRD Repair Room; dated March 22, 2005
CAP 035392; Worker Entered High Radiation Area on the Incorrect Step of the High Radiation Area Radiation Work Permit; dated March 23, 2005
CAP 035564; Electronic Dosimeter Lost in Reactor Pressure Vessel Cavity; dated April 1, 2005
CAP 035584; Worker Bypassed Health Physics Drywell Control Briefing and Entered Bullpen Area; dated April 2, 2005
CAP 035617; Condensate Pump Work Area Issues Identified by Human Performance Improvement Team; dated April 3, 2005
CAP 053621; Issuance of Extremity Dosimetry Not Done in Accordance with HPP 3105.09; dated April 3, 2005
CAP 035726; Two Personnel Contaminations from the Removal of PV-19-53; dated April 7, 2005
HPP 3104.01; Control of Access to High Radiation Areas and Above; Revision 26
HPP 3111.09; Providing Radiological Briefings; Revision 2

2OS2 ALARA Planning and Controls

ACP 1411.7; Hose Control; Revision 13
CAP 034676; Revision Number Not Changed for RWP Job Step Change; dated January 27, 2005
HPP 3102.02; ALARA Job Planning; Revision 16
HPP 3102.03; Radiation Protection Job Planning; Revision 2
RWP 30009; Refuel Floor Support Activities; Revision 10
RWP 30014; Cavity Work; Revision 11
RWP 30016; Radiation Protection Work in Spent Fuel Poon, Cavity, Cask or Dryer/separator Pit When Flooded; Revision 13
RWP 40210; ISI/FAC and Support Work for Refueling Outage; Revision 8
RWP 50380; Weld Repairs and Inspection in Torus Proper; Revision 17

4OA1 Performance Indicator Verification

Nuclear Energy Institute 99-02; Regulatory Assessment Performance Indicator Guideline; Revision 2
ACP 1402.4;NRC Performance Indicators Collection and Reporting; Revision 3
Memorandum; DAEC 4th Quarter 2004 PI Summary; January 21, 2005
Memorandum; DAEC 3rd Quarter 2004 PI Summary; October 21, 2004
Memorandum; DAEC 1st Quarter 2004 PI Summary; April 21, 2004
Memorandum; DAEC 2nd Quarter 2004 PI Summary; July 20, 2004
EPDM 1010; Emergency Planning Department Performance Indicators; Revision 5
Records of Monthly ANS Test Results; July 2004 through March 2005
Records of DEP Indicator Opportunities; July 2004 through March 2005
Lists of Personnel Assigned to Each Key ERO Position; July 2004 through March 2005
CAP 032615; Inaccurate “Type of Release” Entry on Notification Form During an August 2004 Drill; dated August 12, 2004
CAP 033251; Failure to Make an Emergency Declaration as Expected During an October 2004 Licensed Operator Training Session; dated October 4, 2004

CAP 033471; Failure to Declare an Emergency as Expected During an October 2004 Integrated Response Facility Drill; dated October 21, 2004

4OA2 Identification and Resolution of Problems

ACP 114.4; Corrective Action Program; Revision 19
ACP 114.5; Action Request System; Revision 46
ACP 114.8; Action Request Trending; Revision 5
CAP 034350; Improper Significance Level Assignment for Some Level 'C' CAPs; dated December 22, 2004
CE 002199; Improper Significance Level Assignment for Some Level 'C' CAPs; dated December 28, 2004
NG-05-0313; First Quarter 2005 Nuclear Oversight Assessment Report; dated May 31, 2005

4OA5 Other Activities

STP 3.0.0-03; Refueling Instrument Checks; Revision 11
OI 581; Horizontal Storage Module (HSM)Temperature Monitoring; Revision 1
CAP 036162; HSM Temperature Trending; April 26, 2005 (NRC Identified)
ATC Operating Procedure; Preparation for High Grid Loading and Potential Instability; Revision 1
WPG - 2; On-Line Risk Management Guideline; Revision 19
Procedure Change Request (PCR) 40286; Loss of Grid; May 24, 2005
AOP 301.1; Station Blackout; Revision 24
AOP 304; Grid Instability; Revision 9
CAP 035212; DAEC ISI Program May Not Meet Period Percentages for Category B-K; dated March 10, 2005

4OA7 Licensee-Identified Violations

CAP 035212; DAEC ISI Program May Not Meet Period Percentages for Category B-K; dated March 10, 2005

LIST OF ACRONYMS USED

ACP	Administrative Control Procedure
ADAMS	Agencywide Documents Access and Management System
AFP	Area Fire Plan
ALARA	As-Low-As-Is-Reasonably-Achievable
ANS	Alert and Notification System
AOP	Abnormal Operating Procedures
ASME	American Society of Mechanical Engineers
ATWS	Anticipated Transient Without Scram
CAP	Correction Action Process
CARB	Corrective Actions Review Board
CE	Condition Evaluation
CFR	Code of Federal Regulations
CR	Control Relay
CRD	Control Rod Drive
CWO	Corrective Work Order
DAEC	Duane Arnold Energy Center
DHR	Decay Heat Removal
EOP	Emergency Operating Procedure
EP	Emergency Planning
EPDM	Emergency Planning Department Manual
EPIP	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
HEPA	High Efficiency Particulate Air
HPCI	High Pressure Core Injection
HRA	High Radiation Area
HVAC	Heating, Ventilation, and Air-Conditioning
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPOI	Integrated Plant Operating Instruction
kV	kilo-Volt
LOOP	Loss of Offsite Power
LSFT	Logic System Functional Test
MO	Motor Operated
MWe	Megawatt Electric
MWth	Megawatt Thermal
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NOS	Nuclear Oversight
NRC	Nuclear Regulatory Commission
OOS	Out-of-service
OPR	Operability Recommendation
OSP	Offsite Power
OWA	Operator Workaround
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post-Maintenance Testing

PWO	Preventative Work Order
RBCCW	Reactor Building Closed Cooling Water
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RWP	Radiation Work Permit
RWS	River Water Supply
SBDG	Standby Diesel Generator
SBO	Station Blackout
SDP	Significance Determination Process
SpTP	Special Test Procedure
SSC	Structures, Systems, and Component
STP	Surveillance Test Procedure
TI	Temporary Instruction
TM	Temporary Modification
TS	Technical Specification
TSO	Transmission System Operator
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
UT	Ultrasonic
Vdc	Volts Direct Current