January 25, 2006

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 05000331/2005005

Dear Mr. Van Middlesworth:

On December 31, 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 January 13, 2006, 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 two NRC-identified findings of very low safety significance, of which both 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 and issues as Non-Cited Violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy. Additionally, a licensee identified violation is listed in Section 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, D.C. 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, D.C. 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 No. 50-331
License No. DPR-49

Enclosure: Inspection Report 5000331/2005005
w/Attachment: Supplemental Information

cc w/encl: E. Protsch, Executive Vice President -
Energy Delivery, Alliant;
President, IES Utilities, Inc.
C. Anderson, Senior Vice President, Group Operations
J. Cowan, Executive Vice President and Chief Nuclear Officer
J. Bjorseth, Site Director
D. Curtland, Plant Manager
S. Catron, Manager, Regulatory Affairs
J. Rogoff, Vice President, Counsel, & Secretary
B. Lacy, Nuclear Asset Manager
Chairman, Linn County Board of Supervisors
Chairperson, Iowa Utilities Board
The Honorable Charles W. Larson, Jr.
Iowa State Senator
D. Flater, Chief, Iowa Department of Public Health
D. McGhee, Iowa Department of Public Health

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The Honorable Charles W. Larson, Jr.
Iowa State Senator
D. Flater, Chief, Iowa Department of Public Health
D. McGhee, Iowa Department of Public Health

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-331
License No:	DPR-49
Report No:	05000331/2005005
Licensee:	Nuclear Management Company, LLC
Facility:	Duane Arnold Energy Center
Location:	Palo, Iowa
Dates:	October 1 through December 31, 2005
Inspectors:	G. Wilson, Senior Resident Inspector R. Baker, Resident Inspector M. Kurth, Resident Inspector Quad Cities C. Acosta Acevedo, Reactor Inspector B. Palagi, Senior Operations Engineer
Observers:	None
Approved by:	Bruce L. Burgess, Chief Branch 2 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000331/2005005; 10/01/2005 - 12/31/2005; Duane Arnold Energy Center, Fire Protection, and Identification and Resolution of Problems.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections of heat sink performance and licensed operator requalification. The inspections were conducted by Region III reactor inspectors and the resident inspectors. Two Green findings with associated non-cited violations (NCV) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

- Green. A finding of very low safety significance was identified by the inspectors for the failure to control and evaluate transient combustibles in the southeast corner room of the reactor building. The transient combustibles consisted of wood planking located on scaffolding within the room. The primary cause of this finding was related to the cross-cutting area of Human Performance for the failure to follow approved procedures. The licensee entered this issue into their corrective action program and processed the associated combustible permits.

  This finding was more than minor because it matched example 4.a. in Appendix E, "Examples of Minor Issues and Cross-Cutting Aspects," of Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports." This was due to the fact that the licensee routinely failed to perform evaluations on similar issues. The finding was of very low safety significance because of the low fire degradation rating associated with wood. The issue was an NCV of License Condition 2.C.(3) that requires the licensee to implement and maintain in effect all provisions of the approved fire protection program. (Section 1R05)

- Green. A finding of very low safety significance was identified by the inspectors for failure to correct deficiencies with the control of transient combustibles. The transient combustibles consisted of wood planking located on scaffolding. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution due to inadequate corrective actions for repeated deficiencies associated with the control of transient combustibles. The licensee entered this issue into their corrective action program, processed the associated combustible permits, and performed an apparent cause evaluation.

  This finding was more than minor because it matched example 3.g. in Appendix E, "Examples of Minor Issues and Cross-Cutting Aspects," of IMC 0612, "Power Reactor Inspection Reports." This was due to the fact that the licensee failed to take actions to

correct nonconforming conditions. The finding was of very low safety significance because of the low fire degradation rating associated with wood. The issue was an NCV of License Condition 2.C.(3), that requires the licensee to implement and maintain in effect all provisions of the approved fire protection program. (Section 4OA2.1.b.)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Duane Arnold Energy Center (DAEC) operated at full power for the entire assessment period except for brief down-power maneuvers to accomplish rod pattern adjustments and to conduct planned surveillance testing activities with the following exception:

- On October 4, 2005, the reactor was reduced in power to approximately 65% for the installation of temporary temperature monitoring of the High Pressure Core Injection (HPCI) injection line. The plant returned to full power on October 5, 2005.

1. REACTOR SAFETY

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

1R01 Adverse Weather (71111.01)

.1 Winter Preparations

a. Inspection Scope

The inspectors performed a detailed review of the licensee's procedures and a walkdown of three systems to observe the licensee's preparations for cold weather 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 winter season, and a review of the analysis and requirements identified in the Updated Final Safety Analysis Report (UFSAR).

The inspectors evaluated cold weather readiness of the following three systems for a total of one sample:

- Intake Structure heating, ventilation and air-conditioning (HVAC) during the week ending October 22, 2005;
- Pumphouse HVAC during the week ending October 29, 2005; and
- Cathodic Freeze Protection during the week ending November 12, 2005.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

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

- Reactor Core Isolation Cooling (RCIC) system with the HPCI system declared inoperable during the week ending October 8, 2005;
- 'B' train of the River Water Supply (RWS) system with the 'A' train of RWS out of service (OOS) for maintenance during the week ending October 22, 2005; and
- 'A' and 'B' Standby Diesel Generators (SBDGs) with the T1 345 kV transformer OOS for inspection/maintenance during the week ending November 5, 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 six 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 (IPEEE), 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 six samples:

During the week ending October 22, 2005:

- Area Fire Plan (AFP) 31, Intake Structure Pump Area; and
- AFP 32, Intake Structure Traveling Screen Area.

During the week ending November 5, 2005:

- AFP 23, Battery Rooms 1D-2, 1D-4, 1D-1, Battery Corridor;
- AFP 24, Essential Switchgear Rooms 1A-4, 1A-3; and
- AFP 28, Emergency Service Water (ESW)/Residual Heat Removal Service Water (RHRSW) Pump Rooms, and Main Pump Room.

During the week ending November 19, 2005:

- AFP 2, South Corner Rooms.

b. Findings

Introduction: A finding of very low safety significance (Green) and an associated NCV of License Condition 2.C.(3) were identified by the inspectors for the failure to control and evaluate transient combustibles in the southeast corner room of the reactor building.

Description: On October 25, 2005, the inspectors conducted a walkdown of the reactor building and identified wood planking on scaffolding in the southeast corner room without a Combustible Material/Flammable Liquid Control permit. The inspectors noted that the scaffolding and associated wood planking were readily observable and represented a significant quantity of transient combustibles. The weight of the wood planking on the scaffolding was estimated to be 250 pounds. Discussions with the Fire Engineer confirmed that the combustibles were not listed in the Fire Marshal's database of permits.

The wood planking was located beside the safety-related residual heat removal and core spray pumps. Therefore, a fire involving the wood scaffolding materials could affect the safety-related pumps.

Administrative Control Procedure (ACP) 1412.2, "Control of Combustibles," specified that class "A" materials exceeding 100 pounds may be brought into power block buildings by permit only and defined wood as a class "A" material. The procedure also noted that the use of wood in the power block buildings shall be minimized.

The Fire Engineer then initiated CAP 38552 to address the transient combustible issues.

Analysis: The inspectors determined that failing to identify transient combustibles in the southeast corner room of the reactor building without an appropriate Combustible Material/Flammable Liquid Control permit was an example of not complying with a standard. As it could have reasonably been foreseen or corrected by the licensee, it was, therefore, a performance deficiency. Since a performance deficiency existed, the inspectors reviewed this issue against the guidance contained in Appendix B, "Issue Screening," of Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports." In particular, the inspectors compared this finding to the findings identified in Appendix E, "Examples of Minor Issues and Cross-Cutting Aspects," of IMC 0612 to determine whether the finding was minor. Following that review, the inspectors concluded that the guidance in Appendix E example 4.a. was applicable for the specific finding. The finding was greater than minor because the licensee routinely failed to perform evaluations on similar issues. In addition, the finding affected the cross-cutting area of Human Performance because of the failure to follow the associated procedures for transient combustibles.

As a result, the inspectors reviewed this issue in accordance with IMC 0609, Appendix F, "Fire Protection SDP," Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements." The inspectors determined that the unapproved presence of wood planking on scaffolding was a low degradation finding against the combustible controls program because wood will not cause a fire from existing sources of heat or electrical energy. After identifying that the issue had a low degradation rating, the inspectors used IMC 0609, Appendix F, Attachment 1, "Application of Fire Protection SDP Phase 1 Worksheet," Task 1.3.1, "Qualitative Screening for All Finding Categories," for determining the severity level. Since the finding had a low degradation rating, it was of very low safety significance and screened as Green.

Enforcement: License Condition 2.C.(3) required the Nuclear Management Company (NMC) to implement and maintain in effect all provisions of the approved fire protection program as described in the DAEC Final Safety Analysis Report (FSAR), which describes the fire protection program as contained in the Fire Plan and was incorporated into the UFSAR by reference. Section 6.1 of the Fire Plan referenced ACP 1412.2, assigning inspection responsibility to the Fire Marshal, to assure transient combustibles were located, used, and documented. ACP 1412.2 also defined wood as a class "A" material, and required a Combustible Material/Flammable Liquid Control permit for bringing more than 100 pounds of such material into the power block. Contrary to the above, on October 25, 2005, the NRC identified wood planking weighing approximately 250 pounds on scaffolding that had been in place in the southeast corner room of the reactor building for 63 days without the required permit. Once identified, the licensee initiated CAP 38552. Because this violation was of very low safety significance and entered into the licensee's corrective action program, this violation is being treated as an NCV, per Section VI.A of the NRC Enforcement Policy. (NCV 05000331/2005005-01)

Corrective actions taken included an extent of condition review, which identified two additional scaffolds with wood planking that did not have the required combustible permit. Appropriate combustible permits were placed on all three scaffolds. In addition, an apparent cause evaluation was performed.

1R07 Heat Sink Performance (71111.07B)

.1 Biennial Review of Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the performance of the HPCI room cooler and the RCIC room cooler (a total of two heat exchangers). These heat exchangers were chosen for review based on their high risk assessment worth in the licensee's probabilistic safety analysis. This review resulted in the completion of two inspection samples. While on-site, the inspectors verified that the inspection and maintenance of these heat exchangers were adequate to ensure proper heat transfer. This was done by conducting independent heat transfer capability calculations, reviewing the methods used to inspect the heat exchangers, and verifying that the as-found results were appropriately dispositioned, such that the final condition was acceptable. The inspectors also verified by review of procedures and test results that chemical treatments, ultrasonic tests, and methods used to control biotic fouling corrosion and macrofouling were sufficient to ensure required heat exchanger performance.

The inspectors verified that the condition and operation were consistent with design assumptions in heat transfer calculations by conducting a service water system walkdown and reviewing related procedures and surveillance. The inspectors also verified that redundant and infrequently used heat exchangers were flow tested periodically at maximum design flow. This was performed by reviewing related flow tests.

The inspectors verified the performance of the ultimate heat sink and its sub-components, such as piping, intake screens, intake bays, pumps, valves, etc. by reviewing procedures, surveillance, and inspections conducted on the system.

The inspectors verified that the licensee had entered significant heat exchanger/heat sink problems into their corrective action program and that the actions taken were appropriate.

The documents that were reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Annual Operating Test Results

a. Inspection Scope

The inspector reviewed the overall pass/fail results of the annual operating examination which consisted of Job Performance Measure (JPM) and simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee. The

operating testing was conducted in November and December 2005. The results were compared with the SDP in accordance with NRC Manual Chapter 0609I, "Operator Requalification Human Performance SDP." This represents one sample.

b. Findings

No findings of significance were identified.

.2 Quarterly Operating Crew Evaluation

a. Inspection Scope

During the week ending October 22, 2005, the inspectors observed a training crew performance on Simulator Exercise Guide (SEG) 2005E-01 for a total of one sample. The scenario included a reactivity transient due to a loss of feedwater heating, followed by a reactor coolant leak inside the primary containment, and a subsequent reactor scram. 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 crews performance was compared to licensee management expectations and guidelines as presented in the following documents:

- ACP 101.01, "Procedure Use and Adherence," Revision 33;
- ACP 101.2, "Verification Process and SELF/PEER Checking Practices," Revision 5; and
- ACP 110.1, "Conduct of Operations," Revision 3.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed two systems to assess maintenance effectiveness. The documents listed in the Attachment were used by the inspectors to accomplish the objectives of the inspection procedure. Maintenance activities were reviewed to assess maintenance effectiveness, including maintenance rule activities, work practices, and common cause issues. Inspection activities included, but were not limited to, the

licensee's categorization of specific issues including evaluation of maintenance performance criteria, appropriate work practices, identification of common cause errors, extent of condition, and trending of key parameters. Additionally, the inspectors reviewed implementation of the maintenance rule (10 CFR 50.65) requirements, including a review of scoping, goal-setting, performance monitoring, short-term and long-term corrective actions, functional failure determinations associated with reviewed condition reports, and current equipment performance status.

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

- An issue/problem-oriented review of the Control Building/Reactor Building Radiation Monitors was performed, because it was designated as risk-significant under the maintenance rule, during the week ending November 5, 2005; and
- A function-oriented review of the Offsite Power System was performed because it was designated as risk-significant under the maintenance rule, during the week ending November 5, 2005.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

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

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

- The inspectors reviewed the maintenance risk assessment for work planned during the weeks of October 8, 22, and 29, 2005.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed one 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. An operability evaluation, which affected the mitigating systems cornerstone was reviewed to ensure adequate justification for declaration of operability and that the component or system remained available. Inspection activities included, but were not limited to, a review of the technical adequacy of the evaluation against the Technical Specifications (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 one sample:

- Condition Evaluation (CE) 003049, HPCI Venting Operability, during the week ending October 22, 2005.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (OWA) (71111.16)

.1 Semi-Annual Workaround Review

a. Inspection Scope

During the week ending November 12, 2005, the inspectors performed a semi-annual 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.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed four post-maintenance testing (PMT) activities. The documents listed in the Attachment were used to accomplish the objectives of the inspection procedure. PMT procedures and activities were verified to be adequate to ensure system operability and functional capability. Inspection activities were selected based upon the SSC's ability to impact risk. Inspection activities included, but were not limited to, witnessing or reviewing the integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use and compliance, control of temporary modifications or jumpers required for test performance, documentation of test data, system restoration, and evaluation of test data. Also, the inspectors verified that maintenance and PMT activities adequately ensured that the equipment meets the licensing basis, TS, and UFSAR design requirements.

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

- Modification Work Order (MWO) 1133138, Startup Transformer Feeder to 1A4, during the week ending October 29, 2005;
- MWO 1133137, Standby Transformer Feeder to 1A4, during the week ending October 29, 2005;
- Preventative Work Order (PWO) 1132174, 'A' Standby Diesel Generator, during the week ending November 19, 2005; and
- MWO 1133139, Feeder Breaker from 1G-21/Generator to 1A4, during the week ending November 26, 2005.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed four 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 an 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 four samples:

- Surveillance Test Procedure (STP) 3.5.1-05, HPCI Operability Test, during the week ending October 15, 2005;
- STP 3.8.1-06, 'B' SBDG Fast Start, during the week ending October 22, 2005;
- STP 3.3.1.1-24, Local Power Range Monitor Calibration, during the week ending November 5, 2005; and
- STP 3.5.3-02 RCIC Operability Test, during the week ending November 12, 2005.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

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

Introduction: A finding of very low safety significance (Green) and an associated NCV of License Condition 2.C.(3) were identified by the inspectors for failing to promptly identify and correct issues with the control of transient combustibles.

Description: The inspectors determined that the licensee had, during several opportunities, failed to take timely and effective corrective actions with respect to the control of transient combustibles. The first issue associated with the failure to properly control transient combustibles, occurred on May 27, 2005, when the inspectors identified that the licensee had failed to place a combustible material permit on a scaffold that had wood planking in the reactor building. This issue resulted in NCV 05000331/2005009-01 being issued for the failure to control and identify transient

combustibles. The corrective actions to the issue as documented in CAP 36606 identified this as an isolated case, therefore, no further corrective actions were taken.

An additional failure to control transient combustibles, occurred on September 27, 2005, when the licensee identified that a scaffolding with wood planking in the "A" ESW pump room did not have a combustible material permit. The corrective actions to the issue as documented in CAP 38085 identified this as an isolated case.

Following the second occurrence, a CE was performed. The CE also came to the conclusion that this was an isolated case. Therefore, no further corrective actions were taken.

On October 25, 2005, the inspectors identified another issue associated with the failure to properly control transient combustibles in the southeast corner room of the reactor building. The inspectors then contacted the Fire Protection Program Engineer on the issue. This resulted in an extent of condition review being performed where two additional examples of the failure to properly control transient combustibles in the reactor building were identified. This resulted in an apparent cause evaluation being performed.

Of particular note, Section 4.10 of the Fire Plan stated that the Fire Marshal was responsible for conducting periodic inspections to minimize combustibles within the owner-controlled area. In addition, procedure ACP 1412.2, "Control of Combustibles," stated that the Fire Marshal was responsible for performing periodic inspections to assure transient combustibles were located, used, and documented with a Combustible Material/Flammable Liquid Control permit. The identified failures to properly control combustible materials that had been in the plant for a time period of 63 days to more than one year, raised an issue regarding how effective periodic inspections were in identifying transient combustibles and why this was not identified during corrective action reviews.

Analysis: The inspectors determined that failing to correct deficiencies associated with control of transient combustibles was an example of not complying with a standard that could have reasonably been foreseen or corrected by the licensee, and was, therefore, a performance deficiency. Since a performance deficiency existed, the inspectors reviewed this issue against the guidance contained in Appendix B, "Issue 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 and Cross-Cutting Aspects," of IMC 0612 to determine whether the finding was minor. Following that review, the inspectors concluded that the guidance in Appendix E example 3.g. was applicable for the specific finding. The finding was greater than minor because the licensee failed to take actions to correct repetitive nonconforming conditions. In addition, the finding affected the cross-cutting area of Problem Identification and Resolution due to inadequate corrective actions for the deficiencies associated with the control of transient combustibles.

As a result, the inspectors reviewed this issue in accordance with IMC 0609, Appendix F, "Fire Protection SDP," Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements." The inspectors determined that

the unapproved presence of wood planking on scaffolding was a low degradation finding against the combustible controls program because wood will not cause a fire from existing sources of heat or electrical energy. After identifying that the issue had a low degradation rating, the inspectors used IMC 0609, Appendix F, Attachment 1, "Application of Fire Protection SDP Phase 1 Worksheet," Task 1.3.1, "Qualitative Screening for All Finding Categories" for determining the severity level. Since the finding had a low degradation rating, it was of very low safety significance and screened as Green.

Enforcement: License Condition 2.C.(3) required NMC to implement and maintain in effect all provisions of the approved fire protection program as described in the DAEC FSAR, which describes the fire protection program as contained in the Fire Plan and was incorporated into the UFSAR by reference. Appendix A, Section C.8., "Corrective Action," of Branch Technical Position 9.5-1, states that measures to assure conditions adverse to fire protection, such as uncontrolled combustible material and nonconformances, are promptly identified and corrected. The licensee committed to this without any noted exception. Section 4.10 of the Fire Plan gave the Fire Marshal the responsibility for conducting periodic inspections to minimize combustibles within the owner-controlled area and for evaluating conditions likely to reduce the effectiveness of the Fire Program or any of its part and initiating corrective action. Section 6.1 of the Fire Plan referenced ACP 1412.2, assigning inspection responsibility to the Fire Marshal, to assure transient combustibles were located, used, and documented in accordance with ACP 1412.2. ACP 1412.2 also defined wood as a class "A" material, and required a Combustible Material/Flammable Liquid Control permit for bringing more than 100 pounds of such material into the power block. Contrary to the above, from a period of May 27, 2005 through October 25, 2005, the licensee failed to properly control transient material. In addition, the routine walkdowns performed by the Fire Marshal also failed to identify these discrepancies. Once identified, the licensee initiated CAP 38552. Because this violation was of very low safety significance and entered into the licensee's corrective action program, this violation is being treated as an NCV, per Section VI.A of the NRC Enforcement Policy. (NCV 05000331/2005005-02)

Corrective actions taken included an extent of condition review, which identified two additional scaffolds with wood planks that did not have the required combustible permit. Appropriate combustible permits were placed on all three scaffolds. In addition, an apparent cause evaluation was performed.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. 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

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

.3 Semi-Annual Trend Review

a. Inspection Scope

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 6-month period of June 2005 through December 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 were 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 Program 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.

.4 Status of Human Performance Cross-Cutting Issue Corrective Actions

a. Introduction

During the mid-cycle assessment for the 2005 calendar year inspection program, the NRC staff identified a substantive cross-cutting issue in the area of human performance. The results of this assessment were provided to the licensee in August 2005, in the Duane Arnold Energy Center Mid-Cycle Performance Review letter.

Specifically, the findings and associated violations were attributed to inadequate human performance associated with procedural requirements.

The licensee has continued to revise and enhance their human performance improvement plan to address these issues.

This review counts as one annual sample.

b. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed the licensee's comprehensive human performance improvement plan and related documents in detail, with the intent of determining whether or not the corrective actions addressed generic implications, and to verify that they were appropriately focused to correct the human performance problems. The specific focus for the inspectors' review was the time period from July 1, 2005, through December 2, 2005.

(2) Issues

For the focus period noted above, the inspectors identified two findings and associated violations of very low safety significance (Green) where human performance was not adequate. In both of these instances procedural requirements were not followed.

In addition to the items above that met the threshold for being documented in an inspection report, another 13 minor issues were identified with human performance as the primary or contributing cause for the focus period. Once again, these issues were associated with procedural requirements. These minor issues resulted in department clock resets for operations, maintenance, security, engineering, training, radiation protection, and chemistry. In addition, there were five site clock resets for human performance during this time frame.

The inspectors also analyzed the data to identify whether or not the trend in human performance issues was declining, improving, or steady. Based on the analyzed data for the associated time period, the inspectors determined that the effectiveness of the licensee's corrective actions for the human performance substantive cross-cutting issue was indeterminate, as evidenced by the continued occurrence of human performance events and issues at the station. The inspectors will continue to evaluate the licensee's efforts to improve human performance by reviewing the cumulative effect of their corrective actions.

4OA5 Other Activities

(Closed) Unresolved Issue (URI) 05000331/2004-004: Failure to Demonstrate the Capability to Achieve and Maintain Safe Shutdown Conditions Due to Bus Lockout.

On June 2, 2005, a review of an event reported at Monticello resulted in the determination that Duane Arnold Energy Center was vulnerable to a similar issue in that, the Remote Shutdown Panel did not meet design criteria for Appendix R, because the metering circuits in the control room could cause a lock out of an essential bus. Control room 4160 VAC current sensing and protective relaying circuits for the standby transformer, the startup transformer, and the 1G21 diesel generator, as well as the kilowatt meter for the 1G21 diesel generator has the potential to initiate a 1A4 essential power bus lockout if a "hot short" were to occur in this control room circuitry. In a

potential fire event, it is plausible that an outside voltage source in contact with one or more current transformer phase legs, could force current through the over-current trip relay causing them to trip, thereby resulting in lockout signals at essential bus 1A4 or the 1G21 diesel generator. The inspectors determined that the licensee failed to identify the single failure vulnerability associated with the ammeter circuits when the remote shutdown panel was designed and installed from 1983 to 1985. The licensee entered this issue into their corrective action program as CAP 35060. On June 17, 2005, a temporary modification was implemented that disconnected control room ammeter cables in the 1A4 essential switchgear room removing the possibility of a "hot short" lockout. The inspectors reviewed the licensee's corrective actions and risk assessment. Upon a further review, no issues were identified with the effectiveness of the corrective actions associated with this operating experience review. The licensee's risk assessment calculated a change in core damage frequency due to this issue of 5.6E-7/yr. The RIII Senior Reactor Analyst (SRA) reviewed this calculation and determined that the analysis and results were reasonable, so this finding was determined to be characterized as having very low safety significance (Green). Therefore, URI 05000331/2005004-04 is closed to the licensee identified violation as described in Section 4OA7.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. G. Van Middlesworth and other members of licensee management on January 13, 2006. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exit meetings were conducted for:

- The Biennial Heat Sink Inspection, with Mr. G. Van Middlesworth, Site Vice President, on October 7, 2005.

- Operator Requalification Program Examination Result Review with Mr. M. Fisher via telephone on December 29, 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: Mitigating Systems

.1 This finding relates to URI 05000331/2005004-04, as discussed in Section 4OA5 of this report. 10 CFR 50, Appendix B, Criterion III, "Design Control," states, in part, that

design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design. Contrary to this requirement, the licensee failed to identify the single failure vulnerability associated with the ammeter circuits when the remote shutdown panel was designed and installed from 1983 to 1985.

The finding was identified by the licensee through its external event review process. The licensee performed a risk evaluation of this finding which was reviewed by the RIII SRA as a Phase III SDP evaluation. A Phase II inspection of the IMC 0609, Appendix F, "Fire Protection Significance Determination Process," was not applicable because this issue applied only to fire scenarios which required the use of the alternate shutdown system, (i.e., control room evacuation scenarios). The alternate shutdown system relied on power supplied from the Division II electrical switchgear room. A hot short in the metering circuit for this division would result in a lockout of the power supply and it would be unable to supply power for an alternate shutdown. The licensee determined that a fire in one of three separate panels in the control room could result in the hot short occurring and could result in control room evacuation if the fire was not suppressed. Based on this information and using a non-suppression probability of 1E-2 to represent the failure to suppress the fire in 15 minutes, the licensee calculated a change in core damage frequency due to this issue of 5.6E-7/yr. The SRA reviewed this calculation and determined that the analysis and results were reasonable. Therefore, this finding was determined to be best characterized as having very low safety significance (Green). Since the licensee identified the problem and took corrective actions, this violation is being treated as an NCV. The licensee entered this issue into their corrective action program as CAP 35060.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

G. Van Middlesworth, Site Vice President
J. Bjorseth, Site Director
D. Curtland, Plant Manager
S. Catron, Nuclear Safety Assurance Manager
S. Haller, Site Engineering Director
B. Kindred, Security Manager
C. Kress, Training Manager
G. Rushworth, Operations Manager
G. Pry, Maintenance Manager
J. Windschill, Chemistry and Radiation Protection Manager

NRC personnel

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

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000331/2005005-01	NCV	Failure to Identify and Control Transient Combustibles in the Southeast Corner Room of the Reactor Building (1R05)
05000331/2005005-02	NCV	Inadequate Corrective Actions for the Control of Transient Combustibles (4OA2)

Closed

05000331/2005005-01	NCV	Failure to Identify and Control Transient Combustibles in the Southeast Corner Room of the Reactor Building (1R05)
05000331/2005005-02	NCV	Inadequate Corrective Actions for the Control of Transient Combustibles (4OA2)
05000331/2005004-04	URI	Failure to Demonstrate the Capability to Achieve and Maintain Safe Shutdown Conditions Due to Bus Lockout (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.

Section 1R01: Adverse Weather

Integrated Plant Operating Instruction (IPOI) 6, Cold Weather Operations, Revision 32
Operating Instruction (OI) 711A2, Pumphouse HVAC Valve Lineup, Revision 1
OI 711A1, Pumphouse HVAC Electrical Lineup, Revision 1
OI 711A3, Pumphouse HVAC Control Panel Lineup, Revision 1
OI 710A2, Intake Structure HVAC System Valve Lineup, Revision 1
OI 710A1, Intake Structure HVAC System Electrical Lineup, Revision 2
Task 019, Inspect and functionally check and calibrate the Pumphouse ventilation dampers and pressure/temperature controllers, Revision 3
Task 48, Inspect Unit Heaters, Revision 0
Task 84, IPOI 6 Unit Heater Inspection, Revision 0
Task 85, IPOI 6 Heat Tracing Inspection, Revision 0
PWO 1132014, Intake Structure North Fan Damper DO7711A, October 20, 2005
PWO 1132012, Intake Structure North Fan Damper DO7710A, October 20, 2005
PWO 1132010, Intake Structure North Fan Damper DO7709A, October 20, 2005
OI 985, Plant Cathodic and Freeze Protection System, Revision 13
OI 985A1, Cathodic Protection Electrical Lineup, Revision 0
OI 985A2, Freeze Protection Electrical Lineup, Revision 4
OI 537, Condensate/Demin Services Water, Revision 32
PWO 1132507, Cathodic and Freeze Protection System Inspection, November 4, 2005

Section 1R04: Equipment Alignment

OI 150A1, RCIC System Electrical Lineup, Revision 0
OI 150A2, RCIC System Valve Lineup and Checklist, Revision 8
OI 150A4, RCIC Control Panel Lineup, Revision 1
OI 410A1, RWS System Electrical Lineup, Revision 8
OI 410A4, "B" RWS System Valve Lineup and Checklist, Revision 7
OI 324A2, SBDG 1G-21 System Electrical Lineup, Revision 1
OI 324A4, SBDG 1G-21 System Valve Lineup and Checklist, Revision 2
OI 324A8, SBDG 1G-21 System Control Panel Lineup, Revision 0
OI 324A1, SBDG 1G-31 System Electrical Lineup, Revision 1
OI 324A3, SBDG 1G-31 System Valve Lineup and Checklist, Revision 2
OI 324A7, SBDG 1G-31 System Control Panel Lineup, Revision 1

Section 1R05: Fire Protection

ACP 1412.2, Control of Combustibles, Revision 24
AFP 31, Intake Structure Pump Area, Revision 25
AFP 32, Intake Structure Traveling Screen Area, Revision 27
AFP 23, Control Building 1D-2, 1D-4, 1D-1 Battery Rooms and Battery Corridor, Revision 24
AFP 24, Control Building 1A-4, 1A-3 Essential Switchgear Rooms, Revision 28
AFP 28, Pump House ESW/RHRSW Pump Rooms and Main Pump Room, Revision 29
AFP 2, Reactor Building South Corner Rooms, Revision 23
CAP 38552, Scaffold in SE Corner Room without Combustible Materials Tag, October 25, 2005 (NRC Identified)

Section 1R07: Heat Sink Performance (71111.07)

466M003, RCIC Room Cooling Units and HPCI Room Cooling Units, Revision 0
CAL-M05-003, RCIC Emergency Room Cooler Heat Transfer Calculation, Revision 8
CAL-M05-004, HPCI Emergency Room Cooler Heat Transfer Calculation, Revision 8
CAP 27143, Tube leak on 1VAC015A (RCIC room cooling unit), dated April 22, 2003
CAP 30567, Inadequate documentation of HPCI and RCIC room cooler design basis, dated January 30, 2004
CAP 33858, RCIC room cooler 1VAC015A has a 2-3 dpm leak from a tube, dated November 16, 2004
CAP 33872, Non code repair performed on 1VAC015A without prior NRC approval, dated November 16, 2004
FSAR040654, Revise UFSAR table 9.2-1 required ESW flow rates, dated August 7, 2005
OTH037448, Prepare new HPCI and RCIC room heat up calculations dated March 16, 2004
System Description, ESW SD-454, Revision 3
72B123-R1, 1VAC14A HPCI Room Cooler, dated January 13, 1972
72B124-R1, 1VAC14B HPCI Room Cooler, dated January 13, 1972
72B125-R1, 1VAC15A RCIC Room Cooler; dated January 14, 1972
72B126-R1, 1VAC15B RCIC Room Cooler; dated January 14, 1972
Material List for CIG 2.92, Unit 1VAC15A and 1VAC15B, Revision 4
Material List for F2G 8.03, Unit 1VAC14A and 1VAC14B, Revision 4
PCR041074, Revise ACP 1208.4 with new minimum flow rate, dated October 5, 2005 (NRC Identified)
ACP 1208.4, GL 89-13 Heat Exchanger Performance and Trending, Revision 7
ACP 1208.5, Service Water Reliability Program, Revision 2
Abnormal Operating Procedure (AOP) 410 Loss of RWS, Revision 17
Annunciator Response Procedure (ARP) 1C23A, HVAC Reactor Building and Main Plant Air - Panel 1C23A, Revision 2
ARP 1C23B, Main Plant HVAC, Revision 5
Corrosion Monitoring Program Manual, DAEC, Revision 6
FP-PE-SW-01, Service Water and Fire Protection Inspection Program, Revision 1
GMP-MECH-26, Heat Exchangers, Revision 7
OI 410, RWS System, Revision 48
STP NS54002, ESW Operability Test, Revision 16
EMP-1P099-FV, Emergency Service Water Flow Verification Test, dated February 15, 2002
FAC Component Evaluation Report for HBD-24, Outage RFO-15

FAC Component Evaluation Report for HBD-24, Outage RFO-16
STP NS100102, RWS and Screen Wash System Vibration Measurement and Operability Test "A", dated August 7, 2005
STP NS100102, RWS and Screen Wash System Vibration Measurement and Operability Test "B", dated August 14, 2005
STP NS54002, ESW Operability Test "B", dated September 3, 2004
STP NS54002, ESW Operability Test "A", dated September 9, 2004
WO1117721, RCIC Room Cooling Unit, dated October 2, 2001
WO1119642, HPCI Room Cooling Unit, dated May 14, 2002
WO1121564, RCIC Room Cooling Unit, dated October 23, 2002
WO1123712, HPCI Room Cooling Unit, dated April 29, 2003
WO1125110, RCIC Room Cooling Unit, dated October 7, 2003
WO1126683, HPCI Room Cooling Unit, dated March 25, 2004
WO1127819, RCIC Room Cooling Unit, dated September 10, 2004
WO1131213, HPCI Room Cooling Unit, dated August 22, 2005
WO1133615, Inspect and Clean as Needed, "B" Intake Structure Pit, dated September 27, 2005

Section 1R11: Licensed Operator Requalification Program

SEG 2005E-01, Steam Leak Inside Primary Containment/High Drywell Pressure, Revision 0
Emergency Operating Procedure (EOP) 2, Primary Containment Control, Revision 12
EOP 1, Reactor Pressure Control, Revision 13
Emergency Action Level (EAL) Table 1, Revision 6
ACP 110.1, Conduct of Operations, Revision 3
ACP 101.01, Procedure Use and Adherence, Revision 33
ACP 101.2, Verification Process and SELF / PEER Checking Practices, Revision 5

Section 1R12: Maintenance Effectiveness

DAEC Cycle 19 Maintenance Rule Periodic Review, October 06, 2005
Maintenance Rule Monitoring and Status Report, October 07, 2005
Maintenance Rule Performance Criteria Basis Document for Offsite Power, Revision 3
Maintenance Rule Criteria Values for Offsite Power, October 31, 2005
Maintenance Rule Performance Criteria Basis Document for Control Building Heating Ventilation and Air-Conditioning System, Revision 5
Maintenance Rule Performance Criteria Basis Document Control Room Indication Instrumentation Used for Significant EOP Decisions, Revision 0
Maintenance Rule Performance Criteria Basis Document Annunciators, Revision 3
Corrective Action (CA) 040760, RCE1034 Interim Corrective Action for ECP1628 CB/RB Radiation Monitor Replacement, dated August 12, 2005

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Work Procedure Guidelines (WPG) - 2, On-Line Risk Management Guideline, Revision 20
Maintenance Risk Evaluation for Week 40, September 29, 2005, Revision 1, October 2, 2005, and Revision 2, October 3, 2005
DAEC Online Schedule, Week 9539/9540, September 30, 2005

Maintenance Risk Evaluation for Week 42, October 14, 2005
DAEC Online Schedule, Week 9541/9542, October 14, 2005
Maintenance Risk Evaluation for Week 43, October 21, 2005
DAEC Online Schedule, Week 9542/9543, October 21, 2005

Section 1R15: Operability Evaluations

ACP 110.3, Operability Determination, Revision 3
ACP 114.5, Action Request System, Revision 472
CE003049, Condition Evaluation Documenting HPCI System Venting Operability, HPCI System, October 12, 2005

Section 1R16: Operator Workarounds

ACP 1410.12, Operator Burden Program, Revision 5
Operations (OP)-001, Operator Burden and Tagout (Section) Audit, Revision 33, dated October 15, 2005
OWA 05-001, Potential Vulnerability for lockout of 1A4 power supply to the Alternate Shutdown Panel, June 2, 2005
OWA 05-002, Turbine Steam Seal Main Steam Supply (CV-1175) Isolation, September 22, 2005
Operator Challenge 05-001, 1P-5A/1P-5B Condensate Pump Operations, May 6, 2005
Operator Challenge 05-003, Feedwater regulating valve controller programing uncertainties, May 30, 2005
Operator Challenge 05-006, HPCI system Operable But Degraded requiring compensatory actions, October 12, 2005
Operator Challenge 05-007, Rod 18-15 double notched on withdrawal and twice failed to insert, October 30, 2005

Section 1R19: Post-Maintenance Testing

Maintenance Directive-024, Post Maintenance Testing Program, Revision 34
MWO 1133138, Startup Transformer Feeder to 1A4, October 21, 2005
MWO 1133137, Standby Transformer Feeder to 1A4, October 21, 2005
PWO 1132174, 'A' Standby Diesel Generator, October 31, 2005
MWO 1133139, Feeder Breaker from 1G-21/Generator to 1A4, November 10, 2005

Section 1R22: Surveillance Testing

STP 3.5.1-05, HPCI System Operability Test, Revision 23
STP 3.8.1-06, Standby Diesel Generators Operability Test (Fast Start), Revision 25
STP 3.3.1.1-24, Local Power Range Monitor Calibration, Revision 10
STP 3.5.3-02, RCIC System Operability Test, Revision 17

Section 4OA2: Identification and Resolution of Problems

ACP 114.4, Corrective Action Program, Revision 20

CAP 38552, Scaffold in SE Corner Room without Combustible Materials Tag, October 25, 2005 (NRC Identified)
Condition Evaluation 3035, Untagged Scaffold in the “A” ESW Room, September 29, 2005
Apparent Cause Evaluation 1516, Erected Scaffolding found without Combustible Control Tags, October 27, 2005
CAP 26606, Control of Combustibles, May 27, 2005 (NRC Identified)
CAP 38085, Untagged Scaffold in the “A” ESW Room, September 27, 2005
ACP 1412.2, Control of Combustibles; Revision 24
RCE 001035, Cross Cutting Finding in the Area of Human Performance, September 2, 2005

Section 4OA5: Other Activities

Licensee Event Report (LER) 2005-001, Failure to Demonstrate the Capability to Achieve and Maintain Safe Shutdown Conditions, August 1, 2005
CAP 35060, Corrective Action Does Not Address all Failure Sequences, June 2, 2005

Section 4OA7: Licensee-Identified Violations

CAP 35060, Corrective Action Does Not Address all Failure Sequences, June 2, 2005

LIST OF ACRONYMS USED

ACP	Administrative Control Procedure
AFP	Area Fire Plan
ARP	Annunciator Response Procedure
AOP	Abnormal Operating Procedure
CAP	Corrective Action Plan
CE	Condition Evaluation
CFR	Code of Federal Regulations
DAEC	Duane Arnold Energy Center
EAL	Emergency Action Level
EOP	Emergency Operating Procedure
ESW	Emergency Service Water
HPCI	High Pressure Core Injection
HVAC	Heating, Ventilation, Air-Conditioning
IMC	Inspection Manual Chapter
IPEEE	Individual Plant Examination of External Events
IPOI	Integrated Operating Instructions
IR	Inspection Report
LER	Licensee Event Report
MWO	Modified Work Order
NRC	Nuclear Regulatory Commission
NCV	Non-Cited Violation
OI	Operating Instruction
OOS	Out Of Service
OP	Operations
OWA	Operator Workaround
PA	Protected Area
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post-Maintenance Testing
PWO	Preventive Work Order
RCIC	Reactor Core Isolation Cooling
RHRSW	Residual Heat Removal Service Water
RWS	River Water Supply
SBDG	Standby Diesel Generator
SDP	Significance Determination Process
SEG	Simulator Exercise Guide
SSC	Structures, Systems, Components
STP	Surveillance Test Procedure
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Issue
WPG	Work Procedure Guidelines
WO	Work Order