



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
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LISLE, IL 60532-4352

June 1, 2011

Mr. Christopher R. Costanzo
Vice President
NextEra Energy Duane Arnold, LLC
3277 DAEC Road
Palo, IA 52324-9785

**SUBJECT: DUANE ARNOLD ENERGY CENTER PROBLEM IDENTIFICATION AND
RESOLUTION INSPECTION REPORT 05000331/2011008**

Dear Mr. Costanzo:

On April 29, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed a Problem Identification and Resolution (PI&R) inspection at the Duane Arnold Energy Center. The enclosed report documents the inspection results, which were discussed on April 29, 2011, 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.

The inspection concluded that your staff was effective at identifying problems and incorporating them into the corrective action program. In general, issues were appropriately prioritized, evaluated, and corrected, audits and self-assessments were thorough and probing, and operating experience was appropriately screened and disseminated. Your staff was aware of the importance of having a strong safety-conscious work environment and expressed a willingness to raise safety issues.

However, there were several examples where standards were not being reinforced. These examples were not new and had been previously identified by both the NRC and your Nuclear Oversight group. In the aggregate, these issues demonstrated a continued acceptance of program weaknesses or vulnerabilities.

No violations or findings were identified during this inspection.

C. Costanzo

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Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Docket No. 50-331
License No. DPR-49

Enclosure: Inspection Report 05000331/2011008
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServe

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-331
License No: DPR-49

Report No: 05000331/2011008

Licensee: NextEra Energy Duane Arnold, LLC

Facility: Duane Arnold Energy Center

Location: Palo, IA

Dates: April 11 – 29, 2011

Inspectors: N. Shah, Project Engineer - Team Lead
R. Murray, Resident Inspector—Duane Arnold
A. Dahbur, Senior Reactor Engineer
C. Zoia, Operating Licensing Examiner

Approved by: Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000331/2011008; (April 11 – 29, 2011), Duane Arnold Energy Center; Biennial Baseline Inspection of the Identification and Resolution of Problems.

This team inspection was performed by three regional inspectors and the site resident inspector. Based on the results of this inspection, there were no findings or violations identified during this inspection. 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 4, dated December 2006.

Identification and Resolution of Problems

Overall, the Corrective Action Program (CAP) was appropriately identifying, evaluating, and correcting issues. Workers were generally encouraged to raise issues and felt comfortable doing so. Operating experience was recognized as valuable and was being well communicated. The Nuclear Oversight (NOS) group was maintaining a good oversight role and self-assessments were generally good.

However, there were several examples where standards/expectations were not being reinforced. These examples were not new and had been previously identified by the NRC, NOS and licensee oversight efforts. In the aggregate, these issues demonstrated a continued acceptance of program weaknesses or vulnerabilities.

Examples identified by the Team included a failure to consistently reinforce station expectations for Apparent Cause (ACE) and Operating Experience (OE) evaluations; a failure to ensure that Conditions Adverse to Quality (CAQs) were appropriately screened; and a failure to ensure that corrective actions were properly managed in the CAP.

The licensee had a strong safety culture and workers were comfortable with raising issues with station management. However, the inspectors noted that the licensee's efforts to identify underlying human performance issues and potential safety culture concerns were not very good due to limitations in the process.

NRC-Identified and Self-Revealed Findings

None.

Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution (71152B)

The activities documented in Sections .1 through .4 constituted one biennial sample of Problem Identification and Resolution (PI&R) as defined in Inspection Procedure (IP) 71152.

.1 Assessment of the Corrective Action Program (CAP) Effectiveness

a. Inspection Scope

The inspectors reviewed the licensee's CAP implementing procedures and attended selected CAP program meetings to assess the implementation of the CAP by site personnel.

The inspectors reviewed risk and safety-significant issues in the licensee's CAP since the last NRC PI&R inspection in April 2009. The items selected ensured an adequate review of issues across the NRC cornerstones. The inspectors used issues identified through NRC generic communications, department self-assessments, licensee audits, operating experience reports, and NRC-documented findings as sources to select issues. Additionally, the inspectors reviewed CAP items generated as a result of facility personnel's performance in daily plant activities. The inspectors also reviewed CAP items and a selection of completed investigations from the licensee's various investigation methods, including root, apparent, and common cause evaluations.

The inspectors performed a more extensive review of the safety-related High Pressure Coolant Injection (HPCI) system. This review consisted of a five year search of related issues identified in the CAP and discussions with appropriate licensee staff to assess the licensee's efforts in addressing identified concerns.

The inspectors attended meetings of the Issue Screening Team (IST) and Management Review Committee (MRC) to observe how issues were being screened and evaluated and to obtain insights into the licensee's oversight of the CAP program.

During the reviews, the inspectors evaluated whether the licensee's actions were in compliance with the facility's CAP and 10 CFR Part 50, Appendix B requirements. Specifically, the inspectors evaluated if licensee personnel were identifying plant issues at the proper threshold, entering the plant issues into the station's CAP in a timely manner, and assigning the appropriate prioritization for resolution of the issues. The inspectors also assessed whether the licensee staff assigned the appropriate investigation method to ensure the proper determination of root, apparent, and contributing causes. The inspectors also reviewed the timeliness and effectiveness of corrective actions for selected issue reports, completed investigations, and NRC findings, including Non-Cited Violations (NCVs).

b. Assessment

(1) Effectiveness of Problem Identification

Issues were generally being identified at a low threshold, evaluated appropriately, and corrected in the CAP. Workers were familiar with the CAP and felt comfortable raising concerns. This was evident by the large number of CAP items generated annually; which were reasonably distributed across the various departments. A shared, computerized database was used for creating individual reports and for subsequent management of the processes of issue evaluation and response. These processes included determining the issue's significance, addressing such matters as regulatory compliance and reporting, and assigning any actions deemed necessary or appropriate.

The licensee allowed some items to be tracked outside of the CAP database due to the minor nature of the issues. These items included, but were not limited to, minor procedural changes, Routine Work Tracking items, and training program improvements. The inspectors reviewed some of these items and verified that they were of low enough significance to not warrant inclusion in the CAP. The inspectors also noted that these items were routinely reviewed during MRC meetings.

Trending of issues had improved since the 2009 PI&R inspection. The inspectors noted an increased number of trends being identified and improved procedural guidance regarding when to issue a trend. A review of specific trend evaluations did not identify any concerns. However, the inspectors noted that the licensee still considered trending a weakness, due in part, to staff not applying the appropriate trend coding and to recent changes in the CAP software. This issue was documented as CAP item 342241.

The licensee had identified a negative trend in component mispositionings and was taking corrective action. However, the inspectors noted that not all potential mispositioning events were being identified as such in the CAP. For example:

- Common Cause Evaluation (CCE) 1628155 (2011 Operations Human Performance) identified an event where a vital area door was found unlocked; however, this issue was not counted as a mispositioning event.
- Mispositioning events where control rods were moved incorrectly and where locked valves were found unlocked or with the locking mechanism not installed, were specifically excluded from being identified as mispositioning events per Station Procedure 1410.15, Attachment 2.

The inspectors were concerned that by not properly identifying applicable issues as mispositioning events, the licensee would have a false indication of performance. This issue was documented as CAP item 1646143.

In 2009, the licensee began assigning Nuclear Safety Culture Aspects to selected issues in order to identify potential adverse trends in human performance. While useful, the effort is of limited value as these Aspects were only assigned to NRC findings and not to licensee self-identified or "near miss" events. Given that NRC findings constituted only a small subset of the total issues in the CAP, this resulted in a low probability of identifying an adverse trend at a precursor stage. This issue was documented as CAP item 1646247.

While reviewing ACE 1918 “Perform Aggregated Review of ECP 1871 Related CAPs,” the inspectors noticed that a modification (ECP 1871) to replace 10 Motor Control Center (MCC) buckets also replaced the existing non-temperature compensated thermal overload relays with temperature-compensated relays having the same size as the existing heaters. The inspectors noted that the modification package failed to evaluate whether the new relays were adequate for the application. The inspectors also noticed that document number DGC-E112, “Engineering Design Guide Thermal Overload Relay Application and Sizing,” did not include steps for sizing temperature-compensated overload relays. The licensee subsequently verified that the relays were adequate for their applications. The failure to perform the necessary evaluation prior to replacing the relays was considered a minor violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” since the heaters were later determined to be adequate. This issue was documented as CAP item 1645100.

The inspectors identified that Operating Instruction (OI)-711, “Pumphouse HVAC System,” and Annunciator Response Procedure (ARP)-1C23C, “Annunciator Response Procedure Panel 1C23C Main Plant HVAC,” listed the incorrect room temperature (185 deg F vs 165 deg F) for operability of the emergency service water and residual heat removal service water pumps. The inspectors were concerned that if a loss of Pumphouse ventilation occurred, operators may incorrectly consider both pumps operable. A licensee review identified no past instances where Pumphouse temperature exceeded the operability limits or where operators had made an incorrect operability call. Therefore, this was considered a minor violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedure, and Drawings.” This issue was documented as CAP item 1643862.

(2) Effectiveness of Prioritization and Evaluation of Issues

The inspectors observed that the majority of issues identified were of low-level and were either closed to trend or at a level appropriate for a condition evaluation. Issues were being appropriately screened by both the IST and MRC and the inspectors had no concerns with those items assigned an ACE or root cause evaluation. There were no items in the operations, engineering, or maintenance backlogs that were risk-significant, individually or collectively. The inspectors also identified no issues during the review of the Operations Decision Making Instruction (ODMI) process.

Expectations for classifying items as either Conditions Adverse to Quality (CAQs) or Not Conditions Adverse to Quality (NCAQs) were not always being followed. The inspectors found several examples where CAQs had been screened as NCAQs. For example, the inspectors identified that an issue involving the HPCI minimum flow control valve (discussed below) had been misclassified as an NCAQ, instead of a CAQ. This misclassification of issues was a recurring issue that had been previously identified during the 2009 PI&R inspection and subsequently, by the resident inspectors.

After the 2009 inspection, the licensee had proposed a change to the corporate procedure to remove the NCAQ designation. Although this change has not yet been implemented, the licensee has been implementing the CAP as if it has occurred. This practice could send a mixed message to workers regarding procedural adherence and may result in some issues not being properly addressed due to confusion in the

procedural requirements and actual practice. This issue was documented as CAP items 1640695 and 578709.

Most issues screened in the CAP were closed to a work request or to another CAP report. Generally, both the parent and daughter documents had the necessary verbiage to document the interrelationship. However, the inspectors identified some examples of inadequate cross-referencing. This issue was documented as CAP items 1645132, 1641114, and 1641427.

The inspectors noted that while Root Cause evaluations were of good quality, this was not always true of ACEs. There were several examples where it was difficult to discern how the evaluator had arrived at the stated conclusions either due to poor documentation or a limited evaluation. A similar issue was identified in the 2009 PI&R inspection and in a subsequent NOS audit report. In both cases, the cause was identified as a failure by licensee management to reinforce expectations for ACE quality. Subsequently, the licensee changed the CAP to require that all ACEs be reviewed by the MRC. Previously, the MRC only reviewed a sampling of ACEs.

However, the inspectors identified that the MRC was not always doing a good job of reinforcing ACE quality as evidenced by the following examples:

- ACE 1977 identified potential process issues with the coordination of shipments due to the absence of qualified shipping personnel and/or the qualifications of shipping staff in training. These issues were not fully addressed in the ACE nor were corrective actions assigned. This discrepancy was not identified by the MRC during its review. During interviews with the current shipping coordinator, the inspectors noted that these issues may still exist.
- The inspectors observed that during a meeting on April 13, 2011, the MRC had identified several concerns with an ACE but failed to question why the ACE had received a passing score by the originating department. This was the second time this ACE had been reviewed by the MRC (it had been rejected the first time).

The inspectors identified other ACEs of concern which had received passing scores by the issuing department and had been reviewed by the MRC, but there was no evidence that the MRC had taken corrective action. This issue was documented as CAP items 1641115 and 1646241.

Findings

No findings were identified.

(3) Effectiveness of Corrective Actions

Corrective actions were generally appropriate for the identified issues. Over the 2 year period encompassed by the inspection, the inspectors identified no significant examples where problems recurred.

The inspectors noted that corrective action due dates for some CAQs were often extended without having an adequate justification. This appeared to be due to a change

in the CAP procedures (occurring after the 2009 PI&R inspection), which only required such justification for issues classified as either significance level 1 or 2 but not for those classified as significance level 3, even if the issue was a CAQ. Prior to the change, all corrective actions associated with CAQs required documented justification (including a risk evaluation) prior to extension.

One example was a CAQ associated with the HPCI minimum flow control valve. In February 2010, the licensee identified oil intrusion into the motor actuator for this valve. The issue was classified as significance level 3, with the assigned corrective action being to replace the motor actuator and send the old one offsite for failure analysis. The inspectors noted that this action had been extended five times, with none of the justifications evaluating the risk from extending the due date. The inspectors also noted that the same issue had been identified with another HPCI valve back in 1999. This previous issue had not been captured in the CAP and no action had been taken to identify the cause. For the recent issue, the current due date is August 2011, but this will likely be further extended due to a problem with the vendor assigned to complete the failure analysis. The end result is that a CAQ identified in 1999 and again in 2010 is still not corrected, as the cause of the oil intrusion has never been identified.

The failure to take corrective action to address this CAQ was considered a minor violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." It was considered minor, because in both cases (1999 and 2010) the affected motor actuator was replaced. Additionally, the licensee has inspected all valve motor actuators on a three-year frequency and has not identified any other cases of oil intrusion. The licensee documented the issue with due date extensions and with the failure to take corrective action to address the oil intrusion as CAP items 1641039, 1640695, and 1641653.

Findings

No findings were identified.

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the facility's OE program. Specifically, the inspectors reviewed implementing OE program procedures, observed daily meetings for the use of OE information, and reviewed completed evaluations of OE issues and events. The intent was to determine if the licensee was effectively integrating OE experience into the performance of daily activities, whether evaluations of issues were proper and conducted by qualified personnel, whether the licensee's program was sufficient to prevent future occurrences of previous industry events, and whether the licensee effectively used the information in developing departmental assessments and facility audits. The inspectors also assessed if corrective actions, as a result of OE experience, were identified and implemented effectively and in a timely manner.

b. Assessment

In general, OE was effectively used at the station. The inspectors observed that OE was discussed as part of the daily station and pre-job briefings. Industry OE was effectively disseminated across the various plant departments and no issues were identified during the inspectors' review of licensee OE evaluations. During interviews, several licensee personnel commented favorably on the use of OE in their daily activities.

The inspectors noted that the licensee had made some improvements to the OE process since the 2009 PI&R inspection. For example, station procedures now required that OE be specifically evaluated as part of an ACE. However, the quality of these OE reviews continued to be a concern. Several examples were identified where ACEs did not evaluate whether the inappropriate use of OE was a precursor to the subject issue.

One example was ACE 597395, regarding several unplanned personnel contaminations after workers inappropriately entered the vessel upper head area. The ACE identified that a similar event had occurred in 2004, but did not evaluate whether corrective actions from that event should have prevented recurrence. The inspectors later determined that no corrective actions had been taken in 2004. The licensee documented this issue as CAP item 1646241.

Findings

No findings were identified.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The inspectors assessed the licensee staff's ability to identify and enter issues into the CAP program, prioritize and evaluate issues, and implement effective corrective actions through efforts from departmental assessments and audits.

b. Assessment

The inspectors considered the quality of the NOS audits to be thorough and critical. The department self-assessments were acceptable but were not of the same level of quality as the NOS audits. The inspectors observed that CAP items had been initiated for issues identified through the NOS audits and self-assessments.

Findings

No findings were identified.

.4 Assessment of Safety-Conscious Work Environment

a. Inspection Scope

The inspectors assessed the licensee's safety-conscious work environment (SCWE) through the reviews of the facility's employee concerns program (ECP) implementing procedures, discussions with ECP coordinators, interviews with personnel from various

departments, and reviews of issue reports. The inspectors also reviewed the results of licensee safety culture surveys.

The inspectors reviewed the following ECP case files (titles redacted): 10-74, 10-75, and 11-01R and CAP item 598538, "Upper Management Questioning Attitude," dated December 1, 2010. These files and the CAP item involved potential cases of harassment and intimidation for raising safety issues.

b. Assessment

The inspectors determined that the plant staff were aware of the importance of having a strong SCWE and expressed a willingness to raise safety issues. No one interviewed had experienced retaliation for safety issues raised or knew of anyone who had failed to raise issues. All persons interviewed had an adequate knowledge of the CAP process. These results were similar with the findings of the licensee's safety culture surveys. Based on these limited interviews, the inspectors concluded that there was no evidence of an unacceptable SCWE.

The inspectors determined that the ECP process was being effectively implemented. The inspectors noted that the licensee had appropriately investigated and taken constructive actions to address potential cases of harassment and intimidation for raising issues.

The inspectors noted that the licensee did not have an effective process for performing safety-culture surveys. Per procedure, the licensee was required to perform these surveys every three years. However, there was no guidance regarding how the surveys should be conducted, when the results should be communicated, how to interpret the results, or how to capture and resolve potential concerns. The most recent survey had been completed in July 2010, yet the results of the survey were not communicated until late March 2011. This prevented station management from taking timely action to resolve any potential concerns. Additionally, the survey results were in disagreement with actual performance. For example, according to the survey results, workers did not feel comfortable raising concerns (for fear of retaliation) and that the ECP program was inadequate. There was no clear indication whether this disconnect was due to the conduct of the survey or other issues. In addition, there was no requirement for the station to capture these conflicts in the CAP for resolution. This issue was documented as CAP item 1646273.

Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

- On April 29, 2011, the inspectors presented the inspection results to Mr. Costanzo and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors returned to the licensee the results of the 2009 safety culture survey, which was the only item considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

C. Costanzo, Site Vice President
R. Murrell, Licensing Engineer
D. Brigl, Employee Concerns Investigator
S. Catron, Licensing Manager
D. Curtland, General Plant Manager
P. Hansen, Performance Improvement Manager
B. Kindred, Security Manager
K. Kleinheinz, Engineering Director
B. Porter, Radiation Protection/Chemistry Manager
G. Pry, Operations Director
J. Schwertfeger, Security Operations Supervisor
R. Wheaton, Maintenance Director
G. Young, NOS Manager

Nuclear Regulatory Commission

K. Riemer, Chief, Branch 2, Division of Reactor Projects
L. Haeg, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND 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.

PLANT PROCEDURES

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
NA-AA-200	Employee Concerns Program Process Description	Revision 4
NP-800	Employee Concerns Program	November 6, 2006
PA-AA-102	Operating Experience Program	Revision 3
PI-AA-102-1001	Operating Experience Program Screening and Responding to Incoming Operating Experience Guideline	Revision 4
PI-AA-102-1000	Significant Operating Experience Report and INPO Event Report Process Implementation	Revision 2
PI-AA-102-1002	Internal Operating Experience Guideline	Revision 0
PI-AA-204	Condition Identification and Screening Process	Revision 10
PI-AA-205	Condition Evaluation and Corrective Action	Revision 10
RCEM	Root Cause Evaluation Manual	Revision 16
ACEM	Apparent Cause Evaluation Manual	Revision 10
PI-AA-100-1005	Root Cause Analysis	Revision 3
PI-AA-100-1007	Apparent Cause Evaluation	Revision 2
ACP 102.35	Performance Monitoring and Improvement	Revision 11
PI-AA-101	Self-Assessment and Benchmarking Program	Revision 7
STP 3.5.1-05	HPCI System Operability Test	Revision 52
STP 3.3.8.1-05B	1A4 4KV Emergency Transformer Supply Undervoltage Calibration	Revision 0
ACP 1410.15	Plant Status Control Program	Revision 3
PI-AA-100-1005	Common Cause Evaluation	Revision 1
STP NS540002A/ B	A/ B Emergency Service Water Operability Test	Revision 8/7
	Degraded Equipment Program	
OI 711	Pumphouse HVAC System	Revision 13/14
Annunciator Response Procedure (ARP) 1C23C	Panel 1C23C Main Plant HVAC	Revision 47/48

CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
345177	74229 NCAQ—Corrective Action Closed Without Activity Request	4/1/2010
341341	070391 NCAQ—"A" Recirculation Pump Speed and Vibration Indication	10/10/2010
338500	067550 NCAQ-RFO 21 Rad Surveys (Form HP-41) For the Drywell	May 28, 2009
590045	Tornado Hazards and Industrial Safety Hazards Found in Yard	October 26, 2010
339914	068964—NCAQ—Trend Cap—Condensate Pump Discharge Pressure	August 12, 2009
340193	069243 NCAQ Trend Cap Decline in Flow Rate for All 4 RWS Pumps	August 24, 2009
343191	072243 NCAQ-HU-Individual Left Contaminated Area with WO Paperwork	January 8, 2010
342587	71638 CAQ—Power Uprate Impact on Piping Design Pressure	December 4, 2009
575171	ARs 567034 and 570903 Inappropriately Closed to CE007609	August 23, 2010
343855	072907 CAQ—NRC Findings with Cross Cutting Aspects P.1.D	February 4, 2010
582062	Lack of ACE for NRC Finding 2009-005-01	September 23, 2010
395449	Unexpected Annunciators Due to Weather Conditions	June 30, 2010
575905	Potential Trend in AR Actions Not Properly Closed	August 26, 2010
342540	071591 NCAQ—Issues Regarding MRC Oversight of SABM Program	December 3, 2009
342247	071298 NCAQ—Operating Experience in Causal Evaluations is Not Meeting Expectations	November 18, 2009
578709	CR Classification of CAQ vs NCAQ	September 9, 2010
589013	APRM Inoperability Not Tracked	October 21, 2010
344291	073343 CAQ-1D44 250VDC Battery Charger	February 22, 2010
582781	The Work Management Process is Not Meeting Milestones	September 28, 2010
1613348	SLD2H RCIC Division 2 Sliding Link Broke During STP 3.3.6.1-33	January 27, 2011
597395	PCE 10-43: DW Walkdown, 600-12000 NCPM Particles	June 30, 2011
ACE 1977	CAQ—Exclusive Use Vehicle Left Site Without the Required Release Survey	August 31, 2009
346019	0750071 Weapon Left Unattended	May 7, 2010
ACE 2036	CAQ—Safeguards Let Unattended Inside the Protected Area for 9 Minutes	February 24, 2010
1623363	Results of CA 1611062 on Core Thermal Power 8 HR Average for January 21	February 24, 2011
1599631	RCIC Turbine/Pump Will Not Reach the Normal Operating Speed	December 7, 2010

392243	QA Finding Failure to Provide Satisfactory Corrective Actions	May 27, 2010
585688	CA Closure Review for Assignment 575905-04 Found One CA Was Not Completed	October 7, 2010
1607947	CV4327C, Torus Vacuum Breaker Will Not Open	January 12, 2011
RCE 1085	SCAQ—LHRA HIC Cage Gate Lock Mechanism Not Secured	September 21, 2009
RCE 1086	Auto Reactor Scram Due to Sensed Low RPV Water Level on RPS Channels A2 and B2	October 12, 2009
ACE 2043	NCAQ—NOS Identified Issues Found During RCE 1086 Extent of Condition Review	April 7, 2010
RCE 1084	CAQ—Trend NRC Findings IN PI&R Cross Cut Area	May 15, 2009
393666	INPO 09-008 AFI—Contingency for T1 Spare W/O 34.5 Tertiary	June 9, 2010
344299	073351 NCAQ—Inspection on MO-2318M Identified Oil on Brushes	February 22, 2010
341408	070458 NCAQ—Inconsistencies Between ACP 1408.25 And NFPA 70E	October 13, 2009
336799	065849 NCAQ—False Operation of C-1 Thermostatic Release Valve	March 15, 2009
393988	NEIL Identified Discrepancy	June 11, 2010
339455	068505 CAQ—Review Adequacy of EALs HU1.9 and HA1.7	July 17, 2009
598538	Upper Managers Resist Questioning Attitude	December 1, 2010
REC 1080	RFO21 Electrical Configuration Errors	April 17, 2009
337991	HPCI Unavailability when Torus Suction Line or either CST Isolated	May 5, 2009
581169	UFSAR Table 9.2-1 Contains Wrong Value for RCIC Flow Rate	September 21, 2010
574554	Battery Lid Cracking Trending	August 19, 2010
ACE 1941	While Performing STP 3.3.8.1-05 Relay 1A4/127-SB2 Contacts 3-4 did not Close	April 1, 2009
ACE 1972	Loss of 1L04 Caused Various Control Room Alarms and Unplanned LCO	July 30, 2009
ACE 1981	CV-1804A ASME Closure Time Exceeded	September 9, 2009
RCA 579943-01	“B” Feed Regulating Valve Control Failure	January 13, 2011
316880	Request for Engineering Evaluation Related to the HPCI/RCIC Suction Lines	December 15, 2006
338566	Routine Reviews of Check Valve Program Required by CKV 1.1 not Performed	June 1, 2009
345614	Found Misposition Valves while Performing STPNS790601	April 21, 2010
337847	CV1740 did not Cycle Closed as Expected During TIF	April 28, 2009
338498	Revise Technical Specification Bases to Remove 57 Cell Battery Acceptability	May 28, 2009
RCE 594909-01	Main Generator Failed DC Leakage Test	February 24, 2011

ACE 1956	HPCI Torus Suction Pipe Support HBB-8-SR-3 not in Accordance with Design	May 20, 2009
ACE 1918	Perform Aggregate Review of ECP 1871 Related CAPs	February 12, 2009
316180	EMA A63830 Stated There no ASME Stroke Time for MO-2321	November 4, 2006
337912	Results of HPCI Walkdown	April 40, 2009
594823	Inspection Identified Water in Three Conduits Containing Safety Related Cables	November 13, 2010
ACE 01599805	CV1956A Failed to Open when "A" ESW was Started	December 7, 2010
338165	CV1956A Needed Agitation to Come Open	May 13, 2009
ACE 1973	CV1956A Failed to Open when "A" ESW Pump Started for Bromination	August 4, 2009
338082	CV1956A Failed to Open when "A" ESW Pump Started	May 10, 2009
575188	HPCI Room Temperature Operability Limit Determination	August 23, 2010
319264	HPCI Overspeed Trip Setting was Adjusted Three Times	March 11, 2007
319686	Does HPCI Aux Oil Pump Being Pull-to-Lock Make HPCI Unavailable	March 29, 2007
566062	HPCI Response Time Correction Factor Outside of Band	July 10, 2010
392335	HPCI System Response Time Greater Than 30 Seconds	May 27, 2010
1627874	Improper Mean Seat Diameter Used in CV1956A/B Capability Calculation	March 9, 2011
ACE 1929	CAQ- Potential trend in LCO Tracking Issues	February 27, 2009
335473	CAQ- Potential trend in LCO Tracking Issues	February 17, 2009
CCE 0582143-01	Three OSHA Recordable Injuries Within a 9 Week Span	October 23, 2010
CCE 01628155	Adverse Trend in 2011 Operations Human Performance	April 15, 2011
1608799	V33-0212 Inadvertently Bumped Open While Applying Tags Plus	January14, 2011
ACE 1608799	Immediate Notification Event: Technical Support Center Standby Filter Unit (1V-SFU-031) Made Inoperable Due to Wetting of Charcoal Filter	April 14, 2011
1599213	RCIC Failed to Trip on RX Low Pressure	December 4, 2010
345330	CAQ – EPIP 3.1 Not Used by OSC HP Supervisor During Dress Rehearsal	April 7, 2010
CCE 585794-01	Adverse Trend in NRC Findings with Aspect P.1(c)	December 17, 2010
592051	Unexpected Annunciator from 125 VDC	November 2, 2010
589523	Many Short Period Alarms	October 24, 2010
581479	RHR System Depressurized During Maintenance on V19-0020	September 30, 2010
576958	High Level Alarm	September 15, 2010

573440	Out of Spec Reading on Control Room Panel Checks	August 30, 2010
341891	CAQ – Control Rod 26-31 Exercised Twice During CRD	October 30, 2009
ACE 1982	CAQ –Continuous Control Rod Withdrawal Performed When Notch Withdrawal Intended	September 18, 2009
339703	068753 CAQ – Adverse Trend of Component Mispositionings	July 30, 2009
ACE CCE 1975	Declining Trend in Component Mispositionings	August 28, 2009
337656	066706 CAQ – Secured Diesel Fire Pump Inadvertently	April 21, 2009
341384	070434 NCAQ – Determine if the 3Q09 Rod Mispositioning was a Missed Opportunity for NOS	October 12, 2009
342232	072183 CAQ – INPO 2009 AFI (OP.1-1)	November 18, 2009
ACE 2001	INPO 2009 AFI (OP.1-1)	April 12, 2010
336921	065971 CAQ – Valves Found Out of Expected Position	March 30, 2009
345614	074666 CAQ – Found Mispositioned Valves While Performing STPNS	April 21, 2010
1620696	As Found Valve Position Not in Accordance With Procedure	February 16, 2011
593249	Jumper Installed Across Wrong Terminals During CS LSFT	November 8, 2010
392616	1C219B Auxiliary Pump Was Found Running	June 10, 2010
593949	Loss of SDC During RPS Restoration	November 10, 2010
1608799	V33-0212 Inadvertently Bumped Open While Applying Tags Plus	January 14, 2011
1610493	OPS Evals for HU Events and Resulting CAs are Ineffective	January 19, 2011
1613532	HU Clock Reset for CR00593249 Described a Level 4 Mispositioning	January 27, 2011
1608814	AOP 301.1 SBO Differences to UFSAR	January 14, 2011
ACE 2026	SCAQ – Missed TS Actions During January Bypass Valve Event	January 25, 2010
ACE 2025	NCAQ – CATPRs in Procedures Inappropriately Dropped without Documentation	January 22, 2010
ACE 1925	CAQ – CRD Position Indication Logged Inoperative during Core Alterations	February 20, 2009
1608606	SCRAM on 10/08/09 Evaluated as a Mispositioning Event	January 13, 2011
1608611	Event Described in CR 392616 Re-Evaluated as a Level 4 Mispositioning Event	January 13, 2011
1608664	Missed Opportunities to Identify and Classify Mispositioning Events	January 13, 2011
1610481	2 Mispositioning Events from 2010 Re-Classified from Level 4 to Level 3	January 19, 2011

1603283	2Q and 3Q DQS Roll Up Report Won't be Completed in 4Q 2010	December 22, 2010
341579	070629 NCAQ – Grounding of 1X004 Took Longer Than Scheduled	October 19, 2009
1603305	Two 55-Gallon Drums of Oil Added to 1T-0001 Within a Week	December 22, 2010
RCE 1091	Increase In Unidentified Drywell Leakage	November 9, 2010
RCE 1090	Reactor Scram due to Rising Turbine Vibrations	June 10, 2010
RCE 1081	LRS4559 Manual Reactor SCRAM	May 13, 2009
RCE 1079	'B' Cooling Tower West Riser Failure	June 24, 2009
343261	072313 CAQ – EOC-RPT MCPR Penalty was not Installed When Bypass Valves Failed Open	January 11, 2010
576958	High Level Alarm for HCU 26-03	September 1, 2010
589975	SRM C Exhibited Abnormal Discriminator Threshold Response	October 26, 2010
582068	Potential NRC Finding – ESW Flow Testing	September 24, 2010
337225	066275 CAQ – B SBDG Startup Response	April 2, 2009
591202	1T0217 SBLC Test Tank Seismic Question	October 29, 2010
1600429	Technically Inaccurate Step Identified in OI 563	December 9, 2010
595914	Unexpected Rapid Change in Indicated Reactor Level	November 18, 2010
338383	067433 CAQ – NRC PI&R Inspection Corrective Action Not Performed	May 21, 2009
338587	067637 CAQ – STP 3.3.3.1-03 Voltages Found Out of Tolerance During Calibration	June 1, 2009
342803	071855 CAQ – LCO Delayed For One Hour Due to Work Order Revision Required	December 18, 2009
344683	073735 CAQ – Inadequate Operational Release and Closure Actions	March 9, 2010
567344	CAP 74576 Closed Without Fixing Procedure	July 14, 2010
336820	065870 CAQ – Entered Unplanned TS and TRM LCOs Due to Torus Water Level Indication	March 16, 2009
338532	067582 CAQ – Issues Identified During Review of the 2008 AREOR	May 29, 2009
344386	073438 CAQ – CAP Closure Deficiencies	February 25, 2010
344725	073777 CAQ – Conflicting Terminology in AOP-914 and SP-26	March 10, 2010
336883	065933 CAQ – Work Order Steps Inappropriately Marked NA Using Form NG-014A	March 19, 2009
393996	RCIC Room Temperature in Excess of 104 Deg F at Lower Level	June 11, 2010
340685	069735 NCAQ – Untimely Receipt of Note 05 from EOF and Simulator	September 16, 2009
340868	069918 CAQ – CAP Closed to Different CAP Without Clear Resolution of Recommendation	September 23, 2009
568613	NRC Violation for Procedure Deficiency	July 21, 2010
ACE 568613-01	NRC Finding Surveillance Test Procedure Did Not Include Appropriate Guidance for Reclassifying Leakage Inside the Drywell	July 21, 2010

339081	068131 CAQ—CAP057308 Closed Without Correcting the Condition Adverse to Quality	July 17, 2009
342869	071921 CAQ – Fatigue Rule Violations	December 20, 2009
593949	Loss of Shutdown Cooling During RPS Restoration	November 10, 2010
RCE 593949-10	Loss of Shutdown Cooling at the DAEC	November 10, 2010
RCE 1087	SCAQ – Both Turbine Bypass Valves Failed Open	February 5, 2010
RCE 1598986	PSV 4402 Leakage	December 3, 2010
AR 298274	027317 TC7539A Failed As Left Cal	May 7, 2003
CAP 65719	CAQ- Unexpected Downpower Due to Static Discharge	March 9, 2009
ACE 1960	CAQ- Four Instances of Check Valve Failures Not Being Identified/ Evaluated in CAP	June 6, 2009
ACE 1919	CAQ- Perform Aggregate Review –ECP 1748-SBDG Governor Modification Activity Issues	February 2, 2009
1613348	SLD2H RCIC Div 2 Sliding Link Broke during STP 3.3.6.1-33	January, 27 2011
339697	068747 CAQ – During STP 3.3.6.1-33 SLD1G Link 15/16 Was Stri	July 30, 2009
343858	072910 NCAQ- Data Not Recorded During B EDG Fast Sart Surveillance (ACE 2030)	February 4, 2010
ACE 2017	NCAQ – Review B EDG 95001 Inspection Lessons Learned	December 17, 2009
ACE 1987	CAQ – CAP 70040 (Air Start Piping Issue on ‘A’ EDG) Issues	October 6, 2009
ACE 1955	CAQ – Missed Surveillance on PSE 2213	May 20, 2009
1643862	PI&R 2011 Inspection – Temp Ref for High ESW/ RHRSW Pump	April 21, 2011
342557	071608 CAQ – Will LI-3413 Read Less Than 16 Feet as Specified	June 4, 2002
342239	071290 CAQ – INPO 2009 AFI (CM.3-1)	November 18, 2009
393677	IBPO 09-008 AFI – Transformer Contingency Plans	June 9, 2010
342238	071289 CAQ – INPO 2009 AFI (ER.2-2)	
ACE 2035	CAQ – 1D44 250 VDC Battery Charger	February 24, 2010
ACE 1934	CAQ – SAFETY Equipment Placed into Operation Before Work Complete	March 9, 2009
RCE 1083	CAQ – HPCI Torus Suction Pipe Support HBB-8-SR-3 Not in Accordance With Design	April 28, 2009
RCE 1089	SCAQ – Potential INPO ATV Team Identified Finding in Accreditation Objective 5	March 4, 2010
298274	027317 TC7539A (‘A’ Pumphouse HVAC) Failed as Left Cal	May 7, 2003
RCE 1010	ESW Room Cooler Inlet Damper Failed Closed	November 2003

OPERATING EXPERIENCE

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
352465	OE 040064 Perform OE Evaluation of NRC Information Notice 2009-11	July 13, 2009
352411	OE 36403 Perform OE Evaluation NRC Regulatory Issue Summary 2007-21	March 2, 2009
352502	OE 42357 OE Evaluation—NRC Information Notice 2009-20	October 12, 2009
352401	OE 35672—OE 27882—Core Spray Sparger Bracket Indication	January 30, 2009
352584	OE 045543—OE Evaluation NRC Information Notice 2010-03	February 5, 2010
352548	OE 43873—OE Evaluation NRC Information Notice 2009-29	December 7, 2009
352505	OE 42362—OE Evaluation MOV Failed to Open During Diagnostic Testing	October 12, 2009
352538	OE 43424—OE Evaluation—SOER Guideline SOER 07-02	November 18, 2009
352425	OE 36908 - Perform OE Evaluation NRC Information Notice 2009-005	March 20, 2009
592255	Evaluation of NRC Information Notice 2010-23 “Malfunctions of EDG Speed Switch Circuits”	November 3, 2010
597855	Evaluation of NRC Information Notice 2010-25 “Inadequate Electrical Connections”	November 29, 2010
352491	Evaluation of NRC Information Notice 2009-16 “Spurious Relay Actuations Result in Loss of Power Safeguards Buses”	September 21, 2009

AUDITS, ASSESSMENTS, AND SELF-ASSESSMENTS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
PDA 09-22	Operating Experience	November 18, 2009
PDA 09-033	Self-Assessment	December 3, 2009
PDA 10-031	Self-Assessment	October 25, 2010
PDA 10-012	Corrective Action Program Activity Closure Review	May 6, 2010
AR 1607743	Screening of Startup and Post Outage Equipment Issues	January 11, 2011
AR 390803	SA 045330 Quick Hit Self-Assessment of CAP 13 Attributes	January 29, 2010
AR 396044	NRC SCCI Susceptibility	June 29, 2010
AR 575129	NRC Commitment Management Quick Hit Self-Assessment	August 23, 2010
AR 390757	Quick Hit Preparatory Assessment NRC Problem Identification and Resolution Inspection	March 7, 2011
	DAEC Site Performance Assessment Report 3 rd /4 th Quarter (July-December 2010)	March 1, 2011
AR 01599120	DAEC Motor Program Quick Hit Assessment Report	December 13-16, 2010

PDA 10-035	Nuclear Oversight Assessment (NOS) Report - System Engineering	January 6, 2011
PDA 11-002	Nuclear Oversight Assessment (NOS) Report - Engineering Design	February 16, 2011
SA 042797 / SAFO 00390756	Operations Configuration Control Focused Self-Assessment	October 25, 2010
PDA 10-002	Corrective Action Program	March 4, 2010
PDA 10-020	Plant Operations	July 8, 2010
PDA 10-012	Corrective Action Program Activity Closure	May 27, 2010
AR 590524	Annual Clearance Review per ACP 1410.5/ OP-AA-101	December 16, 2010
PDA 10-015	NOS Audit - Summer Readiness	June 28, 2010
PDA 10-014	NOS Audit - Corrective Maintenance	June 2, 2010

CONDITION REPORTS GENERATED DURING INSPECTION

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
1646143	NRC Comments on ACP 1410.15 (Plant Status Control Program)	April 28, 2011
1640695	CR344299 Inappropriately Identified as NCAQ Instead of CAQ for MO2318-M, HPCI Min Flow Bypass Valve Concern	April 29, 2011
1641039	Due Date Extensions for Significance Level 3 CAs (CAQs and NCAQs) do not Require a Risk Evaluation and Some Have Been Extended Multiple Times	April 29, 2011
1641115	MRC had Comments on ACE 1608799 Despite the ACE Having Been Scored Fairly High. Coaching Was Not Provided to the ACE Owner	April 29, 2011
1641114	Significance Level 3 CA 393666-01 Was Used To Close an SL 2 Action Associated With SOER 10-1	April 29, 2011
1641427	ACE 1973 Was Not Referenced in ACE 1599805	April 29, 2011
1641453	Action Request Could Not Be Found for MO2316-M Issue From 1999	April 29, 2011
1643111	Wrong Significance Level for CR1599213 on RCIC Fuse	April 29, 2011
1643862	Pumphouse Temperatures for ESW/RHRSW	April 29, 2011
1645100	Revise The Design Guide For Thermal Overloads and Include Sizing Calculations for Negative Impact of Replacing Non-Ambient Compensated With Ambient Compensated Thermal Overloads	April 29, 2011
1645132	ACE of Torus Vacuum Breakers Did Not Have Any Tracking of Corrective Actions	April 29, 2011
1646143	Plant Status Control Program May Not Be Capturing All Mispositioning Events	April 29, 2011
1646241	Review PI&R Program With Respect to NRC Observations	April 29, 2011
1646427	Expand Use of Nuclear Safety Culture Aspects	April 29, 2011

1646251	AR345330 Did Not Document All Corrective Actions Taken for EPIP 3.1	April 29, 2011
1646254	Observation, Not More Than Minor, For Untimely Corrective Actions Associated With the HPCI Min Flow Bypass MOV Oil Intrusion Issues	April 29, 2011
1646256	Corrective Actions Do Not Follow the SMART Principle, Need to Be More Specific	April 29, 2011
1646262	Regarding CR1646143 Above, Perform Benchmarking and Effectiveness Reviews	April 29, 2011
1646273	Address Observations From SCWE Interviews	April 29, 2011
1646330	Pumphouse Ventilation Calculation Could Not Be Located	April 29, 2011

MISCELLANEOUS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
DGC-E112	Engineering Design Guide Thermal Overload Relay Application and Sizing	April 14, 2011
	HPCI System Health Report	March 16, 2011
POD 575188-1	HPCI Operability with Respect to Station Blackout Initial Room Condition (120 °F)	August 26, 2010
POD 1627874-01	CV1956A/B Opening Margin Concern Due to Low Margins in Calculation	March 24, 2011
5059SCRN26981	Remove Max Stroke Time for MO2290A/B and MO4841A?B	March 20, 2008

LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
AR	Action Request
CAP	Corrective Action Program
CCE	Common Cause Evaluation
CFR	Code of Federal Regulations
CAQ	Condition Adverse to Quality
DRP	Division of Reactor Projects
ECP	Employee Concerns Program
ESW	Essential Service Water
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IN	Information Notices
IP	Inspection Procedure
IST	Issue Screening Team
MOV	Motor Operated Valves
MCC	Motor Control Center
MRC	Management Review Committee
NCAQ	Not Condition Adverse to Quality
NCV	Non-Cited Violation
NOS	Nuclear Oversight
NRC	U.S. Nuclear Regulatory Commission
ODMI	Operations Decision Making Instruction
OE	Operating Experience
OI	Operating Instruction
PARS	Publicly Available Records System
PI&R	Problem Identification and Resolution
RCE	Root Cause Evaluation
RHRSW	Residual Heat Removal Service Water
SCAQ	Significant Condition Adverse to Quality
SCWE	Safety-Conscious Work Environment
WO	Work Order

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Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

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Letter to C. Costanzo from K. Riemer dated June 1, 2011

SUBJECT: DUANE ARNOLD ENERGY CENTER PROBLEM IDENTIFICATION AND
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