



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, IL 60532-4352

June 26, 2009

Mr. Richard L. Anderson  
Vice President  
Duane Arnold Energy Center  
3277 DAEC Road  
Palo, IA 52324-9785

**SUBJECT: DUANE ARNOLD ENERGY CENTER PROBLEM IDENTIFICATION AND  
RESOLUTION INSPECTION REPORT 05000331/2009007**

Dear Mr. Anderson:

On May 22, 2009, 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 June 16, 2009, 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.

Based on the results of this inspection, one NRC-identified finding of very low safety significance was identified which involved a violation of NRC requirements. However, because of the very low safety significance, and because the issue was entered into the corrective action program, the NRC is treating this issue as a non-cited violation (NCV) in accordance with Section VI.A.1 of the NRC Enforcement Policy.

If you contest the subject or severity of this NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with

a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Duane Arnold Energy Center. In addition, if you disagree with the characterization of the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at Duane Arnold Energy Center. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

Sincerely,

**/RA/**

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000331/2009007  
w/Attachment: Supplemental Information

cc w/encl: M. Nazar, Senior Vice President and  
Chief Nuclear Officer  
M. Ross, Vice President and Associate General Counsel  
A. Khanpour, Vice President, Nuclear Engineering  
D. Curtland, Plant Manager  
S. Catron, Manager, Regulatory Affairs  
M. Mashhadi, Senior Attorney  
T. Jones, Vice President, Nuclear Operations,  
Midwest Region  
P. Wells, Vice President, Safety Assurance  
R. Hughes, Director, Licensing and Performance Improvement  
D. McGhee, Iowa Dept. of Public Health  
Chairman, Linn County, Board of Supervisors  
R. McCabe, Chairman, Regional Assistance Committee,  
DHS/FEMA Region VII  
M. Rasmusson, State Liaison Officer

a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Duane Arnold Energy Center. In addition, if you disagree with the characterization of the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at Duane Arnold Energy Center. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

Sincerely,

*/RA/*

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000331/2009007  
w/Attachment: Supplemental Information

cc w/encl: M. Nazar, Senior Vice President and Chief Nuclear Officer  
M. Ross, Vice President and Associate General Counsel  
A. Khanpour, Vice President, Nuclear Engineering  
D. Curtland, Plant Manager  
S. Catron, Manager, Regulatory Affairs  
M. Mashhadi, Senior Attorney  
T. Jones, Vice President, Nuclear Operations, Midwest Region  
P. Wells, Vice President, Safety Assurance  
R. Hughes, Director, Licensing and Performance Improvement  
D. McGhee, Iowa Dept. of Public Health Chairman, Linn County, Board of Supervisors  
R. McCabe, Chairman, Regional Assistance Committee, DHS/FEMA Region VII  
M. Rasmusson, State Liaison Officer

DOCUMENT NAME: G:\DUANE\DAEC PIR 2009 007.doc

Publicly Available       Non-Publicly Available       Sensitive       Non-Sensitive

To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII	N	RIII	RIII	E				
NAME	NShah:ntp		KO'Brien	KRiemer					
DATE	6/18/09		6/18/09	6/26/09					

**OFFICIAL RECORD COPY**

Letter to R. Anderson from K. Riemer dated June 26, 2009

SUBJECT: DUANE ARNOLD ENERGY CENTER PROBLEM IDENTIFICATION AND  
RESOLUTION INSPECTION REPORT 05000331/2009007

DISTRIBUTION:

Susan Bagley

RidsNrrDorLpl3-1 Resource

RidsNrrPMDuaneArnold Resource

RidsNrrDirslrib Resource

Kenneth O'Brien

Jared Heck

Allan Barker

Jeannie Choe

Linda Linn

Cynthia Pederson

DRPIII

DRSIII

Patricia Buckley

Tammy Tomczak

[ROPreports Resource](#)

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000331/2009007

Licensee: FPL Energy Duane Arnold, LLC

Facility: Duane Arnold Energy Center

Location: Palo, IA

Dates: May 4 – 22, 2009

Inspectors: N. Shah, Project Engineer - Team Lead  
R. Baker, Resident Inspector—Duane Arnold  
R. Clagg, Resident Inspector—North Anna  
J. Jacobson, Reactor Engineer

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

Enclosure

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	1
REPORT DETAILS.....	3
4. OTHER ACTIVITIES .....	3
4OA2 Problem Identification and Resolution (71152B) .....	3
4OA6 Management Meetings .....	11
SUPPLEMENTAL INFORMATION .....	1
KEY POINTS OF CONTACT .....	1
LIST OF ITEMS OPENED, CLOSED AND DISCUSSED .....	1
LIST OF DOCUMENTS REVIEWED.....	2
LIST OF ACRONYMS USED .....	13

## SUMMARY OF FINDINGS

IR 05000331/2009007; (May 5, 2009 – May 22, 2009), Duane Arnold Energy Center; Biennial Baseline Inspection of the Identification and Resolution of Problems.

This team inspection was performed by two regional inspectors, a resident inspector and the site resident inspector. Based on the results of this inspection, one Green finding was identified by the inspectors and is considered to be a Non-Cited Violation (NCV) of NRC regulations. 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) program was adequate in that issues were identified at a low threshold, evaluated and corrected. Self-assessments and audits by Nuclear Oversight (NOS) were thorough and critical of the assessed areas. Operating experience was recognized as valuable, was appropriately evaluated, and was effectively communicated in daily plant meetings and pre-job briefings. Interviews with licensee staff and a review of the employee concerns program indicated that the licensee had a positive safety culture environment that encouraged identification of issues in the CAP.

However, the inspectors identified several areas of concern that prevented the CAP from being an effective tool for performance improvement. There were examples where licensee staff failed to demonstrate a challenging, questioning attitude during issue screening and evaluation, where identified program weaknesses or vulnerabilities were accepted without a strong desire for change, and where management expectations were not reinforced. For example:

- Ineffective trending has been a recurring issue since 2005, based on the results of NRC, industry and station assessments. However, fixing this problem does not appear to be a station priority. Although the pieces needed to have a successful program are largely in place, there does not appear to be a drive to actually implement the process.
- There were some examples of CAP issues that were inappropriately challenged either at the Initial Screening Team (IST), Management Review Committee (MRC) or both. The inspectors observed instances where IST and MRC members accepted issues without challenging the information given or considering the overall impact of the issue on the safety/risk function of the component or system.
- There was a tendency to perform myopic reviews focusing on the specific issue being evaluated and not on the underlying performance concern. Standards for performing cause evaluations were not being reinforced. There were several examples where the review of extent of condition, applicability of operating experience or the basis for the conclusion were either limited or not well documented. Although some of the issues were identified during the evaluation grading, there was no priority or impetus to change the incorrect behavior.

**A. NRC-Identified and Self-Revealed Findings**

**Cornerstone: Mitigating Systems**

- **Green.** A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified by the inspectors for a failure of the licensee to promptly identify and correct a condition adverse to quality (CAQ) associated with the 'D' river water supply (RWS) pump mounting base bolted connectors. The licensee's failure to evaluate the operability of the 'D' RWS pump due to the degraded bolting was considered a performance deficiency. By not examining the thread degradation documented on the overtightened 'D' RWS pump mounting base bolted connectors, the licensee was unable to adequately identify the as-left condition of the stud threads, evaluate the impact that condition had on the seismic qualification of the pump, and implement appropriate corrective actions to resolve the degraded condition. The failure to promptly identify and correct a CAQ associated with the safety-related 'D' RWS pump was a violation of NRC requirements specified in 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." The licensee entered this issue into the Corrective Action Program (CAP Item 067412), examined the pump mounting connectors, and initiated a prompt operability determination to evaluate the seismic qualification. Based on this evaluation, the 'D' RWS pump was declared Operable but degraded.

The performance deficiency was determined to be more than minor because the issue was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated this finding using the Significance Determination Process (SDP) and determined the finding was of very low safety significance (Green) because this finding was a design or qualification deficiency that did not result in a loss of operability of the safety component. The inspectors also determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because the licensee did not promptly and completely identify an adverse condition in the CAP in a timely manner commensurate with its safety significance. [P.1(a)]. (Section 40A2.1b.(1))

**B. 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 IP 71152.

#### .1 Assessment of the Corrective Action Program Effectiveness

##### a. Inspection Scope

The inspectors reviewed the licensee's corrective action program (CAP) implementing procedures and attended 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 2007. The selection of issues 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 risk significant river water supply systems and the station operational decision making (ODMI) process. The review of the river water system 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.

During the reviews, the inspectors evaluated whether the licensee staff'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 evaluated whether the licensee staff assigned the appropriate investigation method to ensure the proper determination of root, apparent, and contributing causes. The inspectors also evaluated the timeliness and effectiveness of corrective actions for selected issue reports, completed investigations, and NRC findings, including NCVs.

##### b. Assessment

##### (1) Effectiveness of Problem Identification

Overall the CAP program was adequate in that issues were identified at a low threshold, evaluated and corrected. Workers were encouraged to identify issues and were familiar with the various avenues available (NRC, CAP, etc). 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. This included determining the issue's significance, addressing such matters as regulatory compliance and reporting, and assigning any actions deemed necessary or appropriate.

However, there were some areas of concern that prevented the CAP from being an effective tool for performance improvement. There were examples where licensee staff failed to demonstrate a challenging, questioning attitude during issue screening and evaluation and where identified program weaknesses or vulnerabilities were accepted without a strong desire for change. Some specific examples were:

- The inspectors observed an IST meeting reviewing CAP Issue Reports 67034 and 67028, involving foreign material found in the condensate storage tank. Both issues were screened as conditions not adverse to quality (NCAQ) on the basis that the tank was non-safety related. However, the IST failed to consider the impact the foreign material could have on the safety related high pressure core injection system, which takes suction from the CST during the initial stage of a design-basis accident.
- The inspectors observed the MRC screening of CAP Issue Report 66544, regarding the potential overtightening of the 'D' river supply pump mounting bolts. Although the report did not contain sufficient information to determine whether the pump was adequately mounted, this issue was not identified during the MRC screening. The pump is safety-related and is required to remain available during a seismic event.
- Corrective Action Program Report 63741, was not considered a condition adverse to quality (CAQ) even though it identified potential degradation of cabling associated with the high pressure core injection, main steam isolation valves and reactor core isolation systems (all safety-related and/or risk significant systems). The issue had been identified during the 2009 refueling outage and was screened by the MRC.

Other examples were also identified by the team and were discussed with licensee staff. The licensee initiated CAP Reports 67083 and 67412 for the above examples.

Ineffective trending has been a recurring issue since 2005, based on the results of NRC, industry and station assessments. However, fixing this problem does not appear to be a station priority. Although the pieces needed to have a successful program are largely in place, there does not appear to be a drive to actually implement the process. The inspectors observed the following:

- There was no stated expectation or procedural guidance regarding when to issue a trend (i.e., a minimum threshold);
- From May 2008 to May 2009, over 9100 items were issued into the CAP, yet only 24 trend CAPs were initiated. Of these, 12 came from Operations and at least one from NRC; and
- Some CAP evaluations (apparent cause evaluation (ACE) 1776, CAP 59216) had identified recurring events, yet there was no discussion or action to consider a common-cause evaluation.

This licensee initiated CAP Report 67330 for the issues with the trend program.

The inspectors also noted that the licensee's procedures didn't state how risk significant, but non-safety related issues were classified. Specifically, the CAP procedures precluded these issues as being either CAQs or NCAQs, based on the specific definitions of these terms. Licensee staff was conditioned to classify only safety-significant issues as CAQs and all non-safety issues as NCAQs, regardless of risk significance. For example, CAP Report 63613, concerning degraded cabling for the main generator protection logic and turbine electro-hydraulic control systems, was screened as an NCAQ, but there was no documentation of whether the issue was risk significant or a potential plant reliability concern. The licensee initiated CAP Report 67361 to address this issue.

The inspectors identified that contrary to ACP 1410.12, "Operator Burden Program," Rev. 16, (Section 3.2(4)), the Operations Manager was not presenting the status of the operator burden program to the plant health committee on a monthly basis. The licensee initiated CAP Report 67440 to address this issue.

### Findings

#### Failure to promptly identify and evaluate the degraded condition associated with the 'D' RWS pump mounting base bolted connectors

Introduction: A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified by the inspectors for a failure of the licensee to promptly identify and correct a condition adverse to quality associated with the safety-related 'D' RWS pump.

Description: On April 5, 2009, the 'D' RWS pump tripped approximately 30 seconds after being started from the control room. The pump was declared inoperable and an investigation commenced. The pump was found to be mechanically bound, with the motor supply breaker tripped on an over-current condition. A work request card (CWO A96711) was written and formal troubleshooting started.

On April 7 the 'D' RWS pump was removed from the intake structure for repair. The pump was re-installed on April 13. The work was done, in accordance with the equipment-specific maintenance procedure, PUMP-J105-03, "Aurora/Johnston River Water Pumps," Revision 9. In accordance with this procedure, the pump mounting and discharge head flange bolts were torqued to 424-464 ft-lbs.

During post-maintenance testing, the pump experienced high vibration readings, requiring removal and reinstallation of the pump bolts. During the reinstallation, one of the six bolts failed and the threads were stripped. The work was stopped and CAP Report No. 066544, was initiated. The CAP stated that one of the studs had stripped and that the other five studs were showing signs of thread degradation.

The licensee identified that the actual, installed bolts (per the construction drawings) differed from those referenced in the maintenance procedure. This meant that the torque value stated in the procedure (424-464 ft-lbs) was incorrect. The correct value (based on the actual bolts installed) was 190-210 ft-lbs. Therefore, the pump mounting and discharge head flange bolts had been overtorqued.

The stripped stud was repaired and the remaining five studs were re-torqued to the correct value. However, these studs were not removed or inspected for thread degradation prior to being re-torqued. Following post-maintenance testing, the pump was declared operable on April 17 and the CWO was closed. A procedural change request was initiated to change the referenced torque value in the pump maintenance procedure.

Corrective Action Program 066544 was reviewed by the MRC on April 16. The issue was properly characterized as a condition adverse to quality and the Engineering Department was tasked to perform a condition evaluation (CE 7353) addressing the extent of condition of the other RWS pumps. The completed CE was reviewed by the MRC on May 19. The MRC approved the CE, as documented, with no additional questions or changes. The inspectors noted that while the CE adequately addressed the condition of the other RWS pumps, it did not address the overtightening of the five remaining studs on the 'D' RWS pump, specifically, whether any thread degradation had occurred which may impact the pump operability. The inspectors asked to review the documentation of the condition of the remaining five studs, specifically, whether the seismic qualification for the 'D' RWS pump was still within design bases. The licensee stated a visual examination of the studs was performed by the mechanical maintenance personnel during the final pump re-assembly and that the only documentation was the description in CAP 66544. The licensee also stated that an evaluation of the seismic qualification of the pump mounting had not been performed. The licensee initiated CAP 67412 to address the inspectors' concerns.

Subsequently, the Shift Manager requested a prompt operability determination from the engineering department and the licensee initiated a work order (CWO A101663) to inspect and document the actual condition of the 'D' RWS pump mounting studs. The inspection identified no cracks, but found that all of the studs had from 3 to 5 degraded threads on each stud, amounting to anywhere from 100 percent (no thread available for engagement) to 25 percent of the thread missing. A subsequent licensee evaluation identified that the degradation significantly challenged the ability of the studs to meet the original design basis stress limits during either an operational or a design basis earthquake. Since calculations showed that the mounting stud threads would still meet the Appendix F ASME Section III code maximum allowable values, the 'D' RWS pump was declared Operable but degraded. A CAP item was initiated (OBD 000317) to ensure that the studs would be repaired no later than the next refueling outage.

Analysis: The licensee's failure to evaluate the operability of the 'D' RWS pump due to the degraded bolting was considered a performance deficiency. By not performing this evaluation, the licensee failed to recognize that the affected studs had significant thread wear, and required replacement in order to restore the pump to full operability. Traditional enforcement did not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation.

The performance deficiency was more than minor because the issue was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, by not examining the thread degradation documented on the overtightened 'D' RWS pump mounting base bolted connectors, the licensee was unable to adequately

evaluate the impact the condition had on the seismic qualification of this safety-related component. The inspectors evaluated this finding using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of findings," Table 4a for the Mitigating Systems cornerstone. Since this finding is a design or qualification deficiency that did not result in a loss of operability of the safety component, the finding was determined to be of very low safety significance (Green).

The failure to accurately and completely characterize the actual as-left condition of the studs precluded the ability to evaluate the potential impact the condition had on the seismic qualification of the safety-related component. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because the licensee did not promptly and completely identify an adverse condition in the CAP in a timely manner commensurate with its safety significance. [P.1(a)]

Enforcement: The 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, between April 14, 2009, and May 19, 2009, the licensee's initial identification, screening, evaluation, and implemented corrective actions associated with the over-torquing of the 'D' RWS pump mounting base bolted connectors, failed to promptly identify and correct a condition adverse to quality regarding the seismic qualification of safety related components. Specifically, by not examining the thread degradation documented on the overtorqued 'D' RWS pump mounting base bolted connectors, the licensee was unable to adequately identify the as-left condition of the stud threads, evaluate the impact that condition had on the seismic qualification of the pump, and implement appropriate corrective actions to resolve the degraded condition. Once this issue was identified by the inspectors, the licensee entered this issue into the CAP, examined the pump mounting connectors, and initiated a prompt operability determination to evaluate the seismic qualification. The 'D' RWS pump was subsequently declared Operable but degraded and a CAP tracking item was initiated to return the pump to the fully operable condition.

Because this violation was of very low safety significance and issue was entered into the licensee's CAP, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000331/2009007-01).

(2) Effectiveness of Prioritization and Evaluation of Issues

The inspectors observed that the majority of issues were of low level and were either closed to trend or at a level appropriate for a condition evaluation. Some of these issues were closed to a work request or to another CAP report, but the inspectors noted that both the parent and daughter documents had the necessary verbiage to document the interrelationship. Although fewer in number, the inspectors did not have any concerns with those issues 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 ODMI process.

The inspectors observed that standards for performing cause evaluations were not being reinforced. There were several examples where the review of the extent of condition, applicability of operating experience, or the basis for the conclusion were either limited or not well documented. There was a tendency to perform myopic reviews focusing on the specific issue being evaluated rather than the underlying performance concern.

- Apparent Cause Evaluation 1922 was written to investigate higher than expected dose rates in the radwaste surge tank following a water transfer. Although the ACE identified some issues with how water transfers were conducted in general, it only focused on the specific circumstances. Additionally, the ACE failed to consider whether previously identified operating experience could have prevented this event.
- Apparent Cause Evaluation 1833 was written to investigate why one security crew did not have the necessary fire brigade trained personnel. Although the ACE identified a similar, prior event, there was no discussion of why the corrective actions from that event failed to prevent recurrence.
- Apparent Cause Evaluation 1776 was written to investigate why a degraded cable issue had not been captured in the CAP. However, the ACE did not evaluate this issue, but only addressed the operability impact of the degraded cable. Additionally, the ACE identified several, similar prior events, but did not evaluate whether a common-cause evaluation was warranted.
- Apparent Cause Evaluation 1780 was written to investigate an unposted high radiation area identified on the torus catwalk. The ACE had a very limited extent-of-condition evaluation and failed to consider whether previously identified operating experience could have prevented this event.
- Apparent Cause Evaluation 1802 was written to investigate events where operating crews failed to maintain critical parameters within prescribed limits. The extent of condition was limited to a listing of internal operating experience and did not address other areas of plant operations where a similar condition could exist.

Each of the above ACEs had been graded by the respective, initiating departments prior to issuance. In some cases, these issues were identified during the grading, but there was no expectation or impetus to change the “incorrect” behavior, as the ACEs received passing scores. The licensee initiated CAP Reports 67100, 67307, and 67331 to address the issues identified by the inspectors.

Corrective Action Program Report 58355 was initiated after the licensee identified that the ‘B’ standby diesel generator lube oil temperature was high due to a failed switch. The MRC concluded that an ACE was not required as the cause of the issue was simple and known and that the extent of condition was understood. However, the inspectors noted that there was no causal analysis regarding why the switch failed. The licensee initiated CAP Report 58355 to evaluate why the cause of the switch failure was not evaluated.

### Findings

No findings of significance were identified.

### (3) Effectiveness of Corrective Actions

The inspectors concluded that over the 2 year period encompassed by the inspection, the licensee implemented effective corrective actions. The inspectors identified no significant examples where problems recurred.

However, the inspectors identified some examples where issues identified in CAP evaluations were not fully addressed by corrective actions. For example:

- Root cause evaluations 1074 and 1075 addressed weaknesses in the CAP program identified by an industry audit. The evaluations identified several items of concern, yet there were no clearly identified corrective actions associated with each of these items.
- Corrective Action Program Report 62896 was written to address an unexpected alarm on an average power range monitor (APRM) due to age related degradation of a relay. Although the CAP evaluation identified other, similar relays susceptible to similar failure in the APRM system (which was safety-related), there were no corrective actions to evaluate the plant risk in order to prioritize repairs.

The above examples were due, in part, to the issues with the quality of the cause evaluations discussed above, and will be addressed in the associated CAP report items. However, the licensee did initiate CAP Report 67237 to evaluate the issues with root cause evaluations 1074 and 1075.

The inspectors also identified numerous examples where extensions for corrective actions were granted without having an adequate basis or documenting the justification. The licensee issued CAP Report 65894 to address this issue.

#### Findings

No findings of significance were identified.

## .2 Assessment of the Use of Operating Experience

### a. Inspection Scope

The inspectors reviewed the licensee's implementation of the facility's Operating Experience (OE) program. Specifically, the inspectors reviewed implementing OE program procedures, observed daily station and pre-job briefings to observe the use of OE information, and reviewed completed evaluations of OE issues and events. The inspectors' review was to determine whether 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 effectively and timely implemented.

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.

Findings

No findings of significance 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 self-assessments were acceptable but, as expected, they were not at the same level of quality as the audits. The inspectors observed that CAP items had been initiated for issues identified through the NOS audits and self-assessments.

The inspectors identified that the maintenance department, contrary to the other plant departments, had not performed a "quick-hit" self-assessment in the past 2 years. The licensee initiated CAP Report 67376 to address this issue.

Findings

No findings of significance were identified.

.4 Assessment of Safety-Conscious Work Environment

a. Inspection Scope

The inspectors assessed the licensee's safety-conscious work environment through the reviews of the facility's 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): 09-06R, 06-03, 07-06, 07-03R, 08-05, 08-08, and 08-02. These files 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 review of several, selected case files (generated from 2006-2009) concerning apparent cases of harassment and intimidation for raising safety concerns determined that the licensee had appropriately investigated and taken effective action to address the individual issues and promote a strong SCWE. However, during the interviews, several individuals did not know who the site ECP coordinator was nor were familiar with the site Differing Professional Opinion process (which was another forum, similar to the ECP, for raising safety issues). The inspectors also identified a potential vulnerability in the ECP process based on how issues were classified. Specifically, the inspectors noted that based on the classification, some issues had more relaxed requirements regarding documentation and feedback to the originator which may lead individuals to believe that the ECP was not effectively addressing issues. The licensee initiated CAP Report 67378 to address this concern.

#### Findings

No findings of significance were identified.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

- On May 22, 2009, the inspectors presented the inspection results to Mr. Anderson and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.
- On June 16, 2009, the inspectors held a teleconference with Mr. Anderson and other members of his staff, to discuss the finding and NCV for the failure to identify and correct a CAQ associated with the 'D' RWS pump.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee

- \*R. Anderson, Site Vice President
- \*R. Murrell, Licensing Engineer
- D. Brigl, Employee Concerns Investigator
- S. Catron, Licensing Manager
- D. Curtland, General Plant Manager
- M. Davis, Emergency Preparedness Manager
- P. Dutcher, Maintenance Support General Supervisor
- P. Giroir, Operations Support Manager
- B. Porter, Radiation Protection/Chemistry Manager
- G. Rushworth, Assistant Operations Manager
- J. Schwertfeger, Security Operations Supervisor
- J. Swales, Mechanical Design Supervisor

\*Present during the June 16, 2009, teleconference

Nuclear Regulatory Commission

K. Riemer, Chief, Branch 2, Division of Reactor Projects

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

Opened and Closed

05000331/2009007-01	NCV	Failure to promptly identify and evaluate the degraded condition associated with the 'D' RWS pump mounting base bolted connectors (Section 4OA2.1b.(1))
---------------------	-----	---

## LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection 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 0
PA-AA-102	Operating Experience Program	Revision 0
PI-AA-204	Condition Identification and Screening Process	Revision 2
PI-AA-205	Condition Evaluation and Corrective Action	Revision 1
NP-809	Nuclear Policy: Safety Conscious Work Environment	Revision 0
NAP-412	Operational Decision-Making	Revision 6
NAP-424	Employee Concerns Program	Revision 2
CP 0060	Differing Professional Opinions	Revision 0
OP-001	Operator burden and clearance audit	Revision 43
ACP 101.01	Procedure use and adherence	Revision 45
ACP 102.35	Performance Monitoring and Improvement	Revision 11
ACP 114.8	Action Request Trending	Revision 6
ACP 1208.6	Equipment Reliability Process Description	Revision 7
ACP 1410.12	Operator burden program	Revision 16
MD-042	Bolting Practices	Revision 9
PUMP-J105-03	Equipment-Specific Maintenance Procedure AURORA/JOHNSTON River Water Pumps	Revision 9 & 10 & 11
	Root Cause Evaluation Manual	Revision 17
	Apparent Cause Evaluation Manual	Revision 10
	CAP Trend Code Manual	Revision 5
	Common Cause Effectiveness Manual	Revision 3
	Corrective Action Effectiveness Manual	Revision 3

### CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
CAP 035236	CAQ – A SBDG As-Found Frequency OOS During STP 3.8.1-06	3/11/2005
CAP 036841	'A' River Water Supply Pump dp Not Within ASME Limits	6/20/2005
CAP 037283	NCAQ – PCIS Maint. Rule Yellow Associated with PASS Decommissioning	7/29/2005
CAP 042761	High RHRSW Strainer dp Alarm	6/16/2006
CAP 042926	CAQ-Upward Step Change in 'B' Recirc MG on 6/25/2006	6/16/2006

**CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
CAP 047115	CAQ—Worker on Wrong RWP Has Dose Rate Alarm, HP Dispatched Finds High Rad Area	2/7/2007
CAP 048889	Turbine Vibrations Not Returning to Expected Values	4/6/2007
CAP 049550	RCIC LCO not entered for planned work as scheduled due to emergent work	5/7/2007
CAP 049684	NCAQ Inaccuracies in the 2006 Annual Radiological Environmental Operating Report	5/10/2007
CAP 049711	NRC DEP PI opportunities	5/11/2007
CAP 049725	NRC weekly debrief	5/11/2007
CAP 049726	NRC weekly debrief EP drill critique process	5/11/2007
CAP 050247	Corrective Action Inventory at DAEC Continues to Increase on a Long Term Trend	6/7/2007
CAP 050437	EP snapshot self-assessment on RCE corrective actions	6/15/2007
CAP 050438	EP Snapshot self-assessment on RCE corrective actions	6/15/2007
CAP 050594	Unplanned risk level of yellow due to severe thunderstorm watch	6/22/2007
CAP 050635	Conduct operator training on transition for ED with ATWS	5/11/2007
CAP 050636	LOR EOP training activities	6/25/2007
CAP 051042	DAEC emergency plan table B-1	7/12/2007
CAP 051129	CAQ-CAs of RCE 1029 Were Not Effective in Preventing Copper Coil Leak	7/17/2007
CAP 051288	CAQ-DAEC Year-to-Date Dose Increased Over 3000 millirem on Daily Exposure Rep.	7/24/2007
CAP 051343	Focused Self Assessment of Design and Reliability of Intake Structures and Equipment	7/26/2007
CAP 052666	CAQ – 50.72 notifications during EP drills	9/21/2007
CAP 052776	CAQ—Potential MOV Stroke Delay Times are Not Accounted For	9/26/2007
CAP 052797	CAQ – Loss of Trending Data	9/27/2007
CAP 052960	CAQ – Damage to 1B42 Bus Bars When Tagging Out 1B4234A	10/5/2007
CAP 053115	CAQ-Degraded Condition Not Documented in CAP	10/12/2007
CAP 053208	CAQ – CAP052817 did not consider past operability	10/16/2007
CAP 053487	NCAQ-Decrease in Indicated Core Flow	10/28/2007
CAP 053759	NCAQ – Declining Trend in Training for CA Extension	11/9/2007
CAP 053880	CAQ – 3Q07 Maintenance DRUM-Increase in Clock Resets for the Quarter	11/16/2007
CAP 054037	CAQ – Standby Transformer Voltage Concerns	12/10/2007

**CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED**

<b>Number</b>	<b>Description or Title</b>	<b>Date or Revision</b>
CAP 054053	CAQ – ‘A’ and ‘B’ SBDG Auto Start Due to 161KV Breaker Cycling (DAEC to Fairfax)	12/1/2007
CAP 054293	CAQ-Reactor Level Lowered 2 Inches Without Operator Action	12/14/2007
CAP 055211	CAQ-B Recirc Pump Seal Pressure Increase	2/1/2008
CAP 055300	NCAQ – NOS Identified Negative Trend in Blocked Access to Fire Protection Equipment	2/5/2008
CAP 055365	CAQ – PSV1800B Failed As-Found Seat Leakage Testing	2/7/2008
CAP 055441	CAQ-STREAM Analysis Driver—Management Tolerance of Performance	2/11/2008
CAP 055559	CAQ-NRC Identified Concern During CDBI	2/14/2008
CAP 055801	CAQ-Security Department Without Fire Brigade Personnel for 2 hours	2/25/2008
CAP 056556	CAQ – Inconsistent, Non-standardized CAP Trending	3/25/2008
CAP 057138	CAQ – Potential license operator restriction	4/22/2008
CAP 057465	1E053B3 Expansion Bellows Leaking	5/7/2008
CAP 057570	Trend – HCU Alarm	5/13/2008
CAP 057678	NCAQ-CV1569 Appears to Have Partially Cycled Based on Downstream Temperatures	5/18/2008
CAP 057717	Confusion on Concurrent and Independent Verification	5/20/2008
CAP 057980	CAQ – NRC commitment not met in past operability calculation	5/28/2008
CAP 058085	1P205A and B Decreasing Vane Pass Trends	7/25/2008
CAP 058097	CAQ-1X001 Main Transformer Hot Connection	6/3/2008
CAP 058142	‘A’ SBLC Pump Momentary Pressure Drop	6/4/2008
CAP 058928	Fermanite Valve V07-0247 Repair	8/26/2008
CAP 058978	‘A’ RHRSW Strainer dp Pegged Low	7/18/2008
CAP 059090	NCAQ – Ops burdens review meetings	7/24/2008
CAP 059294	‘A’ SFU Unit Required 1 Bolt & Nut to be Replaced	8/4/2008
CAP 059308	Main Steam Line Temperatures Approaching Upper Limit	8/5/2008
CAP 059348	Discrepancy Between Pipe Support Drawing Load and Calculation Loads	8/6/2008
CAP 059388	CAQ-SECR Pipe Supports Appear to Have Missing Bolts	8/7/2008
CAP 059395	CAQ-Undersized Bolt on A SFU Housing Flange	8/7/2008
CAP 059432	Undesired Recirc Flow Changes	8/8/2008
CAP 059444	RWS STP-NS 100102 Indicates 1P117D Degrading	8/10/2008
CAP 059468	Pipe Support Discrepancies	8/11/2008
CAP 059495	NCAQ – High risk activities not on the risk report or discussed at production meet	8/12/2008

**CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
CAP 059731	CAQ-RCE 1076 CATPR 2.1 Corrective Actions May Not Have Been Effectively Implemented	8/22/2008
CAP 059783	CAQ-Both MSR Second Stage Drain Tanks (1T092A and 1T092B) Have One Controller	8/25/2008
CAP 059861	CAQ—HPCI Steam Exhaust Breaker Drawing Discrepancy	8/27/2008
CAP 059892	CAQ—HPCI Steam Exhaust Vacuum Breaker Piping Configuration Does Not Match Design Calc	8/28/2008
CAP 060140	Error in HPCI Steam Exhaust Vacuum Breaker Piping Design Calc	9/10/2008
CAP 060140	CAQ—Mistake Discovered In the HPCI Steam Exhaust Vacuum Breaker Piping Design Calc.	9/10/2008
CAP 060168	CAQ – NRC inspector question regarding HPCI SR 3.5.1.1	9/11/2008
CAP 060168	CAQ—NRC Inspector Question Regarding HPCI SR 3.5.1.1	9/11/2008
CAP 060283	NCAQ—HPCI Operability Questioned During Performance of A77986	9/16/2008
CAP 060388	NCAQ—Missing Fasteners in MG SET Room	9/18/2008
CAP 060543	CAQ – Functionality assessment not performed	9/24/2008
CAP 060616	Corrosion Noted on West Shell Flange on 1E053A Heat Exchanger	9/29/2008
CAP 060874	Valve Installed in the Plant Not per the Design Documents	10/9/2008
CAP 060968	CAQ – Potential Negative Trend Identified with Recent Scaffold Installations	10/14/2008
CAP 061237	'B' Chiller Oil Pressure Continues to Degrade	10/23/2008
CAP 061328	NCAQ-Initiating an ODM Issue for Main Generator Low Frequency Alarms	10/27/2008
CAP 061511	Anomalies Noted with 'B' SBDG Engine Overspeed Switch	11/4/2008
CAP 061513	NCAQ – Question on LCO 3.8.1 Condition B required action B.3	11/4/2008
CAP 061709	NCAQ – Work Request Card Voided to CAP That Was Closed to Trend	11/13/2008
CAP 061725	CAQ-Bolt Missing From Hanger (next to MO2202)	11/13/2008
CAP 062741	CAQ – Failure to Address Trend in NRC Identified Issues	11/14/2008
CAP 062046	CAQ—NRC Cross-Cutting Findings	12/2/2008
CAP 062175	CAQ-Main Turbine Bypass Valve BV1 Position Feedback Signal is Intermittent	12/7/2008
CAP 062246	NCAQ – BV-1 False Open Signal-Need to Restore Reliability & Implement Bridge Strategy	12/10/2008
CAP 062255	CAQ – Trend in low level HU errors in operations since 11/26/08	12/10/2008
CAP 062569	Unplanned Reactor SCRAM due to Loss of Circ Pit Level	2/1/2009

## **CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
CAP 062569	'C' RWS Pump dp Not Within ASME Limits	12/29/2008
CAP 062602	'A' RWS Subsystem Inoperable Due to HSS-2911A Out of Position	12/31/2008
CAP 062760	NCAQ—Missing Fasteners—Drywell EQ Boxes	1/9/2009
CAP 062896	CAQ-APRM Inop Trip with No Back Panel Indications	1/15/2009
CAP 062919	CAQ – TS LCO 3.8.1b required action B.3 exited prematurely	1/15/2009
CAP 062989	NCAQ – 4 <sup>th</sup> Quarter 2008 DAEC DRUMs to be Postponed	1/19/2009
CAP 063486	CAQ-Increased Dose Rates in Radwaste Surge Tank	2/3/2009
CAP 063758	NCAQ – Potential trend in procedural use and compliance	2/7/2009
CAP 063828	During the IVVI, FME Was Found in RPV	2/8/2009
CAP 063867	CAQ—Perform Aggregate Review of ECP 1871 Related CAPs	2/9/2009
CAP 063912	INR IVVI-09-04 & -05 Steam Dryer Indications	2/10/2009
CAP 064512	CAQ-Diver in Torus Received Accum. Dose and Dose Rate Alarms on Electronic Dosimeter	2/20/2009
CAP 064644	CAQ – Rack Dwg M155-012<7> 1C08 Depicts Freq Meter & Volt Meter Term. Incorrectly	2/19/2009
CAP 064746	CAQ—LLRT Spill Causes Concern in Clean Area: RB 786' by Reactor Water Sample Valves	2/20/2009
CAP 064786	CAQ-Three Personnel Contaminations in the Hotwell	2/21/2009
CAP 065300	NCAQ – Two risk reviews for the same evolution evaluated differently	2/27/2009
CAP 065311	RFP Discharge Piping DBD003 Spring Can is Unable to be Set Properly	2/27/2009
CAP 065874	NCAQ—FO Boxes Missing Cover Screws	3/17/2009
CAP 065970	NCAQ – MRC Identified Trend of CAP for Plugged Drains	3/20/2009
CAP 066009	NCAQ – Initiating an ODMI for HP Turbine Steam Leak to Track Completion of Repair	3/23/2009
CAP 066066	NCAQ – 1T93B Leak and CV1077B Observed cycling Full Open to Full Closed	3/25/2009
CAP 066341	CAQ – 1P117D Trip	4/5/2009
CAP 066485	CAQ – River Water Supply Pump D Failure	4/12/2009
CAP 066528	NCAQ – Several Significance Level B CAPs Inappropriately Closed to a S/L C CAP	4/14/2009
CAP 066544	CAQ – 1P117D-(1) Discharge Base Mounting Stud Threads Are Stripped	4/14/2009
CAP 066724	CAQ – Overdue Focused Self Assessment	4/22/2009
CAP 066855	NCAQ – Untimely Review of PI&R Inspection Self Assessment Report by MRC	4/27/2009

**CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED**

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
CAP 067412	CAQ – NRC PI&R Concerns With D River Water Pump Mounting	5/20/2009
CAP 067433	Corrective Action Not Performed per CA 50628	5/21/2009
CE 5829	CAQ – Large Number of CAPs Initiated During 50.59/Mod Inspection	10/23/2007
CE 6419	Trend in General Maintenance Misposition Events	5/14/2008
CE 6616	CAQ – Recent Trend in Bolting Issues	8/13/2008
CE 7149	NCAQ – Refuel Bridge Outage Performance Improvement	2/21/2009
ACE 1488	High 'B' RHRSW Strainer dp	9/8/2005
ACE 1727	STP Alarm Not Received As Expected	5/9/2007
ACE 1736	Required Simulator Testing Not Finished on Time	Revision 0
ACE 1737	Plant Modifications Installed Without Adequate Training	5/24/2007
ACE 1740	Repetitive Failure to Provide Satisfactory Corrective Action	6/1/2007
ACE 1741	Trend in Configuration Control Loss During Fabrication & Welding	6/4/2007
ACE 1767	Newly Installed RWS Check Valve Weight is Greater than Analyzed	9/18/2007
ACE 1768	CAQ – Unplanned tech spec LCO for PAM Instrumentation	Revision 0
ACE 1773	CAQ – Unexpected APRM A, C & E upscale and ½ scram during STP 3.3.1.1-34	Revision 0
ACE 1774	STP would render 'B' SBDG unavailable	Revision 0
ACE 1776	CAQ-Degraded Condition Not Documented in CAP	11/26/2007
ACE 1780	CAQ—Worker on Wrong RWP Has Dose Rate Alarm, HP Dispatched Finds High Rad Area	2/15/2008
ACE 1788	NCAQ – Perform Common Cause Evaluation as Noted in Activity Description	8/31/2007
ACE 1801	Evaluation of OP.1-1 AFI from 2007 INPO plant evaluation	Revision 1
ACE 1802	2007 INPO AFI OP.1-2 – Critical parameter monitoring	Revision 0
ACE 1807	INPO AFI EN.1-1	1/15/2008
ACE 1814	INPO AFI OR.2-2	Revision 0
ACE 1824	CV-4914 Failed to Open Within ASME Acceptance Criteria	2/12/2008
ACE 1833	CAQ-Security Department Without Fire Brigade Personnel for 2 hours	3/24/2008
ACE 1849	Apparent Cause Eval for Expansion Bellows Leakage	5/31/2008
ACE 1860	Unusual event declared based on loss of communications capability	Revision 0
ACE 1872	Unplanned technical specification LCO due to failure of FY2747	Revision 0

**CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED**

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
ACE 1878	CAQ-RCE 1076 CATPR 2.1 Corrective Actions May Not Have Been Effectively Implemented	10/10/2008
ACE 1882	CAQ—NRC Inspector Question Regarding HPCI SR 3.5.1.1	9/11/2008
ACE 1883	Isophase Bus Duct Project Scope Change	9/17/2008
ACE 1891	CCE – Five clearance preparation issues were identified between 9/24/08-9/29/08	Revision 0
ACE 1901	Common Cause Evaluation CAQ—NRC Cross-Cutting Findings	1/5/2009
ACE 1904	CAQ-Main Turbine Bypass Valve BV1 Position Feedback Signal is Intermittent	1/15/2009
ACE 1908	'C' RWS Pump dp not within ASME Limits	1/5/2009
ACE 1909	'A' RWS Subsystem Inoperable Due to HSS-2911A Out of Position	12/31/2008
ACE 1910	NCAQ – Adverse Trend in Missed Surveillances	1/16/2009
ACE 1913	CAQ-APRM Inop Trip with No Back Panel Indications	3/22/2009
ACE 1917	Failed IST Closure Test – V23-0049	2/8/2009
ACE 1918	CAQ—Perform Aggregate Review of ECP 1871 Related CAPs	3/2/2009
ACE 1919	CAQ—Perform Aggregate Review—ECP 1748—SBDG Governor Modification Activity Issues Common Cause Evaluation Due After the RFO (3/31/2009)	2/12/2009
ACE 1922	CAQ-Increased Dose Rates In Radwaste Surge Tank	2/24/2009
ACE 1924	CAQ – CV4413, 'A' Outboard MSIV High Leakage	2/7/2009
ACE 1926	Three Personnel Contaminations in the Hotwell	2/21/2009
ACE 1927	Common Cause Evaluation CAQ—LLRT Spill Causes Concern in Clean Area: RB 786' by Reactor Water Sample Valves	3/30/2009
ACE 1928	CAQ-Diver in Torus Received Accum. Dose and Dose Rate Alarms on Electronic Dosimeter	4/29/2009
ACE 1934	CAQ – Safety-Equipment Placed Into Operation Before Work Complete	3/9/2009
RCE 1050	1K004 Compressor Overheats-Unplanned LCO	3/13/2006
RCE 1053	RHRWS Pump Motor Cooler Inoperabilities	Revision 3
EFR 044304	Effectiveness Review for RCE 1053	7/16/2008
RCE 1067	Root cause analysis of 2006 LOR examination failures	6/26/2007
RCE 1068	Ops training SA – teamwork between ops dept and ops training	5/2/2007
RCE 1069	Organizational Responses Not Meeting Expectations	5/2/2007
RCE 1070	Root cause analysis of control room simulator fidelity issues	6/27/2007

**CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
RCE 1072	Damage to 1B42 Bus Bars When Tagging Out 1B4234A	10/9/2007
RCE 1072	A Loss of Vital Bus 1B42 (480 VAC)	Revision 1
RCE 1073	Steam Leak on 'B' RFP Min Flow Line Vent	Revision 2
RCE 1074	STREAM Analysis Driver—Ineffective Corrective Actions	4/24/2008
EFR 049673	CAQ—EFR for RC1 CATPR1 Ineffective Corrective Actions RCE 1074	4/24/2008
RCE 1075	Organization Tolerance of Performance	2/25/2008
RCE 1076	CAQ – Danger Tag Hung and Verified on the Wrong Breaker	2/22/2008
RCE 1077	SCAQ – Safety – DZNPS Electrician Receives Shock	10/14/2008
RCE 1078	'B' EDG Output Breaker Trip	11/2/2008
RCE 1079	'B' Cooling Tower West Riser Failure	Revision 0
RCE 1080	RFO21 Electrical Configuration Errors	Revision 1

**OPERATING EXPERIENCE**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
CAP 018948	Deficiencies Identified Pertaining to Source Control	10/6/1997
CAP 055830	NCAQ—Rapid FPL Internal OE—Turkey Point Clock Reset	2/26/2008
CAP 057420	NCAQ—Rapid OE PTN Valve Out-of-position	5/6/2008
CE 6224	Rapid OE—Turkey Point Site Clock Reset: Wrong RWP Resulted In ED Alarm	2/28/2008
CE 6293	NCAQ—Rapid OE—Turkey Point Configuration Control Issue and Potential HU Event	3/21/2008
OE 21336	External Operating Experience	8/13/2007
OE 23312	Perform OE Evaluation—GE TIL 1588 Explosive Gas Mixture in Stator Water Tanks	10/31/2007
OE 27315	Perform OE Evaluation—A 10CFR Part 21 Replacement Relief Valve Spring	3/21/2008
OE 27347	Perform OE Evaluation—Part 21 GE CR120 Relay Coils	3/22/2008
OE 29924	Perform OE Evaluation—NRC Information Notice IN 2008-11, Service Water Degradations at Brunswick	6/23/2008
OTH 20109	Source Control—I&C Use of Calibration	10/14/1997

## **AUDITS, ASSESSMENTS AND SELF-ASSESSMENTS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
SA 20302	SnapShot Evaluation of the DAEC Probabilistic Risk Assessment (PRA) Program	6/22/2007
SA 24116	Mechanical Maintenance Benchmarking Trip for Relief Valve Test Bench	11/29/2007
SA 25100	Self Assessment of Systems Engineering Trending	1/8/2008
SA 25844	Quick Hit Self-Assessment on Transformer, Switchyard, and Grid Reliability	2/4/2008
SA 26184	NCAQ – Conduct a Fleet Self-Assessment of the Corrective Action Program	2/14/2008
SA 28416	Perform Quick Hit Assessment on Snubber Program	5/1/2008
SA 28418	ASME Repair / Replacement Program Self Assessment	5/1/2008
SA 29096	FSA Conduct a Focused Self-Assessment of the Performance Improvement Programs	5/16/2008
SA 29192	This Action Supersedes/Replaces OTH 29156 and SA 48465	5/20/2008
SA 30765	NCAQ – Conduct a Quick Hit Self-Assessment on RCA Postings	7/31/2008
SA 32236	Concept of Department Fundamentals is Not Understood in All Areas	9/29/2008
SA 33284	Industry Focused Self-Assessment of EPA	10/30/2008
SA 34254	Evaluate station summer readiness	Revision 1
SA 35513	Perform a Quick-Hit Assessment of ODMIs	1/22/2009
SA 36477	2009 DAEC Pre-PI&R CAP Self Assessment	4/29/2009
SA 36716	Perform Quick Hit SA on DAEC Commitment Tracking Program	3/16/2009
SA 37311	Post Outage Validation of PADS/Security Computer Active Personnel	3/31/2009
SA 43996	Operating Experience Program	6/28/2007
SA 44138	Conduct a Self-Assessment of the Conduct of Maintenance	10/3/2006
SA 44139	Perform a Focused Self-Assessment for FME	10/3/2006
SA 44237	Mod / 50.59 Self Assessment	10/23/2006
SA 45808	ACP 1408.1 and Work Order Screening Improvements	4/25/2007
SA 46247	SOER 02-04 Self Assessment	5/29/2007
SA 46257	Mechanical Maintenance Benchmarking for Relief Valve Test Bench	11/29/2007
SA 48037	Conduct of operations/operations fundamentals	Revision 0
SA 48470	NCAQ – Perform Benchmarking on I&C Human Performance Fundamentals	12/18/2007
SA 48471	NCAQ – Perform Benchmarking of I&C Work Management, Scheduling, and Implementation	12/18/2007

## **AUDITS, ASSESSMENTS AND SELF-ASSESSMENTS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
SA 48472	NCAQ – Perform Benchmarking of Electrical Safety and Flash Protection	12/18/2007
SA 48474	NCAQ – Perform Benchmarking of Scaffold Control	12/18/2007
PDA-08-011	2008 Radiation Protection Assessment	4/4/2008
PDA-08-012	Systems Engineering	4/30/2008
PDA-08-022	Corrective Actions	7/2/2008
PDA-08-025	Corrective and Preventive Maintenance	8/14/2008
PDA-08-040	Corrective Action Program	12/29/2008
PDA-09-001	Security	1/27/2009
PDA-09-005	Radiation Protection	4/20/2009
PDA-09-013	Maintenance Planning and Scheduling	5/14/2009
NG-07-0467	Quality Assurance Finding—“Corrective Program Deficiency Repetitive Failure to Provide Satisfactory Corrective Action” CAP Problem Area Assessment	5/29/2007  August 2007

## **CONDITION REPORTS GENERATED DURING INSPECTION**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
CAP 067083	NCAQ--2 CAPs Incorrectly Pre-Screened for IST	5/7/2009
CAP 067100	NCAQ—ACE OE Review Quality	5/7/2009
CAP 067237	Inconsistent use of Root Cause Evaluation Process	5/14/2009
CAP 067330	NRC PI&R Inspection—Trending Issues	5/19/2009
CAP 067331	NRC PI&R Inspection ACE Quality Issues	5/19/2009
CAP 067361	PI&R Identified Issue—CAP 63613 Classification as NCAQ Questioned	5/20/2009
CAP 067376	PI&R Inspection Observation—Maintenance Self-Assessments	5/20/2009
CAP 067378	NRC PI&R Inspection Observations—DPO Process	5/20/2009
CAP 067398	PI&R Issue, CAP 58355 Did not have Causal Analysis of Switch Failure	5/20/2009
CAP 067412	NRC P&IR Concerns with D River Water Pump Mounting	5/20/2009
CAP 067433	NRC PI&R Inspection—Corrective Action Not Performed per CA50628	5/21/2009
CAP 067440	NRC PI&R Inspection Operator Burden	5/21/2009
CAP 067441	NRC PI&R Inspection—ECP “Out of Scope” Investigations	5/21/2009

## MISCELLANEOUS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
EMA A96711	1P117D 'D' RWS Pump Mounting Base Anchor Bolts	Revision 0
CAL-IELP-M92-106	Seismic-Stress Analysis of Johnston Vertical Pump (25 NLC-1 Stage)	Revision 0
BECH-C016	Drawing-Standard Details Equipment Foundation Schedule	Revision 21

## Work Orders

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
CWO A80062	Replace 1P117D Pump-Indicated Degraded Condition	9/22/2008
CWO A96711	1P117D-Pull Pump-Repair Pump-Return Pump to Original Location	4/7/2009

## Department Roll-Up Meeting Reports

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
3Q2008	DAEC Station DRUM Report	12/18/2008
3Q2008	DAEC Chemistry/Environmental DRUM Report	11/20/2008
3Q2008	DAEC Radiation Protection DRUM Report	11/18/2008
3Q2008	DAEC Operations DRUM Report	11/12/2008
3Q2008	DAEC Training DRUM Report	11/3/2008
3Q2008	DAEC Maintenance DRUM Report	11/21/2008
3Q2008	DAEC Engineering DRUM Report	11/19/2008
4Q2008&1Q2009	DAEC Radiation Protection DRUM Report	4/28/2009
4Q2008&1Q2009	DAEC Training DRUM Report	4/29/2009
4Q2008&1Q2009	DAEC Maintenance DRUM Report	4/30/2009
1Q2009	DAEC Engineering DRUM Report	5/10/2009

## LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
AR	Action Request
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CAQ	Condition Adverse to Quality
CWO	Corrective Work Order
DPO	Differing Professional Opinion
DRP	Division of Reactor Projects
DRUM	Department Roll-up Meeting
ECP	Employee Concerns Program
EDG	Emergency Diesel Generator
ESW	Emergency Service Water
GAR	General Action Request
HELB	High Energy Line Break
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IN	Information Notices
IP	Inspection Procedure
IST	Issue Screening Team
LER	Licensee Event Report
LPCI	Low Pressure Coolant Injection
MG	Motor-Generator
MOV	Motor Operated Valves
MPPF	Maintenance Preventable Functional Failure
MRC	Management Review Committee
NCV	Non-Cited Violation
NOS	Nuclear oversight
NRC	U.S. Nuclear Regulatory Commission
OE	Operating Experience
PARS	Publicly Available Records
PM	Preventive Maintenance
RCE	Root Cause Evaluation
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
RPS	Radiation Protection Specialist
RPS	Reactor Protection System
RWS	River Water Supply
SCAQ	Significant Condition Adverse to Quality
SCWE	Safety-Conscious Work Environment
SDP	Significance Determination Process
SFP	Spent Fuel Pool
USAR	Updated Safety Analysis Report
WO	Work Order