

May 10, 2007

Mr. Gary Van Middlesworth  
Vice-President  
Duane Arnold Energy Center  
3277 DAEC Road  
Palo, IA 52324-9785

SUBJECT: DUANE ARNOLD ENERGY CENTER  
NRC PROBLEM IDENTIFICATION AND RESOLUTION  
INSPECTION REPORT NO. 05000331/2007006

Dear Mr. Van Middlesworth:

On April 20, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed a baseline team inspection at your Duane Arnold Energy Center. The enclosed report documents the inspection findings, which were discussed on April 20 with Mr. John Bjorseth and other members of your staff.

The inspection examined activities conducted under your license as they relate to the identification and resolution of problems, and your compliance with the Commission's rules and regulations, and with the conditions of your operating licenses. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

On the basis of the samples selected for review, there were no findings of significance identified during the inspection. The team concluded that, in general, problems were properly identified, evaluated, and resolved within the problem identification and resolution program. However, several examples of minor problems were identified, including several issues related to trending and the premature closure of a corrective action program activity before completion of all associated actions. In addition, although you have taken appropriate programmatic corrective actions to address a substantive cross-cutting issue in the area of human performance from 2005, issues identified by the NRC in the first quarter of 2007 indicate the need for additional effort to ensure the long-term effectiveness of those actions. These issues, which included instances of inadequate oversight of vendor activities, inadequate pre-job briefings, and poor inter-group coordination of work activities, were recently documented in Inspection Report 050002007002, the first quarter 2007 integrated inspection report.

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Sincerely,

**/RA/**

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

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

Enclosure: Inspection Report 05000331/2007006  
w/Attachment: Supplemental Information

cc w/encl: J. Stall, Senior Vice President, Nuclear and Chief  
Nuclear Officer  
R. Helfrich, Senior Attorney  
M. Ross, Managing Attorney  
W. Webster, Vice President, Nuclear Operations  
M. Warner, Vice President, Nuclear Operations Support  
R. Kundalkar, Vice President, Nuclear Engineering  
J. Bjorseth, Site Director  
D. Curtland, Plant Manager  
S. Catron, Manager, Regulatory Affairs  
Chief Radiological Emergency Preparedness Section,  
Dept. Of Homeland Security  
D. McGhee, State Liaison Officer

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R. Helfrich, Senior Attorney  
M. Ross, Managing Attorney  
W. Webster, Vice President, Nuclear Operations  
M. Warner, Vice President, Nuclear Operations Support  
R. Kundalkar, Vice President, Nuclear Engineering  
J. Bjorseth, Site Director  
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Letter to Gary Van Middlesworth from Bruce L. Burgess dated May 10, 2007

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NRC PROBLEM IDENTIFICATION AND RESOLUTION  
INSPECTION REPORT NO. 05000331/2007006

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-331

License No: DPR-49

Report No: 05000331/2007006

Licensee: Florida Power and Light Energy Duane Arnold, LLC

Facility: Duane Arnold Energy Center

Location: Palo, Iowa

Dates: April 2-20, 2007

Inspectors: M. Kunowski, Project Engineer, Division of Reactor Projects  
(Team Leader)  
B. Jose, Engineering Inspector, Division of Reactor Safety  
J. Tapp, Reactor Engineer, Division of Reactor Projects  
M. Keefe, Human Factors Analyst, Office of Nuclear Regulatory  
Research

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000331/2007006; Florida Power and Light Energy Duane Arnold, LLC; on 4/02/2007 - 4/20/2007; Duane Arnold Energy Center; biennial baseline inspection of the identification and resolution of problems.

This report covered a two-week, baseline inspection of problem identification and resolution (PI&R) (Inspection Procedure 71152). The inspection was conducted by two regional projects inspectors, a regional engineering inspector, and a human factor analyst from the NRC headquarters Office of Nuclear Regulatory Research. No findings were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### Identification and Resolution of Problems

The team concluded that the licensee's program for the identification and resolutions of problems was functioning appropriately and had improved since the previous NRC PI&R team inspection conducted in 2005. The licensee was identifying plant problems at a low level. In 2005, 5151 corrective action program documents (CAPs—condition reports) were written for issues; in 2006, 6611 CAPs were written. However, in 2007, after completion of an extended refueling outage, a backlog of 800 corrective action program items to be completed represented a challenge to the station and problems with trending of issues were identified by the inspectors, as well as by station quality assurance and plant personnel. In the area of prioritization and evaluation of issues, the licensee's overall efforts were effective and the licensee's recent institution of department-specific corrective action program coordinators represented a specific good effort to improve department and plant performance in the corrective action program area. In the area of effectiveness of corrective actions, the inspectors concluded that the station's overall efforts were effective; however, problems with closure of a corrective action program item before completion of all associated actions and an increase in human performance problems indicated the need for increased management attention. The licensee's use of operating experience and self-assessments and audits was found to be appropriate. The inspectors identified minor instances where documentation of the bases for extended due dates and of actions completed in responses to CAPs and self-assessments and audits was missing. From record reviews and interviews conducted during this inspection, the inspectors concluded that workers at Duane Arnold felt free to input nuclear safety findings into the corrective action program.

#### **A. Inspector-Identified and Self-Revealed Findings**

None.

#### **B. Licensee-Identified Violations**

None.

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

#### 4OA2 Problem Identification and Resolution (PI&R)

##### a. Assessment of the Corrective Action Program

##### (1) Inspection Scope

The inspectors reviewed items selected across the NRC's cornerstones of safety to determine if problems were being properly identified, characterized, and entered into the corrective action program for timely and complete evaluation and resolution. Specifically, the inspectors selected and reviewed over 200 corrective action program documents generated since June 2005, when the previous NRC problem identification and resolution team inspection was conducted (Inspection Report (IR) 05000331/2005009). These documents included:

- condition reports (CAPs),
- corrective actions (CAs),
- condition evaluations (CEs),
- apparent cause evaluations (ACEs),
- root cause evaluations (RCEs),
- corrective actions to prevent recurrence (CAPRs),
- effectiveness reviews (EFRs), and
- procedure change requests (PCRs).

The inspectors also reviewed self-assessments of the radiation protection department and of the corrective action program. The results of the assessments were evaluated by comparing them to the inspectors' observations and findings.

The inspectors evaluated CAPs to determine the licensee's threshold for identifying problems and entering them into the corrective action program. To assist with the evaluation of corrective action program implementation, the inspectors toured the plant power block and attended daily meetings of the recently appointed Corrective Action Program Coordinators (CAPCOs) and daily meetings of the management CAP screening team. The inspectors also reviewed the licensee's efforts in trending of CAPs.

The inspectors also reviewed the following previous Non-Cited Violations to verify that the issues were adequately prioritized and evaluated and appropriate corrective actions were taken.

- 05000331/2005013-02, Failure to consider ampacity effects of high temperature conditions in the condenser bay and heater bay, (CAP038933).

- 05000331/2006002-01, Failure to ensure proper design control was maintained with the standby diesel generators, (CAP040648).
- 5000331/2006007-08, Failure to establish a testing program for molded case circuit breakers, (CAP041363).
- 05000331/2006007-06, Nonsafety-related charger used to charge a cell of a 125-Volt DC safety-related battery without proper electrical isolation, (CAP041099).
- 05000331/2006007-05, UFSAR table 8.2-1 had no documented basis, (CAP041395).
- 05000331/2006007-04, Electrical components downgraded from safety-related to nonsafety-related without appropriate isolation devices. (CAP041107 and CAP041731)
- 05000331/2006007-03, Inadequate torquing of 250-Volt DC and 48-Volt DC batteries' electrical connections, (CAP041156, CAP041422, and CAP041734).

In the 2006 mid-cycle performance review (documented in a letter dated August 31, 2006), the NRC closed out a substantive cross-cutting issue in the area of human performance. During the current inspection, the inspectors reviewed the continued effectiveness of the licensee's corrective actions for that issue and conducted a high-level assessment of the human performance area, station-wide and in engineering specifically. This assessment included a review of corrective action program documents and procedures, and interviews of personnel, including the design engineering manager, system engineering manager, an engineering quality review team member (who was also a system engineering supervisor), and the station human performance improvement coordinator.

Documents substantially reviewed by the inspectors are listed in the Attachment to this report. Completion of these interviews, observations, and record reviews constituted one inspection sample.

## (2) Assessment

### Identification of Issues

The inspectors concluded that, overall, the licensee was effective at identifying problems and entering them into the corrective action program. This was evidenced by the relatively few deficiencies identified by external groups (including the NRC) that had not been previously identified by the licensee. Licensee audits and assessments were of good depth and identified issues similar to those that were self-revealing or raised during the inspection. In 2005, a year with a refueling outage, the site generated 5151 CAPs; in 2006, with no refueling outage, 6611 CAPs were generated. As of late April 2007, with a refueling outage completed, 3156 CAPs had been generated. Discussions with plant staff and a review of CAPs indicated that station management emphasis on a low threshold for writing CAPs was responsible for the increase in the number of CAPs generated since 2005. With the emphasis on a low threshold and problems encountered during the recent extended refueling outage, a backlog of 800 corrective action program items awaiting completion represented a challenge to the station.



The recently created CAPCO position at Duane Arnold, based on a position implemented at Florida Power and Light's other nuclear plants, was filled with plant experienced individuals who had interviewed for the position and were responsible for the initial trend coding of new CAPs and recommending to the management CAP screening team the significance level and work group assignments for the CAPs. In addition, the CAPCOs were designated as the corrective action program interface with specific plant departments and for coordinating the quarterly department-specific department roll-up. From the interactions during the daily CAPCO meetings, the inspectors concluded that the CAPCOs were conscientious, knowledgeable individuals and that the meetings represented a good collegial and effective prescreening and trend coding of CAPs.

On trending in general, the previous NRC PI&R inspection team, in 2005 (IR 05000331/2005009), identified some weaknesses in this area that were attributed to low proficiency in the use of the then recently implemented fleet procedures and guidelines. During the current inspection, the inspectors noted while the quality assurance group (NOS—nuclear oversight) and plant groups, such as the performance improvement and radiation protection departments, have been effective in identifying possible trends, addressing identified trends, and addressing programmatic trending issues, additional effort by the station was needed. The transition to the corrective action program procedures and guidelines of the new fleet represents an added challenge to trending program improvements. Several inspector observations in the trending area are listed below:

- The quarterly department roll-up meeting (DRUM) is a major mechanism for department review of CAPs for trends. The inspectors identified that, as of early April 2007 -the second quarter of 2007, the DRUM report for engineering for the fourth quarter of 2006 had not yet been approved and issued.
- A backlog existed of about 250 CAPs awaiting trend coding by various work groups after completion of the associated causal evaluations.
- Since the mid-1990s (and during this inspection), repeated spurious control room alarms have occurred. However, only recently - partly in response to NOS finding - has a concerted effort to address this trend, which represented a possibly significant operator distraction and work-around, been undertaken. More than half of the corrective actions to address this issue have been completed and the remaining actions were scheduled to be completed by mid-2007.

#### Prioritization and Evaluation of Issues

The inspectors concluded that, overall, the licensee was effective at appropriately prioritizing and evaluating issues. The NCVs reviewed by the inspectors were appropriately entered into and dispositioned by the licensee's corrective action program.

For the ACEs and RCEs reviewed by the inspectors, the inspectors concluded that they were performed using systematic methods; the root causes, contributing causes, and apparent causes were determined adequately; and extent of condition reviews were performed appropriately. The level of detail in the ACEs and RCEs was commensurate with the significance of the issues and prior occurrences/knowledge of prior operating experiences were appropriately reviewed. For the minor issues listed below, the licensee took appropriate corrective action.

- RCE001038, "Unplanned HPCI LCO - Venting Event," dated April 17, 2006, did not have an extent of cause evaluation documented and the effectiveness review documentation lacked details.
- RCE001056, "B Recirculation MG Set Trip Due to Transformer 2T Primary Winding Failure," dated October 25, 2006, did not have extent of cause evaluation documented and the effectiveness review performed was inadequate.

In addition to these minor issues with specific RCEs, the inspectors noted that the licensee was inconsistent in documenting in the corrective action program justification for going beyond the default 30-day due date for completing evaluations (CEs, ACEs, and RCEs) and default 120-day due date for completing actions (CAs, Requests For Training (RFTs), Procedure Change Requests (PCRs)). This justification was specified in corrective action program guidelines. The licensee planned to issue a notice to plant staff reminding them of the program expectation for documenting due dates beyond the default values.

#### Effectiveness of Corrective Action

The inspectors concluded that, overall, the licensee has taken effective corrective actions to address identified problems. Several minor issues identified by the inspectors were discussed with the licensee and entered into the corrective action program.

- During the inspection, a CA that had been assigned to a work group to address a problem identified by NOS with management position qualification records went overdue. A CAP was written for the overdue item and the CA was subsequently closed out as complete several days later (another recent problem with untimely corrective actions is discussed in the first quarter 2007 integrated inspection report, IR 05000331/2007002). The inspectors reviewed the actions taken to complete the CA with a member of the work group and determined that only one of five actions in the original CA had actually been completed. The CA had been closed because the work group expected that the other four actions would be completed shortly.
- In addition to the problem NOS identified with the qualification records, NOS identified discrepancies between the administrative procedure on records of qualifications and the related Technical Specification and

national standard. A CAP was written by NOS for this problem and the CAP for qualification records was subsequently closed to the CAP on the procedure problems. The inspectors noted, however, that although a CA had been written to address the qualification records, no corrective action had been written to address the procedure problems.

For the inspectors' review of actions taken to make high-level improvements in the human performance area, the inspectors concluded that the licensee was actively involved in encouraging the use of human performance tools and guidelines. The station's administrative procedure on human performance effectively provided tools to capture human performance information and trend human performance issues. The station was actively benchmarking in the human performance area and had cultivated an environment which promoted continuous learning in this area. Although the human performance improvement efforts appeared good from the inspectors' high level assessment, human performance problems have occurred recently. The first quarter 2007 integrated inspection report (IR 05000331/2007002) identified five findings, in three cornerstones, that had cross-cutting aspects in the human performance area.

b. Assessment of the Use of Operating Experience

(1) Inspection Scope

The inspectors reviewed completed licensee evaluations of industry operating experience from the past two years to determine if industry experience was being promptly reviewed by appropriately qualified individuals at Duane Arnold and actions, either CAs or program enhancements, were being taken to address those issues that were applicable to Duane Arnold. In addition, the inspectors interviewed the individual recently assigned to coordinate the operating experience program and the individual previously assigned as coordinator.

(2) Assessment

No findings were identified by the inspectors. The licensee was using appropriately qualified individuals to promptly evaluate industry experience. Corrective actions and program enhancements were entered into the corrective action program, as necessary, to address those items applicable to Duane Arnold. The inspectors did observe that documentation for one completed evaluation of the potential for waterhammer in the reactor core isolation cooling system exhaust line during a loss-of-coolant accident provided only limited explanation as to why the issue was not a concern at Duane Arnold. This observation was discussed with the engineer who documented the evaluation and with licensee management who wrote a CAP to further evaluate the observation and to revise the original evaluation.

c. Assessment of Self-Assessments and Audits

(1) Inspection Scope

The inspectors reviewed the corrective action program disposition of issues from quality assurance (NOS) activities and from recent self-assessments of the radiation protection department and of the corrective action program. The purpose of the inspectors' review was to determine if the licensee's audit and self-assessment programs were functioning to identify issues and enter them into the corrective action program for appropriate prioritization, evaluation, and correction.

(2) Assessment

The licensee's use of audits and self-assessments was appropriate for the identification, evaluation, and correction of issues. For the minor issues listed below, the licensee took the appropriate corrective action.

- An effectiveness review completed as part of a corrective action program self-assessment was not documented in the self-assessment report. The effectiveness review had been performed to evaluate corrective actions written in response to an NOS audit on the corrective action program.
- Corrective action program documentation for the completed resolution of inappropriate control of radiation protection operator aids identified during an NOS audit lacked explanation of the resolution of one of the three issues identified. As part of the CAP written to address the inspectors' observation, the licensee verified that the subject uncontrolled operator aid was not being used in the plant.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope

Approximately 17 individuals were interviewed from various departments about their willingness to raise nuclear safety issues. The individuals were selected randomly based on work schedule, and included supervisors and non-supervisors from operations, training, security, quality assurance, and engineering. In addition, the current Employee Concerns Program (ECP) manager, the quality assurance department manager, the performance improvement department manager, the human resources manager, and the Site Vice-President were interviewed. Selected documents were also reviewed to assess the safety-conscious work environment (SCWE) at the site.

(2) Assessment

(i) Willingness to Raise Nuclear Safety Issues

All the individual interviewed indicated they did not have any hesitancy in raising nuclear safety issues. Most felt that their management was receptive

to concerns, and were willing to address them. Most of the interviewees also stated that if they were not satisfied with the response from their immediate supervisor, they would feel free to escalate the concern. In most cases, interviewees have raised issues and concerns through their supervisors and then followed the supervisor's recommendation, which often involved entering the issue into the corrective action program. All the individuals interviewed expressed positive experiences for bringing issues to their supervisors and could name several other avenues for raising concerns. The majority of interviewees explained that going through their supervisor and using the corrective action program had been effective in their experience. Therefore, they have not had the need to use other avenues.

(ii) Corrective Action Program

Regarding the corrective action program, many of the interviewees stated that the process for writing a CAP via a computer was very cumbersome, which had increased the difficulty of and time required for entering issues, even though everyone had received training on it. Although they would not hesitate to enter an issue they believed to be related to nuclear safety, many indicated they or their co-workers may be less inclined to enter lower level issues into the program. Instead, they might go to their supervisor, ask another employee more familiar with the system to enter the issue for them, or write down the issue on paper and forward it to the performance improvement department, which oversees the corrective action program.

On resolution of issues entered in the corrective action program, some individuals explained that although the program was effective at resolving nuclear safety issues, they did not have as much confidence in the program's handling of lower level (non-nuclear safety) issues. This included the timeliness of resolution as well as closing of issues for trending purposes. For some issues not related to nuclear safety, some workers had felt frustration at the amount of time taken for resolution. Several individuals also stated that sometimes they did not agree with closing issues for trending purposes, without further actions taken. They explained that although there were probably valid reasons for the closure of some of their issues to trending, they did not receive any explanation on the basis of the closure and often, if their concern was equipment-related, they had to go into the plant to see if and how their concern was resolved.

Regarding being able to track an issue entered into the corrective action program and following up on how it was resolved, some of the interviewees explained that the system allowed the originator of the issue to do so and that they had tracked issues in the past. However, a few individuals stated that the system did not allow for issue tracking and that they were not aware of what happened to some of the issues they had entered.

Overall, the individuals interviewed were willing to enter issues they believe to be related to nuclear safety into the corrective action program and had confidence in the effectiveness of resolution of such issues. However, some felt less willing to raise and/or had less confidence in the resolution of lower level issues.

(iii) Employee Concerns Program

All the interviewees were aware of the ECP. Most explained that they have heard about the program through various means, such as posters, ECP mailers, presentations, and discussion by supervisors/managers at meetings. But most of those interviewed did not have any personal experience with the ECP because they had not needed to use it. Most interviewed either had no opinion because of lack of personal experience with the program or expressed an overall favorable impression of the program. All of those who responded that they had brought issues to the ECP indicated that the experience was positive and that they would have no issue using the ECP again if needed. Everyone interviewed also stated that they had not heard of any issues dealing with breaches of confidentiality.

During the review of the ECP, the inspectors became aware of an instance where an individual had been disciplined for raising concerns (non-nuclear safety concerns) outside his/her chain of command. The inspectors confirmed that the concerns were not nuclear safety-related and concluded that the issue had been appropriately entered into the ECP, the licensee's recently completed investigation of the issue had been thorough, and the proposed actions were appropriate. Toward the end of the inspection, site management had already implemented some of the proposed actions.

The current ECP manager was relatively new to the position and had been working to increase awareness of the program by making himself and the program visible throughout the site. Everyone interviewed stated that they knew who the ECP manager was, and expressed that he was well liked and approachable. In addition, to increase confidence in the program, the ECP manager had been accepting and attempting to resolve almost all issues received, even those that were not related to nuclear safety.

Overall, the majority of the individuals interviewed had no personal experience with the ECP but were aware of the program. Many had positive impressions of the program. Everyone said that it was an acceptable alternate avenue for raising concerns and that they would have no problem using it if need be.

(iv) Retaliation

When asked if there have been any instances where individuals experienced retaliation or other negative reaction for raising issues, all individuals interviewed stated that they had not experienced nor heard of any recent instances of retaliation, harassment, intimidation or discrimination at Duane Arnold. The inspectors concluded that the processes in place to prevent these instances have been successfully implemented.

(v) Safety Culture Survey

The site's latest safety culture survey, which was conducted in January 2007, showed very positive results across all plant departments. At the time of the

inspection, the management team was in the process of rolling out the results to the staff and will develop action plans to address specific areas for concern.

4OA6 Meetings

.1 Exit Meeting

On April 20, 2007, the inspectors presented the preliminary inspection results to M. J. Bjorseth and other Duane Arnold personnel. The inspectors stated that they had reviewed proprietary and confidential information during the inspection but that that information would not included in the inspection report.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

J. Bjorseth, Site Director  
D. Blair, Operations Manager  
D. Brigl, ECP Investigator  
K. Carlson, Corrective Action Program Owner  
D. Curtland, Plant Manager  
S. Catron, Licensing Manager  
S. Haller, Site Engineering Director  
G. Hawkins, Engineering Systems Manager  
B. Hopkins, Equipment Reliability Engineer  
S. Inghram, Engineering Systems Supervisor  
B. Kindred, Security Manager  
M. Lingenfelter, Design Engineering Manager  
D. Lowens, Oversight Manager  
J. Morris, Training Manager  
R. Murell, Licensing Engineer  
G. Pry, Maintenance Manager  
W. Simmons, Performance Improvement Department Manager  
P. Sullivan, Emergency Preparedness Manager  
L. Swenzinski, Licensing Engineer  
G. Van Middlesworth, Site Vice-President  
J. Windschill, Chemistry and Radiation Protection Manager

#### Nuclear Regulatory Commission

B. Burgess, Chief, Reactor Projects Branch 2



## ITEMS OPENED, CLOSED, AND DISCUSSED

None.

## LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion of a document on this list does not imply that NRC inspectors reviewed the entire documents, but, rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. In addition, inclusion of a document on this list does not imply NRC acceptance of the document, unless specifically stated in the body of the inspection report.

### Corrective Action Program Documents

ACE001476; Effectiveness Review Indicates Corrective Actions for RCE 1015 Were Ineffective; July 19, 2005  
ACE001519; NOS Fleet Assessment of System Engineering - Below Expectations (NOS Red); October 31, 2005  
ACE001585; NOS Determined Design Engineering Program Below Expectations; March 17, 2006, and Revision 1, May 18, 2006  
ACE001607; DAEC Breaker Testing Program; February 1, 2006  
ACE001699; Auto Scram During NS550002; March 3, 2007  
CA042560; NOS Determined Design Engineering Program Below Expectations; March 17, 2006  
CA044161; Inappropriate Control of Radiation Protection Operator Aids; October 5, 2006  
CA044175; Revise Procedures and Manuals Governing CAP Trending; October 6, 2006  
CA044177; Revise ACP 117.9, "Human Performance Program"; October 6, 2006  
CA044178; Implement Quarterly Site-Wide CAP Trend Analysis and Reporting; October 6, 2006  
CA044186; HPP 3103.02 Does Not Designate Control Point Logs as QA Records; October 9, 2006  
CA044365; Coordinate Training, PID, and Information Management Action to Develop and Implement Trend Reports; October 27, 2006  
CA044398; Potential Negative Trend in CAP Initiation; November 2, 2006  
CA044529; Determine Suitable Location for T.S. 3.8.1, Required Action B.3 Approach; November 17, 2006  
CA044723; Calculate Acceptable Min Wall Thickness for KBF-1-18-P06, December 13, 2006  
CA044788; Revise ACP 114.5 to Strengthen Due Date Extension Documentation; December 21, 2006  
CA045264; CAP FSA: SCAQ Definition in ACP 114.5 Is Inaccurate; February 27, 2007  
CA045443; Adequacy of ACP 113.2 to Satisfy ANSI 3.1/Tech Spec Qual Requirements; April 19, 2007  
CAP037435; Trend of Control Valve Failures; August 9, 2005  
CAP038609; 4Q05 NOS Assessment of Systems - Plant Surveillance Data Not Being Entered; October 28, 2005  
CAP038610; 4Q05 NOS Assessment of Systems - System Eng. Duties; October 28, 2005  
CAP038612; 4Q05 NOS Assessment of Systems - System Health Reports; October 28, 2005  
CAP038613; 4Q05 NOS Assessment of Systems - Below Expectations (NOS Red); October 28, 2005  
CAP038933; Heater Bay and Condenser Bay Cable Ampacities

CAP038955; Inadequate 50.59 Evaluation 98-11 (2005 NRC 50.59/Mod Inspection); November 17, 2005  
CAP040161; RP DRUM - Increased Trend of CAPs with Type Planning in 4<sup>th</sup> Qtr; February 3, 2006  
CAP040403; NOS Determined Design Engineering Program Below Expectations; February 15, 2006  
CAP040648; Standby Diesel Generator Design Control Issues; February 28, 2006  
CAP041099; Single Cell Charging for 1D1 Issues; March 22, 2006  
CAP041114; RCIC Pump Suction Valve's Automatic Control Issues; March 22, 2006  
CAP041363; Westinghouse MCCB Qualified Life Issues; April 11, 2006  
CAP041395; Basis for UFSAR Table 8.2-1 Not Available; April 6, 2006  
CAP041731; Separation of Safety and Non-Safety Electrical Features; April 20, 2006  
CAP041156; Battery Inter-Cell Connector Torque Discrepancy; March 24, 2006  
CAP042112; RP DRUM - Increased Trend of CAPs with Direct Cause of Work Planning; May 10, 2006  
CAP042561; Some CAPs Not Trended IAW CTCM [In Accordance With CAP Trend Code Manual] Resulting in Potentially Missed Performance Trend; June 5, 2006  
CAP042571; Degrading Performance in the Administration of the Corrective Action Program; June 5, 2006  
CAP042760; The Site DRUM Process Requires Enhancement; June 16, 2006  
CAP043430; Potential Relief Valve Trends; July 31, 2006  
CAP043806; Conflicts in Performance Improvement Procedures/Requirements for Trending; August 23, 2006  
CAP044611; Inappropriate Control of Radiation Protection Operator Aids; October 3, 2006  
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#### Spurious Alarms

CA044535; Actions to Correct Spurious Alarms Are Not Adequately Tracked; November 20, 2006  
CAP045162; Multiple Annunciator Alarms During RCIC Run; November 1, 2006  
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CAP045640; Spurious Alarms While Performing Annunciator Checks; November 28, 2006  
CAP046260; Spurious Annunciators; January 6, 2007  
CAP046423; Spurious Annunciators During Testing With CAPs Closed to Trend; January 16, 2007  
CAP046434; Investigate Potential Trend in Alarm Response Activity Code; January 16, 2007  
CAP048285; Trend of Events That Involved Communication Lapses; March 10, 2007

CAP048839; Spurious Alarms During Panel Checks; April 4, 2007  
CAP049085; Sympathy Annunciators Received During Shiftly Checks; April 14, 2007  
CAP049091; Spurious Alarms During Annunciator Checks; April 15, 2007  
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#### Corrective Action Program Documents Generated Because of the Inspection

CA045727; Update RCE 1056 With Recent Information; April 16, 2007  
CAP048845; Fourth Quarter Engineering DRUM Report Not Issued in a Timely Manner; April 5, 2007  
CAP048860; There Is Currently a Backlog of CAPs Waiting To Be Trended; April 5, 2007  
CAP048879; OE Evaluation Needs Additional Info/Explanation; April 6, 2007  
CAP048884; NAPP 4.2.4 States We Have an ECP Oversight Committee, However, In Practice, It Is Unclear If a Committee Actually Exists  
CAP048948; The Employee Concerns Program (ECP) Does Not Provide Detailed Program Training to New Employees  
CAP049120; EFR 44574 Only Verifies Replacement; April 17, 2007  
CAP049140; CA45443 Closed Without Action Being Entirely Completed; April 17, 2007  
CAP049142; Condition Evaluation From CAP 46795/46796 Did Not Address All Issues; April 17, 2007  
CAP049153; RCE Extent of Cause Not Documented; April 18, 2007  
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NOS Audit PDA-06-022; Conduct of Radiation Protection; October 5, 2006  
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#### Other Documents

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ACP 114.4; Corrective Action Program; Revision 22  
ACP 114.5; Action Request System; Revision 53  
ACP 114.8; Action Request Trending; Revision 6  
ACP 117.11; Human Performance Tools; Revision 6  
ACP 1201.5; Engineering Human Performance Procedure; Revision 2  
Apparent Cause Evaluation Manual; Revision 7  
CAP Trend Code Manual; Revision 6  
CMP 2007-002 (Revision 3) - PID Expanded CAPCOs (Change Management Plan for the Duane Arnold Performance Improvement Department Implementation of Corrective Action Program Coordinators); April 16, 2007  
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HR-0001; Disciplinary Action  
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NAP-424; Employee Concerns Program; January 3, 2007  
NP-807; Nuclear Policy, Foundations of Quality; Revision 3, February 24, 2004  
Operability Recommendation OPR 00303; Operability of EDGs 1G021 & 1G031; Revision 1,  
March 10, 2006  
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Root Cause Evaluation Manual; Revision 10  
QF-1020-03; DAEC Supervisor Development Training Program 60173  
OTH006934-006941; Cultural Survey Solutions Team CAPS; July 18, 2005

## LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ACP	Administrative Control Procedure
ADAMS	Agency Wide Access Management System
AR	Action Request
CA	Corrective Action
CAP	Condition Report
CE	Condition Evaluation
CFR	Code of Federal Regulations
DAEC	Duane Arnold Energy Center
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
DRUM	Department Roll-Up Meeting
ECP	Employee Concerns Program
FIN	Finding
IMC	Inspection Manual Chapter
IP	Inspection Procedure
NCV	Non-Cited Violation
NOS	Nuclear Oversight (Quality Assurance)
NRC	Nuclear Regulatory Commission
OE	Operating Experience
OPR	Operability Recommendation (Operability Determination)
PI&R	Problem Identification and Resolution
PMT	Post-Maintenance Testing
RCE	Root Cause Evaluation
SCWE	Safety-Conscious Work Environment
SDP	Significance Determination Process
TS	Technical Specification
URI	Unresolved item