



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
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LISLE, IL 60532-4352

May 3, 2017

Mr. Dean Curtland
Director of Site Operations
NextEra Energy Duane Arnold, LLC
3277 DAEC Road
Palo, IA 52324-9785

**SUBJECT: DUANE ARNOLD ENERGY CENTER—NRC PROBLEM IDENTIFICATION AND
RESOLUTION INSPECTION REPORT 05000331/2017007**

Dear Mr. Curtland:

On April 25, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed a Problem Identification and Resolution (PI&R) inspection at your Duane Arnold Energy Center (DAEC). The enclosed inspection report documents the inspection results, which were discussed at an interim exit meeting on March 24, 2017, and an exit teleconference on April 25, 2017, with you and other members of your staff.

The inspectors 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.

On the basis of the samples selected for review, the team concluded that the Corrective Action Program (CAP) at DAEC was generally effective in identifying, evaluating and correcting issues. The licensee had a low threshold for identifying issues and entering them into the CAP. Through consideration of risk and consequence, the significance of the issues and priority for issue evaluation and resolution were determined. Corrective actions were generally implemented in a timely manner, commensurate with their safety significance. Operating experience was entered into the CAP when appropriate and evaluated according to procedure. The use of operating experience was integrated into daily activities and found to be effective in preventing similar issues at the plant based on the samples we reviewed. In addition, self-assessments and audits were conducted at appropriate frequencies with sufficient depth and details for all departments. The assessments were thorough and effective in identifying site performance deficiencies, programmatic concerns, and improvement opportunities. On the basis of the interviews conducted, the inspectors did not identify any impediment to the establishment of a safety conscious work environment at DAEC. Licensee staff was aware of and generally familiar with the CAP and other station processes, including the Employee Concerns Program, through which concerns could be raised. The team determined that your station's performance in each of these areas supported nuclear safety.

Based on the results of this inspection, the NRC has identified an issue that was evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that a violation is associated with this issue. Because the licensee initiated condition reports (CRs) to address the issue, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2a of the Enforcement Policy. The NCV is described in the subject inspection report.

If you contest the violation or significance of the 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 copies to the Regional Administrator, Region III; the Director, Office of Enforcement; and the NRC Resident Inspector at the DAEC.

If you disagree with the cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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 U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III, and the NRC Resident Inspector at the DAEC.

This letter, its enclosure, and your response, (if any), will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Karla Stoedter, Chief
Branch 1
Division of Reactor Projects

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

Enclosure:
Inspection Report 05000331/2017007

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Letter to Dean Curtland from Karla Stoedter dated May 3, 2017

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000331/2017007

Licensee: NextEra Energy Duane Arnold, LLC

Facility: Duane Arnold Energy Center

Location: Palo, IA

Dates: March 6, through April 25, 2016

Team Leader: R. Ng, Project Engineer

Inspectors: C. Philips, Project Engineer
A. Dunlop, Senior Reactor Inspector
M. Jones, Reactor Inspector

Approved by: K. Stodter, Chief
Branch 1
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

Inspection Report 05000331/2017007; 03/06/2017 – 04/25/2017; Duane Arnold Energy Center; Identification and Resolution of Problems.

This report covers an 8–week period of inspection by four regional inspectors. A Green finding was identified by the inspectors. The findings involved a non-cited violation (NCV) of the U.S. Nuclear Regulatory Commission (NRC) requirements. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, “Significance Determination Process,” dated April 29, 2015. Cross-Cutting aspects are determined using IMC 0310, “Aspects Within the Cross-Cutting Areas,” dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC’s Enforcement Policy, dated November 1, 2016. The NRC’s program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG–1649, “Reactor Oversight Process,” Revision 6, dated February 2016.

Identification and Resolution of Problems

On the basis of the samples selected for review, the team concluded that the Corrective Action Program (CAP) at Duane Arnold Energy Center (DAEC) was generally effective in identifying, evaluating and correcting issues. The licensee had a low threshold for identifying issues and entering them into the CAP. Through consideration of risk and consequence, the significance of the issues and priority for issue evaluation and resolution were determined. Corrective actions were generally implemented in a timely manner commensurate with their safety significance. Operating experience was entered into the CAP when appropriate and evaluated according to procedure. The use of operating experience was integrated into daily activities and found to be effective in preventing similar issues at the plant based on the samples we reviewed. In addition, self–assessments and audits were conducted at appropriate frequencies with sufficient depth and details for all departments. The assessments were thorough and effective in identifying site performance deficiencies, programmatic concerns and improvement opportunities. On the basis of the interviews conducted, the inspectors did not identify any impediment to the establishment of a safety conscious work environment at DAEC. Licensee staff was aware of and generally familiar with the CAP and other station processes, including the Employee Concerns Program, through which concerns could be raised. The team determined that the licensee’s performance in each of these areas supported nuclear safety.

Although implementation of the CAP was determined to be effective overall, the inspectors identified several issues that represented potential weakness of the program.

Cornerstone: Barrier Integrity

Green. The inspectors identified a finding and an associated non-cited violation of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(f)(1) for the licensee’s failure to scope in multiple check valves of the main steam isolation valve leakage treatment system (LTS) into the Inservice Testing (IST) Program. Specifically, these valves were credited to mitigate the consequences of the main steam isolation valve leakage following a loss of coolant accident but they were not scoped into the IST program. Since the licensee made a commitment to the NRC to put these valves into the IST program as part of License Amendment 207, this issue is also a Deviation in accordance with the NRC Enforcement Policy. The licensee put this issue into the CAP

as Action Requests (ARs) 2193481 and 2193482 and planned to include these valves in the full IST program.

This performance deficiency was more than minor because if left uncorrected, there was a potential to lead to a more significant safety concern. Specifically, these valves that were credited to mitigate the consequence of an accident were not tested in accordance with the IST program. The finding screened as very low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, and heat removal components, nor did it involve an actual reduction in function of hydrogen igniters in the reactor containment. The inspectors determined this finding affected the cross-cutting area of problem identification and resolution in the aspect of evaluation because the licensee justified that the valves be put into the augmented IST program since they were non-code components. In addition, the licensee did not re-scope these components into the IST program when 10 CFR 50.55(f)(1) was changed in 1999. This misconception continued when the licensee discovered several valves of the LTS were not in the IST program scope in 2015. [P.2] (Section 4OA2.1.b.2.ii)

REPORT DETAILS

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution (71152B)

This inspection constituted one biennial sample of problem identification and resolution (PI&R) as defined by Inspection Procedure 71152, "Problem Identification and Resolution." Documents reviewed are listed in the Attachment to this report. Note that the licensee's computer program tracks condition reports (CRs) as action requests (ARs).

.1 Assessment of the Corrective Action Program Effectiveness

a. Inspection Scope

The inspectors reviewed the procedures and processes that described the CAP at DAEC to ensure, in part, that the requirements of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," were met. The inspectors observed and evaluated the effectiveness of meetings related to the CAP, such as the Management Review Committee meeting and the Department Corrective Action Review Board meeting. Selected licensee personnel were interviewed to assess their understanding of, and their involvement in, the CAP.

The inspectors reviewed selected CRs across all seven Reactor Oversight Process cornerstones to determine if problems were being properly identified and entered into the licensee's CAP. The majority of the risk-informed samples of CRs reviewed were issued since the last NRC biennial PI&R inspection completed in May 2015. The inspectors also reviewed selected issues that were more than five years old.

The inspectors assessed the licensee's characterization and evaluation of the issues and examined the assigned corrective actions. This review encompassed the full range of safety significance and evaluation classes, including root cause evaluations, apparent cause evaluations and condition evaluations. The inspectors assessed the scope and depth of the licensee's evaluations. For issues that were characterized as significant conditions adverse to quality, the inspectors evaluated the licensee's corrective actions to prevent recurrence and for issues that were less significant, the inspectors reviewed the corrective actions to determine if they were implemented in a timely manner commensurate with their safety significance.

The inspectors performed a 5-year review of the safety-related control building chiller system based on input from the resident staff. The system is part of the control building heating, ventilation and air conditioning system and its function is to provide chilled water for temperature control in the building. This ensures operability of plant equipment and maintains accessibility and habitability of the building, including the control room. The primary purpose of this review was to determine whether the licensee was monitoring and addressing performance issues of the control building chiller system. The inspectors performed walkdowns, as needed, to verify the resolution of issues.

A 5-year review of the instrument air system was also performed to assess the licensee's efforts in monitoring the effectiveness of maintenance. Although this system

is non safety related, its failure would adversely affect plant operation and require operator intervention. The system is currently a Maintenance Rule (a)(1) system that is in the monitoring phase of the (a)(1) action plan. The inspectors performed walkdowns, as needed, to verify the resolution of issues.

The inspectors examined the results of self-assessments of the CAP completed during the review period. The results of the self-assessments were compared to self-revealed and NRC-identified findings. The inspectors also reviewed the corrective actions associated with previously identified NCVs and findings to determine whether the station properly evaluated and resolved those issues. The inspectors also performed walkdowns, as necessary, to verify the resolution of the issues.

b. Assessment

(1) Identification of Issues

Based on the results of the inspection, the inspectors concluded that DAEC was generally effective in identifying issues at a low threshold and entering them into the CAP. The inspectors determined that problems were normally identified and captured in a complete and accurate manner in the CAP. The station was appropriately screening issues from both NRC and industry operating experience at an appropriate level and entering them into the CAP when applicable to the station. The inspectors also noted that deficiencies were identified by external organizations (including the NRC) that had not been previously identified by licensee personnel. These deficiencies were subsequently entered into the CAP for resolution.

The inspectors determined that the licensee was generally effective at trending low level issues to prevent larger issues from developing. The licensee used the CAP to document instances where previous corrective actions were ineffective or were inappropriately closed.

The inspectors performed a 5-year review on the control building chiller systems. As part of this review, the inspectors interviewed the current system engineer, reviewed CRs, critical equipment failure evaluations and condition evaluations. In addition, the inspectors performed a system walkdown to assess the material condition of the system and surrounding area. The inspectors concluded that control building chiller system related concerns were identified and entered into the CAP at a low threshold, and concerns were resolved in a timely manner commensurate with their safety significance.

i) Observation

Declining Rate of Identification

The inspectors review the CR generation rate for the last five years and noted a steady decline over this period. Specifically, there were over 9,100 CRs generated in 2012 compared with only about 6,600 generated in 2016, a 28 percent drop. The most significant decline was from 2014 to 2016 when a 27 percent drop was observed. Considering the impact of an outage year to a non-outage year and the change in how the licensee classified routine work activities as non-corrective action items, the inspectors still observed an 11 percent drop in identification rate.

As documented in the pre-inspection self-assessments, the licensee had also recognized this declining trend and had taken steps to address this issue. The inspectors recognized that there may be multiple reasons for this issue such as: organizational change, staff reduction, backlog reduction, etc. Based on the samples reviewed, both low and high safety significance issues were in the CAP. Through interviews with the licensee's staff, the inspectors concluded that the staff were willing to bring up safety issue and write CRs. Therefore, this declining trend had not affected plant operations but the licensee needs to be cognizant of this trend before it affects the problem identification process.

ii) Findings

No findings were identified.

(2) Prioritization and Evaluation of Issues

Based on the results of the inspection, the inspectors concluded that the station was effective at prioritizing and evaluating issues commensurate with the safety significance of the identified issue, including an appropriate consideration of risk.

The inspectors determined that the Management Review Committee meetings and the Department Corrective Action Review Board meetings were generally thorough and maintained a high standard for evaluation quality. Members of the Management Review Committee discussed selected issues in sufficient detail and challenged each other regarding their conclusions and recommendations.

The inspectors determined that the licensee usually evaluated equipment functionality requirements adequately after a degraded or non-conforming condition was identified. In general, appropriate actions were assigned to correct the degraded or non-conforming condition.

i) Observations

Corrective Action Program Process Issues

During this inspection, the inspectors identified a number of CAP process issues at DAEC. For example, AR 1776321, "LPCI Manual Realignment from S/D Cooling in Mode Three," documented an issue related to the low pressure cooling injection operation. The licensee performed an apparent cause evaluation but did not assign corrective action to the apparent cause identified as required by the licensee's CAP procedure. A number of actions were assigned but were not corrective actions such that they could be changed or cancelled without as much oversight as corrective actions would receive. The licensee initiated AR 2192557, "NRC PI&R – Corrective Actions for ACE 1776321-05," to address this issue.

In another example, AR 1599839, "Replacement of 1VAC015A/B Cooling Coils Has Not Been Timely," documented timeliness issues with safety-related room cooler cooling coils replacement. One of the corrective action assignments to replace the coil was canceled without proper justification and approval from the Management Review Committee as required by the licensee's CAP procedure. The licensee initiated

AR 2192698, "NRC PI&R – LTCA 1599839–04 Cancelled Inappropriately," to address this issue.

Although these issues were minor procedure violations, the licensee needs to be vigilant and adhere to procedures in order to maintain the overall CAP effectiveness.

ii) Findings

Failure to Include Valves in the Inservice Testing Program

Introduction: The inspectors identified a finding of very low safety significance and an associated non-cited violation of 10 CFR 50.55a for the licensee's failure to scope multiple check valves into the IST Program. Since the licensee made a commitment to the NRC to put these valves into the IST program as part of License Amendment 207, this issue is also a Deviation in accordance with the NRC Enforcement Policy.

Description: On August 15, 1994, as supplemented on December 21, 1994, and January 20, 1995, the licensee submitted a request for a license amendment to increase the allowable main steam isolation valve (MSIV) leakage and delete the Technical Specification requirements applicable to the MSIV leakage control system (LCS). MSIV leakage would be directed to the main steam drain lines and the main condenser instead of the LCS. The licensee proposed to use non-safety-related components to fulfill the safety related leakage control function through an alternate treatment path. The licensee committed in their submittal, among implementing modifications, that all valves within the seismic verification boundary that were required to reposition to establish the boundary or treatment path would be included in the American Society of Mechanical Engineers (ASME), Section XI, IST program. License Amendment 207 was approved and issued by the NRC on February 22, 1995. The ASME Section XI Code is now the ASME Code for Operations and Maintenance (OM Code).

Despite the commitment, the licensee did not include all the valves within the seismic verification boundary into the scope of the ASME IST program when Amendment 207 was implemented in 1995. This new leakage treatment system (LTS) contained valves that were scoped into the IST program because of meeting other scoping criteria. However, five LTS valves were put in to the augmented IST program and four other LTS valves, due to an oversight, were not included in the IST program at the time. During an outage scope review in 2015, the licensee identified that four valves for the LTS were not in the IST program and proceeded to put one of them into the augmented IST program. Actions to put the other three valves into the augmented IST program were assigned but not completed.

The licensee uses the augmented IST program for components that are not ASME Class 1, 2 or 3 components but have a safety function or have a commitment to be included in the IST program. Testing of the valves in the augmented IST program would be performed in accordance with the ASME Code only to the extent practical. However, relief requests would not be submitted for a valve if the code requirement could not be met. Therefore, components in the augmented IST program are subjected to less stringent requirements than those in the IST program.

Prior to September 1999, 10 CFR 50.55a(f)(1) required, in part, that safety-related pressure vessels, piping, pumps and valves must meet the requirements applicable

to components which are classified as ASME Code Class 2 or Class 3 for a boiling water-cooled nuclear power facility whose construction permit was issued prior to January 1, 1971. On September 22, 1999, 10 CFR 50.55a(f)(1) was revised and requires, in part, that pumps and valves that perform a function to shut down the reactor or maintain the reactor in a safe shutdown condition, mitigate the consequences of an accident, or provide overpressure protection for safety related systems (in meeting the requirements of the 1986 Edition, or later, of the Boiler and Pressure Vessel or OM Code) must meet the test requirements applicable to components which are classified as ASME Code Class 2 or Class 3 for a boiling water-cooled nuclear power facility whose construction permit was issued prior to January 1, 1971. DAEC received their construction permit on June 22, 1970. Therefore, all the valves in the LTS were required to be scoped in the full IST program per 10 CFR 50.55a(f)(1) as they were credited to mitigate the consequences of an accident.

On December 8, 2015, during a refueling outage scoping review, the licensee identified that the four valves were not included in the IST program. Actions were created to scope these valves into the augmented IST program. Upon the inspectors' questioning, the licensee reviewed the work history and determined only corrective maintenance had been performed on some of these valves. The licensee completed a functional assessment and determined the valves were functional but non-conforming.

Analysis: The inspectors determined that the failure to include the nine valves into the IST program in accordance with 10 CFR 50.55a(f)(1) as well as the commitment for License Amendment 207 was within the licensee's ability to foresee and correct. This issue was therefore a performance deficiency and was more than minor because if left uncorrected, there was a potential to lead to a more significant safety concern. Specifically, these valves that were credited to mitigate the consequence of an accident were not tested in accordance with the IST program and may not function appropriately when needed. The inspectors evaluated the finding using the Significance Determination Process in accordance with IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 3, dated June 19, 2012. The finding screened as very low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, and heat removal components, nor did it involve an actual reduction in function of hydrogen igniters in the reactor containment.

The inspectors determined this finding affected the cross-cutting area of problem identification and resolution in the aspect of evaluation to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, through License Amendment 207, the licensee applied and the NRC approved the use of non-code components in lieu of a safety-related system provided that the licensee included the valves in the IST program to provide a high degree of confidence that these valves would remain functional. Instead the licensee mistakenly concluded that the valves could be put into the augmented IST program since they were non-code components. In addition, the licensee did not re-scope these components into the IST program when 10 CFR 50.55(f)(1) was changed in 1999. This misconception continued when the licensee discovered several valves of the LTS were not in the IST program scope in 2015. [P.2]

Enforcement: Title 10 of the CFR, Section 50.55a(f)(1) requires, in part, that pumps and valves that perform a function to mitigate the consequences of an accident must meet

the test requirements applicable to components which are classified as ASME Code Class 2 or Class 3 for a boiling water-cooled nuclear power facility whose construction permit was issued prior to January 1, 1971.

Contrary to the above, DAEC, which received their construction permit on June 22, 1970, failed to ensure that nine MSIV leakage treatment system valves which perform a function to mitigate the consequences of an accident met the test requirements applicable to components which are classified as ASME Code Class 2 or Class 3 for a boiling water-cooled nuclear power facility whose construction permit was issued prior to January 1, 1971. Specifically, the licensee put these nine valves in the augmented IST program and therefore, did not meet the all the requirements applicable to components which are classified as ASME Code Class 2 or Class 3.

The inspectors determined that the failure of the licensee to meet the commitments for License Amendment 207 was also a Deviation from February 22, 1995 when the amendment was issued, to September 22, 1999, when the requirements were codified in 10 CFR 50.55a.

The licensee put this issue into the CAP and planned to include these valves in the full IST program. Because this violation was of very low safety significance and the issue was entered in into the licensee's CAP as ARs 2193481 and 2193482, this violation is being treated as a NCV, consistent with Section 2.3.2.a of the Enforcement Policy. **(NCV 0500031/2017007-01, Failure to Include Valves in the Inservice Testing Program)**

(3) Effectiveness of Corrective Action

Based on the results of the inspection, the inspectors concluded that the licensee was generally effective in addressing identified issues and the assigned corrective actions were generally appropriate. The licensee implemented corrective actions in a timely manner, commensurate with their safety significance, including an appropriate consideration of risk.

Problems identified using root or apparent cause methodologies were resolved in accordance with the CAP procedural and regulatory requirements. Corrective actions designed to prevent recurrence were generally comprehensive, thorough, and timely. The inspectors sampled corrective action assignments for selected NRC documented violations and determined that actions assigned were generally effective and timely.

The inspectors performed a 5-year review of the instrument air system. As part of this review, the inspectors interviewed the current system engineer, reviewed the instrument air system health report, CRs, operating experience, and Maintenance Rule (a)(1) action plan. The system action plan was initiated in May 2016 to address a number of critical component failures, which exceeded the system's condition monitoring performance criterion. The failures had been appropriately addressed and the system was in the monitoring phase of its (a)(1) action plan. In addition, the inspectors walked down the instrument air system to assess material condition. The inspectors concluded that instrument air system related concerns were identified and entered into the CAP at a low threshold, and concerns were resolved in a timely manner commensurate with their safety significance.

i) Observations

Inadequate Implementation of Technical Specification Bases Change Process

The inspectors assessed the corrective actions associated with non-cited violation (NCV) 05000331/2015007-02, "Failure to Correctly Update the Updated Final Safety Analysis Report." The corrective actions associated with this NCV also included addressing errors in the Technical Specification Bases. The inspectors identified that one of the proposed corrections to Technical Specification Bases page B3.5-28 had been made but, due to an oversight, was changed back to read incorrectly. The inspectors considered this a minor violation of TS 5.5.10 a, "Technical Specification Bases Change Control Program." Technical Specification 5.5.10.a., stated, "Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews." Licensee procedure ACP 102.24, "Preparation, Review and Processing of Bases Changes," Revision 10, Step 3.3.2.(3) stated that "the Licensing Engineer determines the content of the proposed changes. This shall include consideration of the effect(s) on outstanding change requests." The licensee was working on two change packages with the same page in both packages simultaneously and failed to ensure that both packages contained the correct wording on the effected page. The licensee wrote AR 2192712, "2017 NRC PIR TS Bases Page Incorrectly Updated" to correct this error.

Corrective Action Program Vulnerability

The inspectors identified a vulnerability in the licensee's CAP process. Currently, the licensee's process allows the owner of a Significance Level 2 or 3 condition adverse to quality CR to approve intent changes and due dates extensions for assignments unless these actions were designated by the MRC as requiring MRC approval for due date extensions and intent changes. As such, corrective actions can be cancelled without scrutiny. For example, in AR 2063651, "Allowable Stress Higher Than CLB's Listed in Block Wall Calc," the licensee documented an issue with a number of calculations that listed an incorrect allowable limit. This CR was initially screened by the licensee as a condition not adverse to quality. However, the MRC changed that to a condition adverse to quality and noted that corrective action was required. The MRC did not specifically require MRC approval for due date extensions and intent changes. However, the corrective action was later changed by the owner to a routine work assignment item and was currently pending for completion. Per procedure PI-AA-104-1000, "Condition Reporting," a routine work assignment, when tied to a CR, does not meet the corrective action definition and are not part of the CAP. Therefore, the owner's action that changed a corrective action into a routine work assignment directly conflicted with the intent of the MRC. The licensee entered this issue into the CAP as AR 2200047, "DAEC NRC PI&R: Vulnerability of the CAP to evaluate this issue."

ii) Findings

No findings were identified.

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the facility's Operating Experience (OE) program. Specifically, the inspectors reviewed the OE program implementing procedures, attended CAP meetings to observe the use of OE information, and reviewed licensee evaluations of OE issues and events. The objective of the review was to determine whether the licensee was effectively integrating OE into the performance of daily activities, whether evaluations of issues were appropriate, 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, were identified and implemented in an effective and timely manner.

b. Assessment

The inspectors observed that operating experience was discussed as part of the daily and pre-job briefings. Operating experience evaluations were limited to certain types; for example, NRC generic communications, significant industry issues, Part 21's, and General Electric Service Information Letters. Additional industry operating experience was disseminated across plant departments for their review and use, if needed. Specific equipment related issues were distributed to appropriate engineers for evaluating and screening into the CAP. The inspectors also verified that the use of OE in formal CAP products such as root cause evaluations and equipment apparent cause evaluations was appropriate and adequately considered. In addition, operating experience was used when developing the instrument air system Maintenance Rule (a)(1) action plan. Generally, OE that was applicable to DAEC was thoroughly evaluated and actions were implemented in a timely manner to address any issues that resulted from the evaluations.

Based on the results of the inspection, the inspectors concluded that operating experience was effectively utilized at the station. No significant issues were identified during the inspectors' review of selected licensee operating experience evaluations.

c. Findings

No findings were identified.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The inspectors reviewed selected self-assessments and Nuclear Oversight audits, as well as the schedule of past and future assessments. The inspectors evaluated whether these audits and self-assessments were effectively managed, adequately covered the subject areas, and properly captured identified issues in the CAP. In addition, the inspectors interviewed licensee personnel regarding the implementation of the audit and self-assessment programs.

b. Assessment

Based on the results of the inspection, the inspectors concluded that self-assessments and audits were typically accurate, thorough, and effective at identifying issues and enhancement opportunities at an appropriate threshold. The inspectors concluded that these audits and self-assessments were completed by personnel knowledgeable in the subject area. In many cases, these self-assessments and audits had identified numerous issues that were not previously recognized by the station. These issues were entered into CRs as required by the CAP procedures. The inspectors also determined that findings from the CAP self-assessment were consistent with the inspectors' assessment.

c. Findings

No findings were identified.

.4 Assessment of Safety Conscious Work Environment

a. Inspection Scope

The inspectors assessed the licensee's safety conscious work environment (SCWE) through the reviews of the facility's Employee Concerns Program (ECP) implementing procedures, discussions with the coordinator of the ECP, interviews with personnel from various departments, and reviews of CRs. The inspectors also reviewed the results from a 2015 safety culture survey and meeting minutes of the Safety Culture Monitoring Panel.

The inspectors held scheduled interviews with 21 individuals in various group and individual settings to assess their willingness to raise nuclear safety issues. These individuals included supervisory and non-supervisory licensee and contractor personnel. Additionally, the inspectors interviewed other licensee staff informally during plant walkdowns to ascertain their views on the effectiveness of the CA program and their willingness and freedom to raise issues.

The individuals in the scheduled interviews were randomly selected to provide a distribution across various departments at the site. In addition to assessing individuals' willingness to raise nuclear safety issues, the interviews also included discussion on any changes in the plant environment over the last six months. Items discussed included:

- knowledge and understanding of the CAP;
- effectiveness and efficiency of the CAP;
- willingness to use the CAP; and
- knowledge and understanding of ECP.

The inspectors also discussed the functioning of the ECP with the program coordinator; reviewed program logs from 2015 through 2017; and reviewed selected case files to identify any emergent issues or potential trends.

b. Assessment

The inspectors did not identify any issues of concern regarding the licensee's SCWE. Information obtained during the interviews indicated that an environment was established where licensee personnel felt free to raise nuclear safety issues without fear of retaliation. Licensee and contractor personnel were aware of and generally familiar with the CAP and other processes, including the ECP and the NRC's allegation process, through which concerns could be raised. In addition, a review of the types of issues in the ECP indicated that the licensee staff members were appropriately using the CAP and ECP to identify issues. The inspectors did not observe and were not provided any examples where there was retaliation for the raising of nuclear safety issues. Documents provided to the inspectors regarding surveys and monitoring of the safety culture and SCWE generally supported the conclusions from the interviews.

c. Findings

No findings were identified.

4OA6 Management Meetings

Exit Meetings

On March 24, 2017, the inspectors presented the inspection results to Mr. D. Curtland and other members of the licensee staff. The licensee acknowledged the issues presented. One item had remained open pending licensee's evaluation. This open item was discussed and closed during a teleconference exit on April 25, 2017. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Casey, Chemistry Manager
D. Curtland, Site Director
M. Davis, Licensing Manager
J. Debois, Performance Improvement Manager
M. Durbin, Maintenance Director
P. Hanson, Engineering Director
C. Hill, Training Manager
D. Hobson, Manager of Projects
D. Morgan, Radiation Protection Manager
M. Strobe, Operations Manager
J. Schwertfeger, Security Manager
M. Foritz, Emergency Preparedness Manager
B. Simmons, Performance Assessment Manager

NRC

K. Stoedter, Branch Chief
B. Bergeon, Acting Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Open and Closed

05000331/2017007-01	NCV	Failure to Include Valves in the Inservice Testing (IST) Program (Section 4OA2.1.b.2.ii)
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Discussed

None

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections 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.

Condition Reports

AR 0341404	070454 NCAQ – Apparent Discrepancy in DAEC HELB Analysis	October 13, 2009
AR 1599839	Replacement of 1VAC015A/B Cooling Coils has Not Been Timely	December 7, 2010
AR 1774177	Maintenance Rule 50.65(A)(1) Red Eval Revision – Chillers	June 7, 2012
AR 1776321	LPCI Manual Realignment from S/D Cooling in Mode Three	June 14, 2012
AR 1780414	A Chiller Unloading Without an Unload Signal	June 28, 2012
AR 1807351	RADTRAD V3.03 Error Notice – Natural Deposition	September 27, 2012
AR 1824467	Rollup of Issues With Embedded Conduits and Water	November 16, 2012
AR 1878171	Non-Conservative Drywell Pressure Assumed in LOCA Dose Calc	May 20, 2013
AR 1922406	Accidental Discharge on Handgun – Rapid OE CR	November 21, 2013
AR 1934710	Common Cause Evaluation for RCIC and SBDG Events	January 21, 2014
AR 1944002	B CS Conduit Water Found – 2A205	February 26, 2014
AR 1954564	Documentation of Simple Troubleshooting on IT265A	April 3, 2014
AR 1968971	HPCI Inboard Isol “A” Logic Occurred During STP 3.3.6.1–13	May 30, 2014
AR 1974995	NRC 95002 Inspection – RCIC Classification as Safety-Related	June 27, 2014
AR 1979556	1J379, 1J391, 2J258, and 2J2060 Should be EQ Boxes	July 22, 2014
AR 1990281	RCIC Room Cooling Cables Have Low Insulation Resistances	September 10, 2014
AR 1991300	Inst Air Blowdown Valve Unable to be Opened per OP–017	September 15, 2014
AR 1998983	Track and Implement Commitments IAW NG–14–0235	October 14, 2014
AR 2000025	V22–0017 HPCI Turb Discharge Check Second Crack Found on Disc	October 18, 2014
AR 2000253	Evaluate Unplanned Orange Shutdown Risk from 10/18/14	October 19, 2014
AR 2006364	Amplifying Instruction of STP 3.10.1–02 Not Performed	November 12, 2014

AR 2012985	Observations for Airlines Above RFPs	December 13, 2014
AR 2016908	Change Management Plan – Coating Program	January 7, 2015
AR 2017390	Replace 1VAC011	January 9, 2015
AR 2022223	3Q/4Q RP Trend-Procedure Adherence Declined Performance	January 31, 2015
AR 2022708	PA Vehicle Search: Driver Interview Questions Not All Asked	February 3, 2015
AR 2024869	2015 FP Triennial Inspection – Vessel Overfill Impacts	February 11, 2015
AR 2025444	PI+R Prep Assessment Discrepancies	February 15, 2015
AR 2025470	PI+R Prep Assessment Gap	February 13, 2015
AR 2034076	Secondary Containment Airlock Doors #225 and #228 Both Opened	March 21, 2015
AR 2035078	Potential Unplanned LCO Entry 3.6.1.3 Condition F	March 25, 2015
AR 2035592	RC CARB Rejected CA 1990448–03	March 26, 2015
AR 2035930	Track the Implementation of LTAM 13–111	March 27, 2015
AR 2037048	125VDC Battery, 1D1, Specific Gravities	April 1, 2015
AR 2048955	4KV Breaker 0224A8971–0016 Charging Motor	May 19, 2015
AR 2049249	15EXEOF: Process Flow Data Sent to Midas Incorrectly	May 20, 2015
AR 2050319	Drawing Discrepancy / Unexpected Voltage on Relay Contact	May 26, 2015
AR 2059120	NS180001 Instrument Air Quality Test Failure	July 8, 2015
AR 2063509	Reduced Margin to ASME Operating Limit on Stroke Time	July 29, 2015
AR 2063651	Allowable Stress Higher Than CLB's Listed in Block Wall Calc	July 30, 2015
AR 2076452	Bad Equalize Contact On Switch	September 24, 2015
AR 2077358	Instrument Air Flow Action Limit Exceeded	September 29, 2015
AR 2079777	15 TD3AR – Crew Did Not Anticipate Re-Energization of 1A3	October 7 2015
AR 2080575	HCVS Rad Monitor Does Not Meet Temperature Specifications	October 9, 2015
AR 2082389	CE 2077358 – Air Audit Required	October 15, 2015
AR 2088694	MI–3027 Dew Point Exceeds Station Limit	November 4, 2015
AR 2092300	Missed ASME Code Surveillance for V19–0124 CVCM Disassembly	November 18, 2015
AR 2096144	Valves Should be Included in the IST Program	December 8, 2015

AR 2100521	NRC Finding – B Condensate Pump Packing Shield/Ventilation	January 5, 2016
AR 2101383	1K032A Rebuilt Compressor Found With Fine Grit Inside	January 8, 2016
AR 2102366	IT265B Instrument Air Dryer Degraded Performance	January 13, 2016
AR 2102756	Incorrect Relay Actuation During 186/DG2 Lockout Relay Test	January 14, 2016
AR 2104450	Moral Continues to Decline at Duane Arnold	January 21, 2016
AR 2104943	EC Security Impact Review Inconsistencies	January 25, 2016
AR 2105042	10 CFR Part 37 Implementation Issues	January 25, 2016
AR 2105156	DEP–PI Miss During LOCT	January 25, 2016
AR 2105462	2016 50.59 UFSAR Change 05–031 Did Not Reflect MOE for DBAs	January 26, 2016
AR 2108683	Enterprise Risk Application to Hard Containment Vent Project	February 9, 2016
AR 2109139	Personnel Search Medical Exemption List	February 10, 2016
AR 2111716	8A Monitoring Well Showing Elevated Tritium	February 20, 2016
AR 2114658	Protected Area Vehicle Search	March 3, 2016
AR 2114764	EQ Documentation Needs Clarification	March 3, 2016
AR 2117204	LLEA Part 37 Information	March 14, 2016
AR 2117206	Security Key Inventory Issue	March 14, 2016
AR 2117211	Security Record Documentation Practices	March 14, 2016
AR 2120438	SEL 16–032 ASO Left Weapon Unattended Momentarily	March 25, 2016
AR 2120863	CA 341404–05 Has Numerous Errors	May 28, 2016
AR 2123866	Evaluate the Ground Water Tritium Presentation RCSC	April 7, 2016
AR 2124092	Unable to Calibrate Load Cell With Current Procedure	April 8, 2016
AR 2124644	New Source of Tritium Determined By RSCS Activities	April 11, 2016
AR 2125833	1P216 HPCI Main Pump Outboard Shaft Seal Leak	April 15, 2016
AR 2126762	Trend – Instrument Air Assessment Level Exceeded	April 20, 2016
AR 2128272	“A” Chiller Discharge Pressure Low Out of Spec.	April 27, 2016
AR 2128533	1P216 HPCI Pump Outboard Shaft Seal Leak	April 15, 2016
AR 2128548	Evaluate/Implement Permanent Monitoring Solutions for IT–88	April 28, 2016
AR 2131074	Resin Possibly Exhausted in Monitoring Well HIC	May 10, 2016

AR 2134479	RWPs Do Not Include Instructions Required by Procedure	May 26, 2016
AR 2134780	NOS Identified HEPA/VAC Room Issues	May27, 2016
AR 2135679	16IPX Evaluate The Delta Between ERDS & Midas Data Times	June 2 2016
AR 2135767	The HP Planning for HIC 16-R-002 Was Not Done for the Job	June 2, 2016
AR 2137075	PDS3025 Air Dryer Hi D/P Possible Cause of Air Dryer Trips	June 16, 2016
AR 2137378	RCE CAPRS Cancelled Without MRC Approval	June 10, 2016
AR 2137402	Documentation for Locked High Rad Area Entries Not Found	June 10, 2016
AR 2137896	MIDAS Software Ownership Needs to be Documented	June 14, 2016
AR 2138459	MIDAS Dose Assessment	June 16, 2016
AR 2141393	Nuclear Safety: Secondary Containment Airlock System	June 30, 2016
AR 2146889	HP-55 – Radiological Work Screening Form	July 29, 2016
AR 2146890	HP-21 – HP Briefing Checklist Summary	July 29, 2016
AR 2147236	2Q16 RP Management Awareness Area–RCA HEPA Vacuum Controls	August 2, 2016
AR 2147378	EP Drill 16TD2 Validation Rework Due to Lack of Midas Expert	August 2, 2016
AR 2147887	RP Technician on Watch Without Respirator Qualification	August 4, 2016
AR 2149987	Replace JBD-17-10 Carbon Steel Air Pipe w/Stainless Steel	August 15, 2016
AR 2151412	T1 Transformer Lock-Out	August 22, 2016
AR 2151959	HPP 3102.03 – Radiation Protection Job Planning	August 24, 2016
AR 2153559	16TD2 – Drill Scenario Did Not Consider Restoration of 1A3	August 31, 2016
AR 2154889	Trend – 1K003 Increased Duty Cycle	September 9, 2016
AR 2157394	Actions Not Clear for February 2016 GWPP Tritium Issue CE 2111716	September 22, 2016
AR 2160580	STP NS800001 Failure	October 5, 2016
AR 2160767	Trip Setting on 1B3419 MO-2000 Found on Incorrect Setting	October 6, 2016
AR 2160971	V25-0001, RCIC Torus Suction Line Chk Valve Failed ASME STP	October 7, 2016
AR 2161159	CV4415 Failed Local Leakage Rate Test	October 8, 2016
AR 2162443	MO4424 Internal Seat Damage	October 13, 2016

AR 2162851	As-Found Loose Bonnet Fasteners on MO4423	October 15, 2016
AR 2164974	Identified FME During Torus Closeout Per IPOI 7	October 24, 2016
AR 2165588	Torus Closeout & Engineering Inspection FME Discovery	October 26, 2016
AR 2166159	1B3419 "A" RHR Drywell Spray Inboard Tripped During PMT	October 29, 2016
AR 2166942	A SBDG Jacket Cooling Water Leak Identified	November 1, 2016
AR 2170757	1K-3 Duty Cycle is at the ASME Alert Limit	November 22, 2016
AR 2172523	IT265A Air Dryer High DP Alarm Activated Three Times in an Hour	December 4, 2016
AR 2175497	Potential NRC Finding – 2016 ERO Tabletop Drills	December 16, 2016
AR 2177447	Instrument Air Dryers Spontaneously Went into Bypass	December 31, 2016
AR 2177715	IT265B – Switching Valve Not Porting Air	January 2, 2017
AR 2179017	Replace Control Building Chiller 1VCH001B per EC287318	January 11, 2017
AR 2183599	Sim Rad Driver Unavailable for Second Run of Drill Development	February 3, 2017

Apparent Cause Evaluation

ACE 1994734	SEL 14-072 HU Error Results in Security Event Log	September 29, 2014
ACE 2041170	NOS Finding-Deficiencies in Configuration Management	April 16, 2015
ACE 2044732	Qualification Event	April 30, 2015
ACE 2056826	Discrepancies Between User Manual and Site	June 25, 2015
ACE 2080185	HPCI and RCIC Condensate Storage Tank Suction Transfer Inoperable	October 8, 2015
ACE 2099065	ACE, NRC Potential Violation HPCI/RCIC Relay Reportability	January 21, 2016
ACE 2102327	50.59 Eval of Portable Heaters During Severe Weather	January 13, 2016
ACE 2126348	Vacuum Breaker Did Not Move During STP	April 19, 2016
ACE 2128559	RCIC Turbine Trip During STP-Relay Blocks on Wrong Contact	April 28, 2016
ACE 2128777	Operations Crew Adverse Trend in Procedure Use and Adherence	May 3, 2016
ACE 2129328	ACE for Secondary Containment Breach	June 7, 2016
ACE 2144950	SEL 16-063 SO Exited the PA and Reentered W/O Search Require	July 20, 2016
ACE 2147887	RP Technician on Watch Without Respirator Qualification	August 4, 2016

ACE 2155933	Hard Pipe Vent Rupture Disc Torque Requirements	September 14, 2016
ACE 2160423	NRC Violation – HPCI/RCIC Vacuum Breaker Line ARP	October 5, 2016
ACE 2175497	Potential NRC Finding – 2016 ERO Tabletop Drills	December 16, 2016

Common Cause Evaluation

CCA 2022041	3Q/4Q Engineering PAR Adverse Trend	January 30, 2015
CCA 2110066	Equipment Reliability – Critical Component Failures 2015	February 14, 2016
CCA 2110066	Equipment Reliability – Critical Component Failures 2015	February 14, 2016

Audit, Assessment and Self-Assessments

AR 2029698	Perform Self-Assessment of MOV Program Documentation	March 3, 2015
AR 2072018	2016 SAQH on Operation Clearance Program	June 30, 2016
AR 2074004	2016 SAQH on Configuration Control	September 15, 2015
AR 2074004	2016 SAQH on Configuration Control	January 25, 2016
AR 2074016	2016 SAQH on Operations Work Management/Execution	June 30, 2016
AR 2097987	Fleet Corrective Action Program – DAEC	June 7, 2016
AR 2113378	Conduct A Quick Hit Self-Assessment (SAQH) on the FME	February 26, 2016
AR 2135203	NOS Escalation–2 Control of RCA Vacuums Cleaners	May 31, 2016
AR 2155942	Level 1 Assessment: RP Postings	September 14, 2016
AR 2157298	Level 1 Assessment: Kaman High Rad Alarms	September 22, 2016
AR 2158565	PDA AFI Leadership Assessment	September 27, 2016
AR 2180322	DAEC OE Program L1A Assessment Generic Implication	January 17, 2017
AR 2185437	Level 1 Assessment: CM Monitoring of Fire Protection DBD	February 14, 2017
PDA 15-010	Nuclear Oversight Report – Performance Improvement	December 22, 2015
PDA 16-001	DAEC Nuclear Oversight Report	March 17, 2016
PDA 16-006	DAEC Nuclear Oversight Report	July 19, 2016

Miscellaneous

2017 Duane Arnold Problem Investigation and Resolution Pre-Inspection Assessment	January 27, 2017
DAEC Engineering Self Evaluation and Trending Analysis Report	4Q2015, 1Q2016, 2Q2016
DAEC Groundwater Investigation Findings and Recommendations	April 7, 2015
DAEC Radiation Protection Self Evaluation and Trending Analysis Report	4Q2015, 1Q2016, 2Q2016
DAEC Survey Analysis Report	October 15, 2015
Duane Arnold Organizational Effectiveness Survey Result	April 2016
Duane Arnold Station Fifth Interval In-Service Testing Program	Revision 3
EVAL-PDA-19.01-00602 – Instrument Air (a)(1) Action Plan	November 9, 2016
ISO-HBB-014-01-H, RCIC Pump Suction	Revision 0
Maintenance Corrective Action Review Board Package	March 8, 2017
Management Review Committee Package	March 7, 2017
Self-Evaluation and Trending Analysis Report for Second Quarter 2016	July 15, 2016
Self-Evaluation and Trending Analysis Report for Third and Fourth Quarter 2016	January 16, 2017
System Health Report: 18.00 – Instrument Air	Q3-2016
Tables of Explanations of CRs Associated With Effectiveness Review 1999648-17	March 23, 2017
Work Order 40318134-01, PSV3223A: Verify Relief VLV SetPT	December 4, 2015
Work Order 40456120-16, CV4327 Check and Adjust Magnets	October 22, 2016
Work Order 40496672-01, STP 3.6.1.7-02 Drywell Suppression Chamber VAC Brkr Insp	October 24, 2016

BECH-E105<014>	480V Motor Control Center Schedules	Revision 27
Bech-M169<3>	Control Building Chillers 1VCH001A and 1VCH001B	Revision 14
CAL-R00-PUP-007	DBA LOCA Radiological Consequences Dose With Alternate Source Term	Revision 3
WO 40055244-01	V03-0089 – Bonnet Leak on Check Valve	December 9, 2010
WO 40390183-08	1B3419: Inspect and Calibrate Replacement Breaker	October 13, 2016
WO 40450920-11	SUS99.28: Geoprobe Fence Sampling in OCA	November 8, 2016
WO 40495420-01	V03-001: Disassembly & Inspect	December 27, 2016

WO 40497284-01	1B3419 A RHR Drywell Spray Inboard Tripped During PMT	October 30, 2016
WO 40498029-01	1G031/ENG: Replace Jacket Cooling Water Gasket Cylinder #3	November 7, 2016
WO A-81966	Replace Cooling Coil	November 3, 2008
WR A-00639	Valve Has a Blown Gasket, Check Valve, 360 Degrees Leak	March 29, 1990

Operating Experience

AR 1956085	CAL-M98-058 (ADS Accumulator Size Verification) Inputs Error	April 8, 2014
AR 2062301	Failed Diesel Driven Fire Pump from Clogged Y-Strainer	July 23, 2015
AR 2063400	Browns Ferry OE on HPCI Steam Supply Valve IST Failure	July 29, 2015
AR 2064541	Part 21 Report from NAMCO	August 4, 2015
AR 2065240	OE on Brunswick U2 MSIV Failure	August 6, 2015
AR 2065333	Pre-Notification of Part 21 NAMCO Switch (Event Number 51280)	August 6, 2015
AR 2090010	Reduced Operating Margin Contributed to Loss	November 9, 2015
AR 2116396	ICES 323695 – Browns Ferry HPCI Steam Line Inboard Isolation	October 20, 2016
AR 2137751	OE Review Columbia Trip Due to Improper N/A of Steps	June 13, 2016
AR 2141767	Part 21 Notification for Target Rock Solenoid Valves	July 1, 2016
AR 2142179	OE from Fitzpatrick TCOA RHRSW Injection	July 6, 2016
AR 2145693	OE Evaluation – NRC IN 2016-09 Reverse Engineering	July 25, 2016
AR 2150105	OE Review of Broken Buried Pipe Due to Heavy Loads	August 16, 2016
AR 2163002	Part 21 Applicability – CAD Solenoid Valves	October 16, 2016
AR 2181576	Part 21 Report From C&D Technologies	January 25, 2017
AR 2183198	SOR Part 21 – Post Accident Radiation Dose Inaccuracies	February 1, 2017
AR 2183218	Part 21 Notification for Target Rock Solenoid Valves	February 1, 2017
AR 2592406	Accidental Discharge on Handgun – Rapid OE	November 21, 2013

Procedures

ACP 102.24	Preparation, Review, and Processing of Bases Changes	Revision 10
ACP 114.15	Condition Reports and Screening	Revision 9
EP-AA-1005 (DAEC)	Maintaining Equipment Important to Emergency Preparedness (DAEC Specific Information)	Revision 10
EP-AA-105	Maintaining Equipment Important to Emergency Response	Revision 4
ER-AA-109	Nuclear Fleet Protective Coatings	Revision 2
HP-21	HP Briefing Checklist Summary	Revision 12
HP-55	Radiological Work Screening Form	Revision 24
HPP 3102.03	Radiation Protection Job Planning	Revision 42
MA-AA-101-1000	Foreign Material Exclusion Procedure	Revision 15
MA-AA-107-1000	Control and Calibration of Measuring and Test Equipment (MTE)	Revision 0
NA-AA-200-1000	Employee Concerns Program	Revision 0
NSC-PP-022	Corporate Procurement Engineering and Dedication Process for Reverse Engineering Activities	Revision 0
OI 149	Residual Heat Removal System	Revision 161
OI 150	Reactor Core Isolation Cooling System	Revision 84
OP-AA-100-1002	Plant Status Control Management	Revision 7
PI-AA-01	Corrective Action Program and Condition Reporting	Revision 4
PI-AA-102	Operating Experience Program	Revision 12
PI-AA-102-1000	Significant Operating Experience Report (SOER) and INPO Event Report (IER) Process Implementation	Revision 14
PI-AA-102-1001	Operating Experience Program Screening and Responding To Incoming Operating Experience	Revision 17
PI-AA-102-1002	Internal Operating Experience	Revision 8
PI-AA-104-1000	Condition Reporting	Revision 12
PR-AA-100-1001	Project Management	Revision 10
QI-4-NSC-9	Procurement Engineering Control	Revision 8
RP-AA-104-1000	ALARA Implementing Procedure	Revision 7
Valve-A391-01	Equipment-Specific Maintenance Procedure Anchor/Darling (Flowserve US Inc.) Valves	Revision 20

Root Cause Evaluations

RCE 1922406	Accidental Discharge of Handgun	November 21, 2013
RCE 1999648	Additional Coating Delamination Found in Torus – Effectiveness Review for Items 17 and 31	October 16, 2014
RCE 2002062	Security One Hour Report to the NRC	October 24, 2014
RCE 2141149	RB Airlock Doors Momentarily Open at the Same Time	June 29, 2017
RCE 2161689	RFO 25 MSIV LLRT Failures	October 21, 2016

Condition Reports Generated for this Inspection

AR 2193569	2017 NRC PI&R – RWA 341404-06 Classified as RWA vs CA	March 24, 2017
AR 2192770	IOD Not Performed for Installed Part 21 Issue	March 21, 2017
AR 2191141	Unable to Locate Meeting Minutes	March 13, 2017
AR 2192557	NRC PI&R – Corrective Actions for ACE 1776321–05	March 20, 2017
AR 2193276	NRC PI&R Insp – AR S/L of Licensee Identified Findings	March 23, 2017
AR 2192818	NRC PI&R – Verbal Approval by MRC for Cancellation of River Inspection	March 21, 2017
AR 2192712	2017 NRC PI&R Tech Spec Bases Page Incorrectly Updated	March 21, 2017
AR 2192708	NRC PI&R – LTCA 2102756–11 Misclassified During Evaluation 03	March 21, 2017
AR 2192698	NRC PI&R – LTCA 1599839–04 Cancelled Inappropriately	March 21, 2017
AR 2192692	NRC PI&R – AR 1878171 Misclassified Assignment Types	March 21, 2017
AR 2191338	RWA 2138459–01 Should Have Been a CA from CE 2135679–01	March 14, 2017
AR 2190723	NRC Identified PI6920B Inaccurate	March 10, 2017
AR 2193314	2017 NRC PI&R – Circuit Maintenance Data Sheet Improvement	March 23, 2017
AR 2193482	MSIV–LTS Check Valves Additions to IST Program Not Tracked	March 24, 2017
AR 2193481	NRC Questions on Commitments for MSIV–LTS Valves	March 24, 2017
AR 2194657	2017 NRC PI&R – CAP Process Issues	March 29, 2017
AR 2200047	DAEC NRC PI&R: Vulnerability of the CAP	April 22, 2017

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
AR	Action Request
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CFR	<i>Code of Federal Regulations</i>
CR	Condition Report
DAEC	Duane Arnold Energy Center
ECP	Employee Concerns Program
IMC	Inspection Manual Chapter
IST	Inservice Testing
LCS	Leakage Control System
LTS	Leakage Treatment System
MSIV	Main Steam Isolation Valve
NCV	Non-Cited Violation
NRC	U.S. Nuclear Regulatory Commission
OE	Operating Experience
PI&R	Problem Identification and Resolution
SCWE	Safety Conscious Work Environment