



Home > Nuclear Reactors > Operating Reactors > Reactor Oversight Process > Plant Summaries > Duane Arnold > Quarterly Plant Inspection Findings

## Duane Arnold – Quarterly Plant Inspection Findings

### 4Q/2017 – Plant Inspection Findings

On this page:

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness
- Occupational Radiation Safety
- Public Radiation Safety
- Security

#### Initiating Events

#### Mitigating Systems

**Significance:** G May 19, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **FAILURE TO EVALUATE EFFECT OF CREDITING BYPASS LINE AS SAFETY RELATED FLOWPATH**

A finding of very-low safety significance and an associated NCV of Title 10 of the Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the licensee's failure to designate the function of the residual heat removal service water (RHRSW) system strainer bypass valves as safety-related and establish the proper maintenance activities and testing associated with safety-related components.

Specifically, the licensee modified the safety function of these bypass valves to provide cooling river water to the residual heat removal system heat exchangers. The licensee entered the issue into the Corrective Action Program as Condition Report (CR) 02205409. Corrective actions include classifying the open function for the RHRSW strainer bypass valves as safety-related and to re-evaluate the in-service testing requirements for the bypass valves based on the revised classification.

The inspectors determined that the failure to designate the function of the RHRSW bypass valves as safety-related and establish proper maintenance activities and testing associated with safety related components was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requirements and was a performance deficiency. This finding was greater-than-minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. The finding was of very low safety significance because it was a design or qualification deficiency that did not represent a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of the licensee's current performance.

Inspection Report# : 2017008 (*pdf*)

**Significance:** **G** May 19, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **FAILURE TO EVALUATE GAS TRANSPORT THROUGH MODIFIED PIPING CONFIGURATION**

A finding of very-low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the licensee's failure to evaluate gas transport through the modified piping configuration. Specifically, the licensee failed to perform an evaluation to ensure that sufficient vent flow velocity could be achieved for a sufficient time in the modified vent piping configuration to adequately remove any accumulated gas from the top of the "A" Core Spray Pump discharge piping and sweep it down through approximately 11 feet of added downward vertical vent piping. The licensee entered the issue into the Corrective Action Program as CR 02204664, CR 02205642, and CR 02205957. Corrective actions include to evaluate current venting methods, to determine enhancements, and to determine acceptance criteria for venting such as minimum flow rate and minimum venting time, as necessary to ensure detection and removal of any potential void.

The inspectors determined that the failure to evaluate the modified vent line piping configuration to ensure that any gas in the top of the "A" Core Spray Pump discharge piping would be adequately vented down through the vertical and horizontal sections of added piping was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and was a performance deficiency. The performance deficiency was determined to be more-than-minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very-low safety significance because it was a design or qualification deficiency that did not represent a loss of operability or functionality. The finding had an associated cross-cutting aspect in the Human Performance area of Teamwork, where Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, the licensee failed to coordinate the modification activities between engineering disciplines for structural piping and fluid dynamics.

Inspection Report# : 2017008 (*pdf*)

## **Barrier Integrity**

**Significance:** **G** Jun 30, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **FAILURE TO COMPLY WITH TECHNICAL SPECIFICATION PROGRAM REQUIREMENTS.**

The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.5.13, "Control Building Envelope (CBE) Habitability Program," for the licensee's failure to implement all TS required elements in the CBE habitability assessment. Specifically, the assessments were not performed at the required frequency and did not verify that the unfiltered air leakage limits for hazardous chemicals would ensure that the CBE occupants exposure to these hazards were within the assumptions in the licensing basis. The violation was entered into the licensee's Corrective Action Program as Condition Report 02211000, "NRC Violation-CRE Habitability Program." Corrective actions included re-performing the CBE habitability assessment to determine that the unfiltered air leakage limits for hazardous chemicals ensured that the CBE occupants exposure to these hazards were within the assumptions in the licensing basis as required by TS 5.5.13.e and performing a review and revision of the CBE Habitability Program implementing procedure, Administrative Control Procedure (ACP) 1208.12, to ensure full compliance with TS 5.5.13.

The inspectors determined the failure to perform a complete and comprehensive assessment that addressed all CBE Habitability Program requirements was a performance deficiency and was within the licensee's ability to foresee and correct. Specifically, the licensee did not address the impact on CBE occupants from data gathered during the

performance of offsite chemical surveys. The finding was determined to be more than minor because the finding was associated with the Barrier Integrity cornerstone attribute of procedure quality and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was of very low safety significance because no degradation of the barrier function of the CBE against smoke or a toxic atmosphere existed. The inspectors determined this finding affected the cross-cutting area of human performance, in the aspect of documentation, such that the organization creates and maintains complete, accurate and up to date documentation. Specifically, the licensee failed to maintain adequate documentation to ensure that TS program requirements were being met.

Inspection Report# : 2017002 (*pdf*)

**Significance:**  May 08, 2017

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

**INADEQUATE MAINTENANCE INSTRUCTIONS FOR CONTAINMENT PURGE VALVES LED TO VIOLATION OF TECHNICAL SPECIFICATION 3.6.1.3.**

A Green finding and an associated NCV of Technical Specification (TS) 3.6.1.3 was self-revealed due to the failure to ensure the outboard containment purge valve was operable when the reactor was placed in Mode 2 on October 30, 2016. Specifically, the licensee performed maintenance on the outboard containment purge valve during the refueling outage using procedures which failed to contain acceptance criteria to ensure critical dimensions necessary for reliable containment purge valve sealing could be re-established following valve stroking. The licensee entered the issue into the corrective action program as Condition Report (CR) 2181838. Corrective actions included establishing the critical dimensions necessary to actuate the drywell purge valve seals, revising the procedure for containment isolation valve maintenance, developing a new test procedure for containment isolation valve testing and developing just-in-time training to be used during future containment isolation valve maintenance.

The inspectors determined that the failure to have the outboard containment purge valve operable while operating in Modes 1 and 2 as required by TS 3.6.1.3 was a performance deficiency. This performance deficiency is more than minor because it is associated with the System, Structure and Component (SSC) and barrier performance attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (e.g., containment) protect the public from radionuclide releases caused by accidents or events. This finding was of very low safety significance because it did not represent an actual open pathway in the physical integrity of the reactor containment, containment isolation system, or heat removal components, nor did it involve an actual reduction in function of hydrogen igniters in the reactor containment. This finding has a cross-cutting aspect in the Human Performance area of Resources, because NextEra personnel did not ensure that procedures were adequate to support nuclear safety. Specifically, maintenance procedures for the drywell purge valves did not contain steps to ensure that a critical dimension for valve operability was re-established following valve stroking.

Inspection Report# : 2017001 (*pdf*)

**Significance:**  May 08, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

**FAILURE TO ENTER TECHNICAL SPECIFICATION 3.6.1.3 FOR AN INOPERABLE OUTBOARD CONTAINMENT PURGE VALVE.**

The inspectors identified a finding of very low safety significance and an associated NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.36(c)(2)(i) for the licensee's failure to enter TS 3.6.1.3 for an inoperable outboard drywell purge valve. Specifically, as a result of a deficient immediate operability determination (IOD), the licensee

failed to declare the outboard drywell containment purge valve inoperable when it failed to satisfy surveillance requirement (SR) 3.6.1.3.4, "perform leakage rate testing for each primary containment purge valve with resilient seals." The licensee entered this issue into the Corrective Action Program (CAP) as CR 2183505. Corrective actions included licensed operator training to share lessons learned.

This performance deficiency is more than minor because it impacted the Barrier Integrity cornerstone attribute of SSCs and barrier performance, and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The finding was screened as very low safety significance 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. This finding has a cross-cutting aspect of consistent process in the Human Performance cross-cutting area because the licensee used T-seal pressure and non-accident drywell conditions which are not related to the primary containment isolation valve (PCIV) specified safety function to declare the outboard drywell purge valve operable.

Inspection Report# : 2017001 (*pdf*)

**Significance:**  Mar 24, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **FAILURE TO INCLUDE VALVES IN THE INSERVICE TESTING PROGRAM.**

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.

Inspection Report# : 2017007 (*pdf*)

### **Emergency Preparedness Occupational Radiation Safety**

**Significance:**  Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **FAILURE TO INCORPORATE ASPECTS OF VENDOR MANUAL INTO SCBA MAINTENANCE**

**PROCEDURE.**

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 20.1703, "Use of Individual Respiratory Protection Equipment," for the licensee's failure to develop and maintain written procedures regarding the maintenance and testing that incorporated all of the visual and functional tests specified by the manufacturer. This issue has been entered into the licensee's CAP as CR 02183134.

Corrective actions included an evaluation of that the self-contained breathing apparatus (SCBA) available for use would perform as expected.

The performance deficiency was determined to be more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the inadequate testing of the SCBA could have resulted in a functional failure during use. The removal of the SCBA in this occurrence could have led the individual to be exposed to radiological airborne hazards and more importantly atmospheres that are immediately dangerous to life and health. The finding was determined to be of very low safety significance because it was not an as-low-as-reasonably-achievable planning issue, there were no overexposures, nor substantial potential for overexposures, and the licensee's ability to assess dose was not compromised. The inspectors determined that the cause of the issue had a cross-cutting aspect of evaluation in the problem identification and resolution area. Specifically, the licensee did not thoroughly evaluate the issue to ensure the resolution addressed the extent of conditions from a previously identified discrepancy between the manufacturer's manual and licensee procedures.

Inspection Report# : 2017001 (*pdf*)

**Public Radiation Safety  
Security**

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

**Miscellaneous**

**Significance:** N/A Nov 06, 2017

Identified By:

Item Type:

**Main Steam Isolation Valve Leakage Exceeded Technical Specification Limits**

Inspection Report# : 2017003 (*pdf*)

Current data as of : February 01, 2018

*Page Last Reviewed/Updated Monday, November 06, 2017*