

# Duane Arnold

## 3Q/2010 Plant Inspection Findings

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### Initiating Events

**Significance:**  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO ADEQUATELY DEFINE REQUIREMENTS AND PRESCRIBE A PROCEDURE APPROPRIATE FOR PLANT CONDITIONS.**

A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to prescribe a procedure appropriate to the circumstances when Surveillance Test Procedure (STP) 3.0.0-01, Attachment 3, "Reactor Coolant Leakage," was implemented on April 8, 2010 to meet the Technical Specification (TS) definition of identified leakage. Specifically, STP 3.0.0-01 did not include a requirement to verify that leakage inside the drywell did not interfere with the leakage detection system prior to reclassifying unidentified leakage as identified leakage. The licensee entered the issue into their corrective action program. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency affected the cross-cutting area of Problem Identification and Resolution, having corrective action program components, and involving aspects associated with the licensee assessing information from the corrective action program in aggregate to identify common cause problems. [P.1(b)]

The inspectors determined that the issue was a performance deficiency because it was the result of the failure to meet a requirement, and the cause was reasonably within the licensee's ability to foresee and correct, and should have been prevented. The inspectors determined that the performance deficiency was more than minor and a finding because it involved the procedure quality attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors applied IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings" to this finding. Under Table 2, all RCS Boundary issues that are not a result of a plant upset will be considered using the Initiating Events Cornerstone. Under Table 4a for the Initiating Events Cornerstone, the finding screened as Green because there was no actual RCS leakage that would have exceeded the TS limit, and the finding did not affect other mitigation systems resulting in a total loss of safety function.

Inspection Report# : [2010003](#) (*pdf*)

**Significance:**  Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### **INADEQUATE EVALUATIONS FOR CRANE AND SPECIAL LIFTING DEVICES.**

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 deficiencies in the design documents for the reactor building crane and the special lifting devices. Specifically, the crane bridge girder rails supporting the trolley were not evaluated for the design basis seismic loads. In the reactor vessel head special lifting device calculation, the licensee did not evaluate the hook pins and the calculated safety factors did not meet the design criteria. In the dryer/separator special lifting device calculation, the licensee used incorrect stress allowable values. The licensee documented the condition in their Corrective Action Programs (CAPs) as CAPs 072917, 072568, 072885 and 072880, and initiated actions for calculation revisions and/or modifications.

The inspectors determined that not evaluating bridge girder rails for seismic loads in accordance with NUREG 0554, not evaluating the hook pins and accepting safety factors not meeting the design criteria and American National Standards Institute (ANSI) Standard N14.6 on the reactor vessel head special lifting device, and the inadequate calculation of safety factors on the dryer/separator special lifting device in accordance with ANSI N14.6 was a

performance deficiency. The finding was more than minor because it was associated with the Initiating Events Cornerstone attribute of Equipment Performance and affected the cornerstone objective to limit the likelihood of those events that upset the plant stability and challenge critical safety functions during shutdown as well as power operations. For the item associated with the crane rail, the Region III Senior Risk Analyst (SRA) performed an SDP Phase 3 risk assessment for estimating the frequency of occurrence of an Operating Basic Earthquake (OBE) or higher seismic event during use of reactor building crane and concluded that the issue was of very low risk significance (Green). For the item associated with the special lifting devices, the inspectors evaluated the finding using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and based on a "No" answer to all the questions in the Initiating Events column of Table 4a, as the licensee demonstrated adequate safety factors on all components through subsequent evaluations, determined the finding to be of very low safety significance (Green). The inspectors did not identify any cross cutting aspects associated with this finding because, based on the age of the performance deficiencies, it was not reflective of the current licensee performance.

Inspection Report# : [2010002](#) (pdf)

**Significance:**  Dec 31, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **FAILURE TO FOLLOW SURVEILLANCE TEST PROCEDURE RESULTS IN AUTOMATIC REACTOR SCRAM.**

A finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed when Instrumentation and Controls (I&C) Technicians failed to fully shut an instrument isolation valve for a Reactor Vessel Pressure Transmitter. During subsequent steps of the Surveillance Test Procedure (STP), a pressure surge occurred on the shared reference leg and RPS channels A2 and B2 initiated an automatic reactor scram due to a sensed low reactor water level. The inspectors determined that the failure to complete the steps of STP 3.3.3.2 09B was contrary to the requirements contained in 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," and was therefore a performance deficiency. The licensee entered this event into their Corrective Action Program as CAP 070334, and implemented corrective actions including enhancement of all STPs that test instruments on shared reference legs. These enhancements include requiring pre pressurization of instrument test lines during the surveillance testing and also revising STP 3.3.3.2-09B to identify the manipulation of shared reference leg isolation valves as critical steps. Additionally, the licensee has implemented corrective actions to improve the Apprenticeship Training Program for I&C Technicians.

The finding was determined to be more than minor because the finding was associated with the Initiating Events cornerstone attribute of Human Performance and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure to fully isolate the Reactor Vessel Pressure Transmitter from the Reactor Vessel Level Instruments installed on the shared reference leg as required by the STP resulted in an unplanned reactor scram. The inspectors determined the finding was of very low safety significance (Green) because the finding only resulted in a reactor scram and did not contribute to the likelihood that mitigation equipment or functions would not be available. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because the licensee did not use human error prevention techniques commensurate with the risk of the assigned task and personnel proceeded in the face of uncertainty. Specifically, an I&C technician failed to complete a step of STP 3.3.3.2-09B when the technician encountered difficulty in shutting the instrument isolation valve for a Reactor Vessel Pressure Transmitter. After several attempts to shut the isolation valve followed by a discussion with a peer, the I&C technician then proceeded in the face of uncertainty and caused a reactor scram.

Inspection Report# : [2009005](#) (pdf)

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## **Mitigating Systems**

**Significance:**  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**SURVEILLANCE TEST PROCEDURE DID NOT INCLUDE APPROPRIATE ACCEPTANCE CRITERIA.**

A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to include appropriate acceptance criteria within Surveillance Test Procedure (STP) NS540002A, "A Emergency Service Water Operability Test," Revision 6; and, NS540002B, "B Emergency Service Water Operability Test," Revision 5. Specifically, STP NS540002A and B did not include appropriate as-found and as-left acceptance criteria to demonstrate prior and ongoing equipment functionality or operability. The licensee entered the issue into the corrective action program (CAP) as condition report (CR) 576584 and significantly revised STP NS540002A and B to include appropriate acceptance criteria.

The inspectors determined that the issue was a performance deficiency because it was the result of the failure to meet a requirement, and the cause was reasonably within the licensee's ability to foresee and correct and should have been prevented. The inspectors determined that the performance deficiency was more than minor and a finding because, if left uncorrected, it had the potential to lead to a more significant safety concern. The inspectors applied IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings" to this finding. Under Table 4a, the inspectors answered "No" to all five questions under the Mitigating Systems Cornerstone Column, and screened the finding as Green. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency affected the cross-cutting area of Human Performance, having resource components, and involving aspects associated with complete, accurate, and up-to-date procedures. [H.2(c)].

Inspection Report# : [2010004](#) (pdf)

**Significance:**  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**CONDITION ADVERSE TO QUALITY NOT PROMPTLY IDENTIFIED AND CORRECTED.**

A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified by the inspectors for the licensee's failure to promptly identify and correct a condition adverse to quality on August 6, 2010. Specifically, during the performance of STP NS540002B, "B Emergency Service Water Operability Test," the licensee did not identify abnormal, elevated Emergency Service Water (ESW) flow to the „B? Standby Diesel Generator (SBDG), and the impact on other ESW system Technical Specification (TS) and TS support equipment. The licensee entered the issue into the CAP as CR 582068.

The inspectors determined that the issue was a performance deficiency because it was the result of the failure to meet a requirement, and the cause was reasonably within the licensee's ability to foresee and correct and should have been prevented. The inspectors determined that the performance deficiency was more than minor and a finding because, if left uncorrected, it had the potential to lead to a more significant safety concern. The inspectors applied IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings" to this finding. Under Table 4a, the inspectors answered "No" to all five questions under the Mitigating Systems Cornerstone Column, and screened the finding as Green. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency affected the cross-cutting area of Problem Identification and Resolution, having corrective action program components, and involving aspects associated with implementing a corrective action program with a low threshold for identifying issues. [P.1(a)].

Inspection Report# : [2010004](#) (pdf)

**Significance:**  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**Completeness and Accuracy of Information.**

A non-cited violation (NCV) of 10 CFR 50.9, "Completeness and Accuracy of Information," was identified due to the submittal of inaccurate medical information for licensed operators. The submittals to the NRC were inaccurate because they certified that the operators had been medically examined and had met all medical qualifications, when in fact, olfactory testing to detect odor of products of combustion had not been performed. The licensee planned corrective actions to administer an olfactory test for products of combustion to all on-shift licensed operators.

The licensee's medical physician failed to adequately test all licensed operators (both initial and renewal licensees) in accordance with 10 CFR 55.21 and 55.33 with respect to American National Standards Institute/American Nuclear Society (ANSI/ANS) 3.4-1983. The licensee submitted medical information for its licensed operators and applicants that was incomplete and incorrect in its assessment of the medical condition and general health of its licensed operators and initial applicants. Because violations of 10 CFR 50.9 are considered to be violations that potentially impede or impact the regulatory process, they are dispositioned using the Traditional Enforcement process. The licensee's failure to provide complete and accurate information to the NRC, which could have resulted in an incorrect licensing action, is also a performance deficiency because the licensee is expected to comply with 10 CFR 50.9 and because it was within the licensee's ability to foresee and prevent. This was also considered a performance deficiency and was more than minor as determined by IMC609, Appendix I, "Licensed Operator Requalification Significance Determination Process." The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification & Resolution associated with the component of operating experience, to implement and institutionalize Operating Experience through changes to station processes, procedures, equipment, and training programs. [P.2(b)].  
Inspection Report# : [2010004](#) (pdf)

**Significance:**  Sep 30, 2010

Identified By: NRC

Item Type: FIN Finding

**ANSI STANDARDS FOR LICENSED OPERATORS NOT MET.**

Inspection Report# : [2010004](#) (pdf)

**Significance:**  Jun 09, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO EVALUATE THE PAST OPERABILITY OF THE 'B' CONTROL BUILDING CHILLER CONDENSER.**

The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," having very-low-safety significance for the failure to evaluate the past operability of the 'B' control building chiller condenser following the discovery of an unanalyzed condition. Specifically, an operability evaluation was not performed when about 45 percent of the heat exchanger tubes were found to be either plugged or heavily fouled due to silt accumulation. No acceptance criteria for tube plugging existed at the time of this discovery. The licensee entered this issue into its corrective action program.

The performance deficiency was determined to be more than minor because it affected the cornerstone objective of ensuring the capability of systems. Due to the extensive number of plugged or heavily fouled tubes, there was reasonable doubt on the past operability of the control room chillers condenser. The finding screened as very-low-safety significance because the licensee was able to demonstrate the cooler had sufficient flow such that the finding did not represent an actual loss of safety function of a single train for duration greater than its Technical Specification allowable outage time. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2010008](#) (pdf)

**Significance:**  Jun 09, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO UPDATE THE UFSAR TO REFLECT REQUIRED COOLING TO THE RHR PUMP SEALS.**

The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," having very-low-safety significance for the failure to take corrective actions in response to a previous NCV concerning the residual heat removal pump seal water cooling requirements. Specifically, the licensee had not performed a new evaluation under 10 CFR 50.59 to address the previous NRC concerns associated with a change to eliminate the need for residual heat removal pump seal water cooling; had not corrected the updated final safety analysis after learning that the previous 10 CFR 50.59 evaluation was not technically adequate to support the change; and had not replaced the seal

with ones designed for higher temperatures. The licensee entered this issue into its corrective action program.

The performance deficiency was determined to be more than minor because, if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, termination of flow to the RHR pump seal water coolers would result in operation outside the seal's design. The finding screened as very-low-safety significance because cooling water had been provided to the seals for the residual heat removal pumps. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2010008](#) (*pdf*)

**Significance:**  Jun 09, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **FAILURE TO ENSURE THE OPERABILITY OF LPCI IN MODE 3.**

The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," having very-low-safety significance for the failure to correct the lack of barriers to prevent low pressure core injection (LPCI) from becoming inoperable in Mode 3. Specifically, the licensee allowed the possibility of LPCI becoming inoperable in Mode 3 due to pressure locking of the residual heat removal crosstie valves when operating the system in shutdown cooling mode. The licensee entered this issue into its corrective action program.

The performance deficiency was determined to be more than minor because it was associated with the mitigating system cornerstone attribute of equipment performance and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as very-low-safety significance because a review of the operators' log demonstrated that the Technical Specification allowable outage time of LPCI was never exceeded. Therefore, the finding did not represent an actual loss of safety function of a single train for duration greater than its Technical Specification allowable outage time. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2010008](#) (*pdf*)

**Significance:**  Mar 31, 2010

Identified By: NRC

Item Type: FIN Finding

### **LIFT HEIGHT ASSUMPTIONS IN DROP LOAD ANALYSES NOT REFLECTED IN RIGGING PROCEDURES.**

A finding of very low safety significance was identified by the inspectors for deficiencies in the design documents for failure to translate the lift height assumptions used in drop load evaluations into field instructions in appropriate rigging procedures. Specifically, calculations for accidental drop during handling of the fuel pool area demineralizer shield plug and of the reactor feed pump motor were based on specific lift heights during rigging; however, no field instructions were provided for limiting the rigging to the specified heights. The licensee documented the condition in CAPs 072551 and 072811 and initiated actions for calculation/procedure revisions.

The inspectors determined that lack of field instructions or procedures restricting the lift heights was inconsistent with the assumptions used in the drop load analyses and was a performance deficiency. The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors evaluated the finding using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems. Using the screening questions in Table 4a, the inspectors determined that the finding was of very low safety significance because the deficiency did not result in loss of operability or function. This finding has a cross cutting aspect in the area of Problem Identification and Resolution because the licensee did not perform a thorough evaluation of CAP 053197 in October 2007 which identified that the lift height assumptions used in the calculation for the stud tensioner load drop

were not translated into field instructions or procedures [P.1(c)].

Inspection Report# : [2010002](#) (pdf)

**Significance:**  Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**UNQUALIFIED SAFETY RELATED CABLES USED IN A SUBMERGED ENVIRONMENT.**

A finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion III, “Design Control,” was identified by the NRC for the failure to maintain ‘A’ Emergency Service Water (ESW) safety related cables in an environment for which they were designed. The inspectors determined that the failure to maintain safety related cables for the ‘A’ ESW system in an environment for which they were designed was contrary to the requirements contained in 10 CFR 50, Appendix B, Criterion III, “Design Control,” and was therefore a performance deficiency. The licensee entered this event into their Corrective Action Program as CAP 070938, and implemented corrective actions including creating inspection tasks to periodically inspect 21 manholes that are susceptible to water intrusion, as well as evaluating the feasibility of installing sump pumps in those manholes.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to maintain ‘A’ ESW safety related cables in an environment for which they were designed when the cables were allowed to be submerged in water inside manhole 1MH109. The finding was of very low safety significance (Green) because it was a qualification deficiency that did not result in a loss of operability. This finding has a cross-cutting aspect in the area of problem identification and resolution, corrective action program, because the licensee did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner. Specifically, the licensee failed to implement timely corrective actions to address an adverse trend of water in manhole 1MH109 which led to ‘A’ ESW safety related cables being submerged in water.

Inspection Report# : [2009005](#) (pdf)

**Significance:**  Dec 15, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure To Implement Licensee Procedure PI-AA-205, “Condition Evaluation and Corrective Action” (02.03.f)**

A finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” was identified by the inspector for the licensee’s failure to implement the requirements of PI-AA-205, “Condition Evaluation and Corrective Action,” which states in part that the “Closure of Corrective Actions is not permitted until corrective actions are completed...” Specifically, the licensee failed to complete the corrective actions as written, in that the B EDG overspeed micro switch was not verified to be installed in accordance with the licensee’s setup procedure, prior to closing CA 51294. The licensee reopened CA 51294 to complete its original assignment and entered the deficiency into their corrective action program as CAP 71693. Additionally, the licensee planned to perform an extent of condition and extent of cause evaluation to address the deficiency.

The inspector determined that the issue was a performance deficiency because it was the result of the failure to meet a requirement, and the cause was reasonably within the licensee’s ability to foresee and correct, and should have been prevented. The finding was determined to be more than minor because if left uncorrected, could become a more significant safety concern. Specifically, the assignments in CA 51294 were designated as corrective actions to prevent recurrence (CATPRs) of a risk-significant issue associated with the ‘B’ EDG output breaker tripping under full load. Using IMC 0609, Appendix A, the inspector determined the finding was of very low safety significance (Green) because the finding did not result in a loss of operability or functionality. This finding has a cross-cutting aspect in the area of Problem Identification, Corrective Action Program, because the licensee failed to thoroughly evaluate problems such that the resolutions address causes. Specifically, the licensee’s procedure requires that a senior manager evaluate and ensure all corrective actions with significance level ‘A’ are complete prior to closure. However, the Maintenance Manager, assigned to CA 51294, did not thoroughly evaluate the corrective action and inappropriately closed CA 51294 before verifying the assigned actions were complete (P.1(c)) (Section 02.03.f).

**Significance:**  Oct 06, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Identify and Address an Adverse Trend in Performing Required Fire Watches**

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specifications, Paragraph 5.4.1.d, for the failure to identify an adverse trend in performing fire watches required as compensatory measures to address identified fire protection impairments; including potential multiple spurious operations vulnerabilities and an unanalyzed condition in Appendix R analysis. Specifically, the licensee failed to implement requirements in Procedure PI-AA-01 that would have ensured the proper implementation of the Fire Protection Program in accordance with ACP 1412.4. The improper implementation of Procedure PI-AA-01 resulted in numerous instances in which the licensee failed to issue and implement Fire Watch Surveillances as required by ACP 1412.4, Section 3.1, Paragraph (7)(a). Upon discovery, the licensee initiated an Apparent Cause Evaluation after entering this finding into their corrective action program as CAP 069822.

The finding was determined to be more than minor because the finding was associated with the mitigating systems cornerstone attribute of protection against external factors (fire) and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to implement fire protection procedure requirements could have complicated plant safe shutdown in the event of a fire. The issue was of very low safety significance based on the relatively short duration involved and that only one defense-in-depth element (barriers) was affected by the impairments for which the fire watches had been established. This violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy.

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## **Barrier Integrity**

**Significance:**  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **FAILURE TO FOLLOW THE PROCEDURES FOR PERFORMING OPERABILITY DETERMINATIONS.**

A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the failure of the licensee to follow procedure EN-AA-203-1001, "Operability Determinations/Functionality Assessments," and Administrative Control Procedure (ACP) 110.1, "Conduct of Operations." The Shift Manager failed to make an immediate operability determination which addressed the impact of the degraded conditions in the drywell cooling system on primary containment and to provide sufficient detail for an independent person to understand the basis for the decision was contrary to step 4.3 of EN-AA-203-1001 and Attachment 10 of ACP 110.1, and was a performance deficiency. The licensee entered the item into their Corrective Action Program as CAP074069, and performed a Prompt Operability Determination (OPR000427) that determined their Primary Containment was operable with the degraded condition in the Drywell Cooling system.

The performance deficiency was determined to be more than minor because if left uncorrected, failure to properly implement the operability procedures could result in safety-related components being incorrectly declared operable rather than inoperable or operable but non-conforming (a more significant safety concern). The inspectors evaluated the finding using the SDP in accordance with IMC 0609, Table 4a for the Containment Barrier Cornerstone. The finding screens as very low safety significance (Green) because the finding does not represent an actual open pathway in the physical integrity of reactor containment. This finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because the licensee did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. Specifically, not evaluating the breach of the closed system on a primary containment penetration to determine its effect on primary containment operability was a non-

## Emergency Preparedness

**Significance:**  Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **FAILURE TO CONDUCT AN ADEQUATE CRITIQUE FOR THE MAY 20, 2009, DRILL.**

A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix E, Section IV.F.2.g, and of the emergency planning standard 10 CFR 50.47(b)(14) was identified by the inspectors for the failure of the critique to identify a planning standard weakness. Specifically, during the 2009 Emergency Response Organization (ERO) Training Drill #2 conducted on May 20, 2009, the licensee's critique process failed to identify a performance problem associated with communications between the Control Room/Simulator (CRS) and the Technical Support Center (TSC) and, as a result, the deficiency was not corrected. The CRS provided inaccurate information necessary for an Emergency Action Level (EAL) classification to the TSC concerning the reactor water level which prompted a controller injection to stop a potential inaccurate classification. The licensee entered the finding into their corrective action program (CAP 068506 and CE 007572).

The performance deficiency was determined to be more than minor because the deficiency adversely affected the Emergency Preparedness Cornerstone objective to ensure the licensee is capable of implementing adequate measures to protect the health and safety of the public in a radiological emergency, as demonstrated by the ERO performance in a drill. The inspectors used IMC 0609, Appendix B, and determined the deficiency was similar to the Green example of the drill critique process not properly identifying a weakness resulting from a performance problem associated with a risk significant planning standard 10 CFR 50.47(b)(14). Therefore, the finding was screened to be of very low safety significance (Green). The cause of the finding had a cross cutting component in the problem identification and resolution area of self and independent assessments.

Inspection Report# : [2010002](#) (pdf)

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## Occupational Radiation Safety

**Significance:**  Mar 31, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **AN INTERNAL CONTAMINATION OCCURRED WHILE CLEANING RPV STUDS AND WASHERS ON THE REFUEL FLOOR AT DUANE ARNOLD.**

A self revealed finding of very low safety significance and associated NCV of Technical Specification (TS) 5.4.1(a) was identified for failure to establish and implement a procedure for performing decontamination activities associated with a potentially significant decontamination activity. The issue resulted in an event where a radworker became internally contaminated. The event was entered in the licensee's CAP. Additionally, the licensee completed a Human Performance Review Worksheet. The licensee also initiated long term corrective actions including refuel floor procedure augmentations.

The finding is more than minor because it affected the Occupational Radiation Safety Cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation and the corresponding attributes associated with the occupational radiation safety program and processes. The finding was determined to be of very low safety significance because it was not an as low as is reasonably achievable (ALARA) planning issue, there was no over exposure or substantial potential for an overexposure, and the licensee's ability to assess worker dose was not compromised. The finding involved a cross cutting aspect in the area of human performance related to work control in

that the licensee did not coordinate work activities by incorporating actions to address keeping personnel apprised of the operational impact on work activities.

Inspection Report# : [2010002](#) (*pdf*)

**Significance:** G Dec 31, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**FAILURE TO COMPLY WITH TECHNICAL SPECIFICATION AND DIVING SURVEY REQUIREMENTS DURING WORK IN THE TORUS RESULTED IN UNNECESSARY RADIATION EXPOSURE.**

An NRC-identified finding of very low safety significance and an associated Non Cited Violation (NCV) of Technical Specification 5.4.1(a) was identified for the failure to comply with the requirements of the “Diving Operation within Radiological Areas” procedure during torus underwater diving operations on February 17, 2009. Specifically, two divers entered the water in the torus bay no.7 to perform wall coating repairs. Dives were performed approximately 10 feet from the water surface. The diving was monitored by two tenders and two health physics (HP) technicians. The HP technicians provided continuous coverage and monitored activities through a Televue system that continuously monitored the divers’ electronic dosimetry (ED). At approximately 2.5 hours into the dive, the senior HP technician glanced at the Televue monitor and discovered that an accumulated dose alarm condition had occurred several minutes earlier for a three-minute duration on one of the divers. This resulted in one diver receiving an accumulated dose of 133 millirem (mrem). Both divers were ordered out of the water and were subsequently surveyed and were found free of contamination.

The licensee failed to recognize the radiological impact of various operational activities on dive conditions, which introduced discrete radioactive particles (DRPs) into the torus water. Drain down of the reactor cavity and the torus spray header along with the storage of contaminated filters in the torus all contributed to the presence of DRPs. Although underwater radiation surveys were performed shiftly by the radiation protection (RP) staff, these surveys were limited to the immediate dive area. Surveys were not sufficiently comprehensive or timely, as required by the licensee's procedure, to ensure that changes in radiological conditions were identified to maintain diver dose as-low-as-reasonably-achievable. Sufficiently comprehensive surveys of the torus were last performed four-days prior to the February 17th incident. As a result, one of the torus divers encountered radiation levels greater than expected and received additional unanticipated dose. The licensee’s corrective actions included counseling of the involved diving crew and conducting a stand-down with the dive crew to reinforce radiological requirements along with communication expectations such as notifying RP supervisors of any reported plant operations that may affect radiological conditions prior to the start of diving activities. The licensee had completed an extent of condition evaluation and formulated additional actions to prevent recurrence.

The finding was more than minor because it was associated with the program and process attribute of the Occupational Radiation Safety Cornerstone and affected adversely the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that, access into underwater high radiation areas whose radiological conditions were unknown placed the divers at risk for unnecessary radiation exposure. The finding was determined to be of very low safety significance because it was not an as-low-as-is-reasonably-achievable (ALARA) planning issue, there was no overexposure or substantial potential for an overexposure, and the licensee’s ability to assess worker dose was not compromised. The finding involved a cross-cutting aspect in the area of human performance related to decision making, in that, the licensee did not use conservative assumptions in its decision making to ensure that the torus diving activity was radiologically safe. Specifically, the licensee did not perform underwater dose surveys that were sufficiently thorough to provide an accurate characterization of the radiological conditions.

Inspection Report# : [2009005](#) (*pdf*)

# Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

**Significance:** SL-IV Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO SUBMIT LER PER 10 CFR 50.73 (a) (2)(v)(A) AND (D).**

A Severity Level IV non-cited violation of 10 CFR Part 50.73(a)(2)(v)(A) and (D) was identified by the inspectors for the failure of the licensee to report an event or condition that could have prevented the fulfillment of the Turbine Stop Valve Closure and Turbine Control Valve Fast Closure reactor protection system (RPS), and the End-of-Cycle Recirculation Pump Trip (EOC-RPT) safety functions, which are relied upon to shutdown the reactor and maintain it in a shutdown condition, and mitigate the consequences of an accident. The licensee entered the violation into their corrective action program as AR 392462.

Violations of 10 CFR 50.73 are considered to be violations that potentially impact the regulatory process and they are dispositioned using the traditional enforcement process instead of the ROP SDP. Because the performance deficiency was minor and not a finding per Inspection Manual Chapter 0612, Appendix B, "Issue Screening," a cross-cutting aspect was not assigned and the performance deficiency not tracked.

Inspection Report# : [2010003](#) (*pdf*)

Last modified : November 29, 2010