Duane Arnold
3Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Aug 15, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Design Adequacy of Loss of Voltage Relay Setting.
The inspectors identified a finding having very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to ensure the Loss of Voltage Relay trip settings were properly established. Specifically, the licensee failed to consider trip setting coordination requirements with the essential bus and essential load feeders' over-current relay trip setpoints for postulated fault induced voltage dip events. This finding was entered into the licensee’s Corrective Action Program and the licensees’ preliminary verification determined the Loss of Voltage Relay settings were still operable but non-conforming.

The inspectors determined the performance deficiency was more than minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, the isolation of postulated faulted loads by under-voltage relay actuation in lieu of overcurrent relay actuation would have increased the likelihood of events that upset plant stability and affected the availability and reliability of the preferred alternating current power supply. The inspectors determined the finding was of very low safety significance (Green) because it did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. 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# : 2014008 *(pdf)*

Significance: G Aug 15, 2014
Identified By: NRC
Item Type: FIN Finding
Failure to Verify Startup Transformer Neutral Grounding Resistor Design Assumption.
The inspectors identified a finding having very low safety significance (Green) in that, the licensee did not adequately ensure the operation of the Startup Transformer Neutral Grounding Resistors was within the design assumptions used in the calculation of the essential 4160V system ground overcurrent relay trip settings. The licensee entered this finding into their Corrective Action Program and included the requirement for measurement of the neutral grounding resistor in their next Startup Transformer preventive maintenance work order, scheduled for September 2014.

The inspectors determined the performance deficiency was more than minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, had the neutral resistors developed either a short or an open circuit, the 4160V essential emergency loads would have been subject to un-analyzed operating condition and selective breaker tripping could not be assured. This would have increased the likelihood of events that upset plant stability and affected the availability and reliability of the preferred AC power supply. The inspectors determined the finding was of very low safety significance (Green) because it did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. 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# : 2014008 *(pdf)*

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ESTABLISH FIRE PATROLS AS COMPENSATORY ACTIONS IN ACCORDANCE WITH THE FIRE PROTECTION PROGRAM.
The inspectors identified a finding of very low safety significance (Green) and associated non-citied violation of Duane Arnold Energy Center (DAEC) Renewed Operating License Condition 2.C.(3), for the failure to implement compensatory measures for non-functional fire suppression deluge systems. Specifically, the licensee did not establish hourly fire patrols within 1 hour of discovering the non-functional status of deluges 3 and 4 in accordance with Technical Requirements Manual (TRM) Limiting Condition for Operation (TLCO) 3.11.4, "Fire Suppression Deluge and Sprinkler Systems," Condition A.2. The licensee documented the issue in the corrective action program (CAP) as condition reports (CRs) 01959153, 01964875, 01964878, 01968702, 01968720 and 01971501; and implemented fire patrols until the deluge systems were satisfactorily tested per TRM requirements.

The performance deficiency was determined to be more than minor and a finding in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because it impacted the Reactor Safety - Initiating Events Cornerstone of Protection Against External Factors to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors also determined that if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. The inspectors applied IMC 0609, Attachment 4, "Initial Characterization of Findings," to this finding. The inspectors answered "Yes" to question E.2(2), "Does the finding involve fixed fire protection systems or the ability to contain a fire within Table 3 – SDP Appendix Router," and transitioned to IMC 0609, Appendix F, "Fire Protection Significance Determination Process." The inspectors processed the finding in accordance with Fire Protection SDP Phase 1 Screening in IMC 0609, Appendix F, Attachment 1 and answered "Yes" to Step 1.3, Task 1.3.1 question, "Is the reactor able to reach and maintain safe shutdown (either hot or cold) condition?" Therefore, the finding screened as very low safety significance (Green).

The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Consistent Process in the Human Performance area and involving individuals using a consistent, systematic approach to make decisions.
Inspection Report# : 2014003 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
HYDRAULIC CONTROL UNIT CONFIGURATION CONTROL ERROR.
A finding of very low safety significance and associated non-citied violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for the licensee's failure to accomplish procedure OP-AA-101-1000, "Clearance and Tagging," Revision 10. Specifically, on July 21, 2014, the licensee failed to ensure that clearance isolation 5500-1T221(34-19) for hydraulic control unit (HCU) 34-19 was appropriate

for the requested work scope and that all applicable Technical Specification actions were entered. After receiving a high temperature alarm associated with HCU 34-19, the licensee incorrectly concluded that the alarm was expected. During a walk down by an operator on the subsequent shift, it was determined that HCU 34-19 was improperly tagged out as revealed by the temperature alarm, and that control rod 34-19 should have been declared inoperable instead of slow. The licensee entered the issue into the corrective action program (CAP) as condition report (CR) 01979472, and invoked corrective actions to brief all licensed operators on the event, updated procedures to clearly define clearance reviewer responsibilities, and made changes to the HCU operating instructions to recognize applicable Technical Specification (TS) Required Actions.

The inspectors determined that the issue of concern represented a performance deficiency because it was the result of the licensee's failure to meet a procedural requirement, and the cause was reasonably within the licensee's ability to foresee and correct and should have been prevented. The licensee failed to properly accomplish procedure OP-AA-101-1000, "Clearance and Tagging,' Revision 10, to ensure that a clearance isolation for HCU 34-19 was appropriate for the requested work scope and that all applicable TS actions were entered. The performance deficiency was determined to be more than minor and a finding because it impacted the Mitigating Systems Cornerstone Attribute of Configuration Control, 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 inspectors applied IMC 0609, Attachment 4, "Initial Characterization of Findings," to this finding. The inspectors answered "No" to all questions within Table 3 – SDP Appendix Router, and transitioned to IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Because the inspectors answered "No" to questions 1-3 of Section C – Reactivity Control Systems of Exhibit 2 – Mitigating Systems Screening Questions, the finding screened as very low safety significance (Green). The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Human Performance, Work Management, and involving the organization implementing a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. Specifically, the clearance preparer, reviewer and approver for the clearance isolation of HCU 34-19 failed to properly implement the clearance and tagging process to ensure the proper isolation was made and the applicable TS actions were entered.

Inspection Report# : 2014004 *(pdf)*

Significance: G Sep 03, 2014
Identified By: NRC
Item Type: VIO Violation
FAILURE TO REMOVE WATER FROM CONDUITS CONTAINING SAFETY-RELATED CABLES.
The inspectors identified a finding of very low safety significance and an associated cited violation of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion XVI, "Corrective Action," where the licensee failed to correct a condition adverse to quality following the discovery of water in several safety-related electrical conduits. Specifically, the licensee identified water in 23 embedded conduits containing cables for safety-related equipment. However, the licensee failed to take corrective action to remove water from nine of the conduits. This violation is being cited because the licensee had failed to restore compliance, or demonstrate objective evidence of plans to restore compliance in a reasonable period following documentation of four associated Non-Cited Violations (NCVs) issued from January 30, 2013 to December 5, 2013.

The performance deficiency was determined to be more than minor, because the finding was associated with the Mitigating Systems cornerstone's attribute of design control for ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, by not removing water from the conduits, cables were continuously exposed to water which is an adverse environment for which they were not qualified, designed or evaluated for, and will lead to cable degradation and could potentially cause cable failure. Cable failure would prevent the systems from carrying out their intended safety-related functions. The finding had a cross-cutting aspect in the area of Human Performance because the licensee did not operate and maintain equipment

within design margins. Margins were not carefully guarded or changed only through a systematic and rigorous process. Special attention was not placed on maintaining defense-in-depth, and safety-related equipment. Specifically, the corrective actions developed by the licensee were insufficient to restore safety-related cables to their design environment to ensure that cables did not remain submerged.
Inspection Report# : 2014010 *(pdf)*

Significance: G Aug 15, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Include Minimum Required System Voltage as an Acceptance Criterion in the 125 Vdc Station Battery Surveillances Test Procedures.
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the licensee's failure to have adequate acceptance criteria in the station battery surveillance procedures. Specifically, the licensee failed to incorporate the 125 volt direct current (Vdc) system minimum voltage design value shown in the station battery sizing calculations as acceptance criteria for the minimum battery terminal voltage in the service discharge test surveillance procedures. The licensee entered this finding into their Correction Action Program, verified the battery voltage did not go below the minimum required system voltage value, and initiated an action item to revise surveillance procedures to include minimum battery terminal voltages.

The performance deficiency was determined to be more than minor because if left uncorrected, it would have the potential to lead to more significant safety concern. Specifically, the current alarm value of 107 Vdc specified in the procedure would not alert operators if the battery voltage dropped below its design limit. Since the finding did not represent an actual loss of safety function, the inspectors screened the finding as having very low safety significance (Green). 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# : 2014008 *(pdf)*

Significance: G Aug 15, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to fully Incorporate the Sequential Loading Relay Functions into the UFSAR.
The inspectors identified a Severity Level IV NCV of Title 10 CFR 50.71(e), "Maintenance of Record, Making of Reports," and an associated finding of very low safety significance (Green) for the licensee's failure to maintain up-to-date the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee failed to incorporate the function of the sequential loading relays to prevent loading of core spray and residual heat removal pumps below 3500 volts and to start of the SBDGs as a result of the actuation of these relays into the UFSAR. The licensee entered this finding into their Correction Action Program as AR 01984560 to adequately describe the function of these relays in the UFSAR.

The performance deficiency was determined to be more than minor because it impacted the Mitigating Systems Cornerstone attribute of Design Control to ensure the reliability and availability of the standby diesel generator. Specifically, the licensee modified the circuits associated with the starting of the diesels from the sequential loading relays and assessed the applicability of a 10 CFR 50.59 safety evaluation based on incomplete information in the UFSAR. The inspectors determined this lack of information did not result in an unacceptable change to the facility. Since the finding did not represent an actual loss of safety function, the inspectors screened the finding as having very low safety significance (Green). The violation was determined to be a Severity Level IV violation in accordance with Section 6.1.d.3 of the NRC Enforcement Policy. 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# : 2014008 *(pdf)*

Significance: G Aug 15, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedure for Flow Balancing ESW System.
The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to provide adequate procedures for flow balancing of the ESW System. Specifically, the ESW flow balance procedure did not include acceptance criteria to limit or evaluate minimum throttle valve seat to disc clearance, and subsequent potential for clogging if the clearance was set less than the screen mesh size (1/16 inch) of the upstream ESW strainer. At least one throttle valve in the system (V13-48 for High Pressure Coolant Injection room cooler Train B) was determined to had been set below this screen mesh size. The licensee performed a prompt operability determination for this room cooler and concluded with reasonable assurance that the throttle valve currently had a clearance dimension of at least 1/16 inch. The licensee entered the issue into their Corrective Action Program to correct the flow balance procedure as necessary. Additionally, during the next scheduled flow balancing of the ESW system in September 2014 the licensee will confirm that this valve is open at least 1.2 turns (minimum required for a seat clearance of 1/16 inch).

The inspectors determined the performance deficiency was more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, material small enough to pass the strainers could choke flow downstream of V13-48 or other throttle valves, thus preventing one or more ESW cooled components from performing their safety-related function. The inspectors assessed this finding for significance in accordance with NRC Manual Chapter 0609, Appendix A, Attachment 1, Significance Determination Process (SDP) for Reactor Inspection Findings for At-Power Situations, and determined that it was of very low safety significance (Green), in that no actual loss of safety system function was identified due to existing system conditions. 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# : 2014008 *(pdf)*

Significance: G Jul 11, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequately Performed Drawing Revision Related to CAPR
The inspectors identified a finding of very low safety significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to assure that a safety-related drawing for the High Pressure Coolant Injection (HPCI) system was accurate. Specifically, a corrective action to prevent recurrence for the RCIC system failure required that the HPCI system drawing be changed to accurately reflect the system configuration. The licensee changed the drawing, but not so that it accurately reflected the system configuration. The licensee initiated Condition Report (CR) 1977172 to document the inaccuracy of the HPCI drawing and track completion of a document change request to revise the drawing to show the proper relationship between the HPCI governor speed control and the turbine speed indicator in the control room. Additionally, the licensee directed Design Engineering to perform an apparent cause evaluation to determine why the drawings did not accurately reflect the relationship between speed sensor and speed indicator, and why the HPCI drawing was not revised to clarify the interrelationships as was done on the RCIC drawing.

The performance deficiency was determined to be more than minor because in accordance with IMC 0612, Appendix B, if left uncorrected it would have the potential to lead to a more significant safety concern. Specifically, the HPCI drawing change was part of a corrective action to prevent recurrence of a significant condition adverse to quality. The inspectors screened the finding using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Appendix A, "The Significance Determination Process for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined the finding was related to a design deficiency that did not result in a loss of a safety system or function, and is therefore a finding of very low safety significance. The inspectors determined that the finding had a cross cutting aspect in the area of problem identification and resolution, specifically evaluation, because licensee personnel failed to thoroughly evaluate issues to ensure that the resolutions address causes and extent of conditions commensurate with their safety significance. (P.2)
Inspection Report# : 2014009 *(pdf)*

Significance: G Jul 11, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Incomplete Corrective Actions To Prevent Recurrence
The inspectors identified a finding of very low significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," involving multiple examples where the licensee failed to ensure that activities affecting quality were prescribed by documented procedures of a type appropriate to the circumstances. Specifically, in the first example, Duane Arnold Energy Center (DAEC) maintenance personnel failed to implement part of a corrective action to prevent recurrence (CAPR) to ensure alignment was measured and recorded for the standby diesel generator (SBDG) lube oil (LO) heat exchangers (HXs) following the March 8, 2013 'A' SBDG lube oil heat exchanger gasket failure. In the second example, inspectors identified that procedures lacked adequate acceptance criteria to ensure acceptability of potential flange alignment issues. As a third example, inspectors identified an actual failure to ensure adequate gasket placement due to inadequate acceptance criteria on the 'A' SBDG scavenging air heat exchanger. The corrective actions for deficient flange inspection procedure GENERA-F010-01 included revising procedures to incorporate a requirement to measure and record vertical and horizontal alignment between the lube oil and jacket water channel heads. In addition, the licensee planned to incorporate acceptance criteria on which to base in-field determinations. The immediate corrective actions for the scavenging air cooler gasket included performing an immediate operability determination (IOD) and prompt operability determination (POD) for the protruded gasket region. In addition, the licensee planned to change procedure GENERA-F010-01 to include actions to verify gasket position after torqueing the flange bolts.

The inspectors determined that this finding was more than minor in accordance with IMC 0612, Appendix B, because it affected the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Appendix A, "The Significance Determination Process for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined the finding was of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of a mitigating structure, system or component and did not result in a loss of operability or functionality. In addition, the finding did not represent a loss of system or function, did not represent an actual loss of function of a least a single train for longer than its technical specification allowed outage time, and did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance. The finding had a cross cutting aspect in the area of problem identification and

resolution, specifically evaluation, because licensee personnel failed to thoroughly evaluate issues to ensure that the resolutions address causes and extent of conditions commensurate with their safety significance. (P.2)
Inspection Report# : 2014009 *(pdf)*

Significance: G Jul 11, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish EFR Attributes to Assess the Effectiveness of Corrective Actions
The inspectors identified a finding of very low safety significance (Green)and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V,"Instructions, Procedures, and Drawings," for the failure to ensure the effectivenessreview (EFR) attributes for a significant condition adverse to quality would appropriately evaluate whether the corrective actions were effective in eliminating or reducing therecurrence rate. The licensee initiated CRs 1977427 and 1976943 to document the pooror missing EFRs and began revising the EFRs to be more supportive of determining ifthe corrective actions were effective.

The inspectors determined that the licensee's failure to establish EFR criteria that wouldhave identified whether the corrective actions to prevent recurrence (CAPRs) hadeffectively resolved the conditions was a performance deficiency warranting furtherreview. The inspectors determined that this finding was more than minor in accordancewith IMC 0612, Appendix B, because it affected the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond toinitiating events to prevent undesirable consequences. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 0609.04,"Initial Characterization of Findings," dated June 19, 2012, and Appendix A, "The Significance Determination Process for Findings At-Power," dated June 19, 2012,Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined thefinding was of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of a mitigating structure, system or component and did not result in a loss of operability or functionality. In addition, the finding did not represent a loss of system or function, did not represent an actual loss of function of a least a single train for longer than its technical specification allowed outage time, and did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance. The finding had adherence, because licensee personnel failed to follow procedures associated with developing and reviewing corrective actions commensurate with their safety significance. (H.8)
Inspection Report# : 2014009 *(pdf)*

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PRESCRIBE WORK ORDER PLANNING PROCEDURE APPROPRIATE TO THE CIRCUMSTANCES.
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to prescribe a procedure appropriate to the circumstances for work order planning as related to the failure of under-voltage relay 127-SB2. Specifically, procedure MA-AA-203-1001, "Work Order Planning," Section 4.2, Step 2, inappropriately allowed the selection of model work orders without verification of the acceptance criteria, requirements for as-found/as-left data, set points, and other related information. The issue was entered into the licensee's CAP for resolution as CRs 01972812 and 01972807; and the licensee took actions to add a verification step to procedure MA-AA-203-1001, Section 4.2, Step 2, to verify the procedure being referenced contained the relevant information to the work task being accomplished.

The inspectors determined that the issue of concern represented a performance deficiency because it was the result of

the licensee's failure to prescribe a procedure appropriate for the circumstances. The performance deficiency was determined to be more than minor and a finding in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. The inspectors applied IMC 0609, Attachment 4, "Initial Characterization of Findings," to this finding. The inspectors answered "No" to all questions within Table 3 – SDP Appendix Router, and transitioned to IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." Per Exhibit 2 – Mitigating Systems Screening Questions, the inspectors determined that because the finding did not represent an actual loss of function (redundant loss of power instrumentation remained operable during the period of the 127-SB2 inoperability), the finding screened as very low safety significance (Green).

The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Evaluation in the Problem Identification and Resolution area and involved the organization thoroughly evaluating issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance.
Inspection Report# : 2014003 *(pdf)*

Significance: G Oct 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failed to Establish Measures for the Selection and Review for the Suitability of Safety-Related Cables.
he inspectors identified a finding of very low safety significance and an associated NCV of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, "Design Control," where the licensee failed to establish measures for the selection and review for the suitability of safety-related cables with Procedure Electrical Cable Program Manual (ECPM) 4.5, "Electrical Cable Operability," Revision 2. Specifically, ECPM 4.5, Attachment 1, "Qualification of Cables in Wetted Environments," allowed for safety-related cabling that was not qualified or specifically designed for total submergence in water to be used in water filled conduits contrary to its unsuitability for this application, without suitable testing or design control measures. The licensee entered the issue into their Corrective Action Program as Action Request (AR) 01902782, "ECPM – Electrical Cable Operability," dated September 10, 2013, which suspended the use of ECPM 4.5 by quarantining the procedure until the identified discrepancies could be resolved.

The performance deficiency was determined to be more than minor because the finding, if left uncorrected, would become a more significant safety concern. Specifically, not identifying and appropriately evaluating degraded or non-conforming conditions to properly assess the operability of cables subjected to protracted and/or extensive exposure to water could warrant not declaring a structure, system, and component (SSC) inoperable by the use of compensatory actions to maintain or enhance a degraded or non-conforming condition. This finding has a cross-cutting aspect in the area of human performance, decision making because the licensee did not use conservative assumptions in implementing ECPM 4.5, "Electrical Cable Operability," Revision 2. Specifically, the licensee failed to perform an effective review of the consequences of their decision to include an attachment to this procedure that provided a method not previously approved for qualifying safety-related cables for submergence.

Inspection Report# : 2013008 *(pdf)*

Significance: G Oct 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failed to Ensure the SBDG Power Cables Were Not Submerged.
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to correct a condition adverse to quality

following discovery of water and mud in safety-related electrical conduit 1K109 associated with the 'A' Standby Diesel Generator (SBDG). Specifically, the licensee identified an obstruction characterized as "mud" located 8-feet from the turbine building (TB) end of conduit 1K109. As a result, the licensee failed to take corrective action to remove the water and mud from the conduit and to evaluate the mud obstruction. The licensee entered the finding into their Corrective Action Program as AR 01909315, "NRC 5059/MOD Inspection Violation of App B Criterion 16," dated October 3, 2013. The licensee has performed insulation resistance checks on the EDG power cable and obtained satisfactory results. Additionally, the licensee performed an evaluation of the mud-like material in the conduit and determined that it is likely cable pulling compound, as opposed to degraded cable jacket material. The licensee also set a date for further inspection of the conduit to April 2014, which coincides with the next EDG outage period. These corrective action items are being tracked in CR 1909315. Additionally the licensee is evaluating the frequency interval for inspecting this and other similar conduits.

The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems' cornerstone's attribute of design control for ensuring the availability, reliability, and capability of systems that respond to Initiating Events to prevent undesirable consequences. Specifically, material characterized by the licensee as mud facilitated continual exposure to a wetted and water submergence environment of the safety-related 'A' SBDG power cables. Continual exposure to a wetted and water submergence environment could lead to cable failure. Cable failure would prevent the system from carrying out its intended safety-related function of automatically starting and connecting to its corresponding essential service bus to supply power to emergency loads in an event (i.e., a loss-of-coolant-accident (LOCA) and/or degraded/under-voltage condition). This finding has a cross-cutting aspect in the area of human performance, decision-making because the licensee did not use conservative assumptions to correct a condition adverse to quality following discovery of water and mud in safety-related electrical conduit 1K109 associated with the 'A' SBDG. Specifically, the licensee failed to perform an effective review of the safety-related consequences of their decision not to complete the inspection of conduit 1K109 to ensure that no water and mud remained inside the conduit subjecting the cables to a submergence environment.
Inspection Report# : 2013008 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: FIN Finding
FAILURE TO PERFORM CAUSAL EVALUATIONS FOR "A" STANDBY FILTER UNIT ISSUES.
A finding of very low safety significance with no associated violation was identified by the inspectors for the licensee's failure to accomplish procedure PI-AA-204, "Condition Identification and Screening Process," Revision 24. Specifically, on September 4, 2014, the inspectors identified that an inappropriate significance level (SL) was assigned to CRs 01976835 and 1977206 following the extension of a planned TS Limiting Condition for Operation (LCO) (treated as an unplanned LCO) due to the failure of the "A" standby filter unit (SFU) exhaust isolation AV-7322A to close in a timely manner during surveillance testing. Although the apparent failure mechanism was known and several corrective actions were taken, an apparent cause evaluation (ACE) was not performed (or ACE-nonperformance justified) to review the cause of the mispositioning as well as why adequate post maintenance testing was not performed following charcoal replacement in January of 2014. The licensee entered the issues into the CAP as CR 01989031, and performed ACEs to evaluate why the speed control valve was out of position closed, why an adequate post maintenance test (PMT) was not performed in January of 2014, and why the inappropriate SL was assigned following the unplanned LCO.

The inspectors determined that the issue of concern represented a performance deficiency because it was the result of

the licensee's failure to meet a procedural requirement, and the cause was reasonably within the licensee's ability to foresee and correct and should have been prevented. Per PI-AA-204, Attachment 3, CRs 01976835 and 01977206 documented extensions of planned LCO entries and should have been assigned SL 2-level ACEs (or non-performance justifications). The performance deficiency was determined to be more than minor and a finding because if left uncorrected, failing to evaluate the cause of inadequate PMTs following maintenance on safety-related equipment would have the potential to lead to a more significant safety concern. The inspectors applied IMC 0609, Attachment 4, "Initial Characterization of Findings," to this finding. The inspectors answered "No" to all questions within Table 3 – SDP Appendix Router, and transitioned to IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." Because the finding only represented a degradation of the radiological barrier function provided for the control room per Exhibit 3 – Barrier Integrity Screening Questions, the finding screened as very low safety significance (Green). The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of H.13, Consistent Process, and involving individuals using a consistent systematic approach to making decisions. Specifically, the failure to appropriately characterize the unplanned LCO to invoke appropriate causal evaluations demonstrated an inconsistency in licensee decision making within the CAP.
Inspection Report# : 2014004 *(pdf)*

Significance:  Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ACCOMPLISH PROCEDURE FOR REPETITIVE MALFUNCTIONS OF REFUEL FLOOR RADIATION MONITOR.
A finding of very low safety significance and associated non-citied 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 accomplish procedure EN-AA-203-1001, "Operability Determinations/Functionality Assessments." Specifically, on multiple occasions but as recently as March 20, 2014, the licensee failed to properly evaluate operability following intermittent downward spikes of the 'A' refueling floor exhaust duct – high radiation monitor (RIS-4131A). The improper operability evaluations resulted in not declaring RIS-4131A inoperable when appropriate, improper prioritization of investigation of the cause, and untimely resolution of the degraded conditions. The licensee entered the inspectors' concerns into the CAP as CR 01954560. The licensee invoked a policy to properly assess operability in the interim, completed a prompt operability determination (POD) to evaluate intermittent downward spikes, completed a past operability review (POR), and ultimately identified the cause and implemented repairs to RIS-4131A.

The inspectors determined that the issue of concern represented a performance deficiency because it was the result of the licensee's failure to meet a procedural requirement, and the cause was reasonably within the licensee's ability to foresee and correct and should have been prevented. The performance deficiency was determined to be more than minor and a finding in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because it impacted the Barrier Integrity Cornerstone Attribute of structure, system, and component (SSC) and Barrier Performance, and adversely affected the Cornerstone objective of maintaining containment and radiological barrier functionality. The inspectors applied IMC 0609, Attachment 4, "Initial Characterization of Findings," to this finding. The inspectors answered "No" to all questions within Table 3 – SDP Appendix Router, and transitioned to IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." Per Exhibit 3 – Barrier Integrity Screening Questions, the inspectors answered "No" to questions B.1 and B.2, and "Yes" to question C.1, therefore, the finding screened as very low safety significance (Green).

The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Human Performance, Consistent Process, and involving individuals using a consistent, systematic approach to make decisions.

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Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: FIN Finding
FAILURE TO PERFORM CRITICAL EQUIPMENT FAILURE EVALUATIONS.
A finding of very low safety significance, with three examples, and no associated violation was identified by the inspectors for the licensee's failure to accomplish procedure ER-AA-204-2005, "Critical Equipment Failure Evaluation," Revision 5. Specifically, on July 11, 2014, the inspector's identified that a critical equipment failure evaluation (CEFE) was not performed following the testing failure of the cable spreading room carbon dioxide fire suppression (CARDOX) system. Although the apparent failure mechanism (solenoid valve (SV)-8521 pilot valve seal failure) was known, and repairs and successful testing was accomplished, a CEFE was not performed to review the adequacy of preventive maintenance bases, operating experience, and effectiveness of prior corrective actions. During a subsequent extent of condition review, two additional instances of failing to perform CEFEs were identified associated with an "A" control building chiller pressure switch failure (safety function maintained) and a fuel pool temperature lost indication (compensatory measures invoked). The licensee entered the issue into the CAP as CR 01977645, performed a CEFE to create a preventive maintenance task for periodic replacement of SV-8521 based on prior failures, and briefed the corrective action program coordinators (CAPCOs) on equipment failure evaluation requirements.

The inspectors determined that the issue of concern represented a performance deficiency because it was the result of the licensee's failure to meet procedural requirements, and the cause was reasonably within the licensee's ability to foresee and correct and should have been prevented. Section 4.1.1.A of ER-AA-204-2005, "Critical Equipment Failure Evaluation," Revision 5, stated, in part, that "a CEFE is required if the condition resulted from a FID 2 component failure that would have led to a FID 2 failure." The licensee did not perform a CEFE for the failure of pilot solenoid valve (SV)-8521. The performance deficiency was determined to be more than minor and a finding because if left uncorrected, failing to conduct evaluations of equipment failures to develop appropriate corrective actions would have the potential to lead to a more significant safety concern. The inspectors utilized IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and concluded that this finding's significance was best characterized by using Appendix M, of IMC 0609, "Significance Determination Process Using Qualitative Criteria." Based upon the fact that the three finding examples did not rise to a level of greater than very low safety significance, the inspectors determined that this issue was best characterized as having very low safety significance (Green). The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Problem Identification and Resolution, Identification, and involving individuals identifying issues completely and accurately in accordance with the corrective action program. Specifically, for each example, condition reports initiated did not clearly identify that an equipment failure occurred which led to an improper screening by the CAPCOs such that CEFEs were not performed.

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Last modified : November 26, 2014