Clinton
4Q/2013 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IMPLEMENT REQUIREMENTS OF STATION SCAFFOLD INSTALLATION PROCEDURE.
Inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings for the failure to follow station procedure MA AA-796-024, “Scaffold Installation, Inspection, and Removal,” Revision 8, to obtain engineering approval for seismic scaffolds not complying with specific requirements of approved station procedures during the C1R14 outage. Specifically, seismic scaffolds identified during walkdowns by the inspectors did not meet procedural requirements for required clearances from or tie off to safety-related components and did not have the required engineering evaluation and approval for acceptability. The licensee documented this issue in the corrective action program (CAP) as Issue Report (IR) 01574003 and completed the required engineering review and approval.
The inspectors determined that the licensee’s failure to follow the station procedure for scaffold installation, inspection, and removal was a performance deficiency. The performance deficiency is more than minor because it was associated with the protection against external factors attribute of the Mitigating Systems (MS) cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Using IMC 0609, Attachment 4 “Initial Characterization of Findings,” and Appendix G “Shutdown Operations Significance Determination Process,” the finding was screened against Attachment 1, Checklist 8 and found to be of very low safety significance (Green) because the finding did not: 1) increase the likelihood of a loss of reactor coolant system (RCS) inventory, 2) degrade the licensee’s ability to terminate a leak path or add RCS inventory when needed, 3) significantly degrade the licensee’s ability to recover decay heat removal once it is lost, 4) result in one or less safety relief valves being available to establish a heat removal path to the suppression pool with the vessel head on. The finding was determined to have a cross-cutting aspect in the area of human performance, associated with the resources component, in that the licensee ensures that personnel, equipment, procedures and other resources are available and adequate to assure nuclear safety. Specifically, the licensee failed to ensure that the scaffold coordinator and superintendents had the required training to assure nuclear safety while erecting seismic scaffolds. [H.2(b)]

Inspection Report# : 2013005 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ASSESS AND MANAGE RISK ASSOCIATED WITH THE PERFORMANCE OF SURVEILLANCE TESTING ON AVERAGE POWER RANGE MONITORS

Inspectors reviewed a self-revealing NCV of 10 CFR 50.65(a)(4) for failing to manage risk when the Division 4 Nuclear System Protection System (NSPS) inverter unexpectedly transferred from its normal direct current (DC) power source to its alternate alternating current (AC) power source during the Average Power Range Monitor (APRM) 'D' surveillance test. Specifically, the installed operational barrier failed to protect a fuse block when a test cable connector was inadvertently dropped. This caused a momentary electrical short and resulted in the inverter to transfer power sources. The licensee documented this issue in the CAP as IR 01476647 and performed (1) a stand-down with instrument maintenance craftsmen to discuss the event and lessons learned, (2) changes to the licensee's risk/hazards assessment process to include a checklist designed to aid in challenging jobsite conditions, (3) conduct of paired observations by maintenance department managers on use of the checklist, and (4) a case study with the maintenance shops using this event to highlight determining risk perception and robust protective barriers.
The inspectors determined that the licensee's failure to adequately manage the risk associated with performance of surveillance testing for APRM 'D' was a performance deficiency. The performance deficiency is more than minor because it was associated with the configuration control attribute of the MS cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The performance deficiency involved the licensee's assessment and management of risk associated with performing maintenance in accordance with 10 CFR 50.65(a)(4); therefore the inspectors used IMC 0609, Attachment 4 "Initial Characterization of Findings," and Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," and determined that a detailed risk evaluation would be required since the issue represented an actual loss of safety function of a system. The Region III Senior Reactor Analyst (SRA) completed a detailed risk evaluation using the NRC's Standardized Plant Analysis Risk (SPAR) model for Clinton Power Station (CPS), Version 8.17 and SAPHIRE Version 8.09 to calculate an Incremental Core Damage Probability Deficit (ICDPD) for the unevaluated condition. The SRA ran the SPAR model conservatively assuming that High Pressure Core Spray System (HPCS) was unavailable during the 6-hour time. The result was an ICDPD of less than 2E-08/year. In accordance with IMC 0609, Appendix K, because the ICDPD was not greater than 1E 06/year, the finding was determined to be of very low safety significance (i.e., Green). The finding was determined to have a cross cutting aspect in the area of human performance, associated with the work practices component, in that personnel work practices are used commensurate with the risk of the assigned task, such that work activities are performed safely. Specifically, the technicians did not perform adequate self or peer checks after installation of the barrier to ensure the barrier would provide protection from shorting. [H.4(a)]

Inspection Report# : 2013005 *(pdf)*

Significance:  Dec 19, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Insulation Resistance Testing for Unit Substation Transformers Was Incorrectly Performed
A finding of very low safety significance (Green) and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed from an event that resulted in a reactor scram. Specifically, during troubleshooting of the Unit Substation "A" transformer failure on December 08, 2013, it was identified that the licensee incorrectly measured the resistance between the transformer windings instead of the winding and ground. The licensee entered this concern into its Corrective Action Program as AR 01594794, and satisfactory re-measured the insulation resistance for the un-faulted transformer 1AP11E.
The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems 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 (Green), because the inspectors answered NO to all Mitigating Systems Screening questions in Exhibit 2 of Appendix A of IMC 0609. The finding was determined to have a cross-cutting aspect in the area of human performance, associated with the work control component, in that the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported. H.4(c).

Inspection Report# : 2013009 *(pdf)*

Significance: G Dec 19, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Acceptance Criteria in the Insulation Resistance Test Procedure
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure to have adequate acceptance criteria in testing procedure. Specifically, the minimum acceptable insulation resistance for transformers as specified in Procedure CPS 8440.01 did not meet the minimum vendor recommended values in accordance with the vendor manual. The licensee entered this concern into its Corrective Action Program as IR 01596730 and IR 01598375. The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring capability and reliability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as very low safety significance (Green), because the inspectors answered NO to all Mitigating Systems Screening questions in Exhibit 2 of Appendix A of IMC 0609. The inspectors identified the finding had a cross-cutting aspect in the area of problem identification and resolution, associated with the corrective action program component because the licensee failed to ensure issues potentially impacting nuclear safety are promptly identified. (P.1(a))

Inspection Report# : 2013009 *(pdf)*

Significance: G Sep 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW PROCEDURE AND APPROPRIATELY DOCUMENT BASIS FOR IMMEDIATE OPERABILITY OF THE DIVISION 2 EMERGENCY DIESEL GENERATOR
An NRC identified non-cited violation of 10CFR50, Appendix B, Criterion V, Instructions, Procedures and Drawings for the failure to follow procedure OP-AA-108-115, "Operability Determinations", Revision 11, and document the basis that a reasonable expectation of operability existed after an immediate operability determination. Specifically, after the control room received a report of a crack on the after cooler ducting of the Division 2 emergency diesel generator the licensee failed to document their basis that a reasonable expectation of operability existed for the Division 2 emergency diesel generator. The licensee documented this issue in the corrective action prgram as Action Request 015401540.

The inspectors determined that the licensee failing to follow the station procedure for operability determinations was a performance deficiency. Specifically, the licensee failed to follow the station procedure for operability determinations and appropriately document the decision and the basis that a reasonable expectation of operability existed for the Division 2 emergency diesel generator. The performance deficiency is more than minor because if immediate operability determination and either the basis that a reasonable expectation of operability exists or the declaration that the system, structure or component is inoperable is not appropriately documented it could lead to a more significant safety concern. Using Manual Chapter 0609, Attachment 4 "Initial Characterization of Findings," and Appendix A "The Significance Determination Process for Findings at Power" the finding was screened against the mitigating systems cornerstone and determined to be of very low safety significance (Green) because the finding was/did not: 1) a deficiency affecting the design or qualification of a mitigating structure, system or component, 2) represent a loss of system and/or function, 3) represent an actual loss of function of a single train for greater than its technical specification allowed outage time, 4) represent an actual loss of function of one or more non-technical specifications trains of equipment designated as high safety-significant for greater than 24 hours and 5) did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding or severe weather event.

The finding was determined to have a cross-cutting aspect in the area of human performance, associated with the decision making component, in that the licnesee decisions failed to demonstrate that nuclear safety is an overriding priority. Specifically, the licensee failed to use their systematic process, when faced with an unexpected plant condition of the Division 2 emergency diesel generator to ensure safety was maintained.. H.1(a).
Inspection Report# : 2013004 *(pdf)*

Significance: G Aug 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO EVALUATE A DEGRADED/NON-CONFORMING CONDITION ON DIESEL FIRE PUMP.
The inspectors identified a finding of very low safety significance associated with the licensee's failure to appropriately evaluate the functionality of the 'B' Diesel Fire Pump (DFP) after identifying a degraded/non-conforming crankcase pressure condition while performing testing on June 13, 2011, and on numerous occasions thereafter, that could have affected the ability of the system to perform a function important to safety. An associated NCV of Clinton Power Station License Condition 2.F was identified. The License Condition required the licensee to implement and maintain in effect all provisions of the approved Fire Protection program as described in the Updated Final Safety Analysis Report (UFSAR). Appendix E, Section 4.0.C.8 of the UFSAR stated that the Clinton Power Station Quality Assurance Program establishes measures for corrective action on conditions adverse to fire protection. Quality Assurance Topical Report (QATR), Chapter 16, Section 2.4 stated that personnel performing the evaluation function of conditions adverse to quality are responsible for considering the cause and the feasibility of corrective action to assure that the necessary quality of an item is not deteriorated. The licnesee entered the issues into the CAP and initiated corrective actions to evaluate the functionality of the 'B' DFP.

The failure to correctly evaluate a degraded/non-conforming condition potentially affecting the functionality of structures, systems, and components (SSCs) important to safety would become a more significant safety concern if left uncorrected because it could reasonably result in an unrecognized condition of an SSC failing to fulfill a function important to safety. In addition, the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of sytems that respond to initiating events to prevent undesirable consequences. Specifically, the degraded condition of high crankcase pressure resulted in repeat operational equipment challenges and extended periods of unavailability of the 'B' DFP. Therefore the finding was of more than minor significance. The finding was a licensee performance deficienty of very low safety significance (Green) because it inolved only a low degradation of the protection against external factors function due to a redundant train that could supply water. The inspectors concluded that this finding affected the cross-cutting area of probelm identification and resolution. Specifically, the licensee failed to thoroughly evaluate problems such that the resolutions addressed causes and extent of condition as necessary for an SSC important to safety when a degraded/non-conforming condtion was identified. [P.1(c)]
Inspection Report# : 2013007 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PERFORM ADEQUATE MOV PREVENTATIVE MAINTENANCE RESULTED IN INOPERABLE RCIC SYSTEM
A finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criteria V, "Instructions, Procedures, and Drawings" was self-revealed when safety-related motor operated valve 1E51-F031, reactor core isolation cooling (RCIC) system suppression pool suction valve, failed to fully close during surveillance testing on October 29, 2012. The valve failure occured due to the licensee's failure to establish an adequate procedure to perform preventive maintenance on it. Specifically, the maintenance procedure did not contain a requirement to stroke a motor operated valve during the performance of periodic stem lubrication activities. The licensee entered this

issue into its corrective action program for evaluation and initiated corrective actions to revise the maintenance procedure.

The finding was of more than minor significance since it was associated with the Procedure Quality attribute and adversely affected the Mitigation Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the valve failure rendered the RCIC system inoperable. This finding is of very low safety significance because it: (1) was not a design or qualification deficiency; (2) did not represent an actual loss of function of a system; (3) did not represent an actual loss of function of a single train or two seprate trains for greater than its Technical Specification (TS) allowed outage time; (4) did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety significant; and (5) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors concluded that this finding affected the cross-cutting area of human performance since adequate licensee resources involving personnel and procedures did not support successful human performance. Specifically, the maintenance procedure was not appropriate to the circumstances because it did not contain adequate instructions to ensure that motor operated valve stems were adequately lubricated. (IMC 0310 H.2 (c))
Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: FIN Finding
FAILURE TO PERFORM ADEQUATE PAST OPERABILITY EVALUATION
The inspectors identified a finding of very low safety significance associated with the licensee's failure to correctly evaluate the past operability of safety-related motor operator valve 1E51-F031, reactor core isolation cooling system suppression pool suction valve, which failed quarterly surveillance testing on October 29, 2012. No violation of regulatory requirements was identified. The licensee entered this issue into its corrective action program for evaluation and initiated corrective actions to revise the past operability evaluation.

The finding was of more than minor significance since the failure to correctly evaluate a degraded/nonconforming condition potentially affecting the operability of structures, systems, and components (SSC) required to be operable by Technical specification (TS) would become a more significant safety concern, if left uncorrected, because it could reasonably result in an unrecognized condition of an SSC failing to fulfill a safety-related function. The finding was a licensee performance deficiency of very low safety significance because it: (1) was not a design or qualification deficiency; (2) did not represent an actual loss of function of a system; (3) did not represent an actual loss of function of a single train or two separate trains for greater than its TS allowed outage time; (4) did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety significant; and (5) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors concluded that this finding affected the cross-cutting area of human performance. Specifically, the licensee failed to use conservative assumptions in decision making while evaluating past operability of the valve by assuming that the time of inoperability was the same as the time of discovery for a time dependent failure mechanism (i.e., hardened grease) since no firm evidence to support operability was obtained by testing. (IMC 0310 H.1(b))
Inspection Report# : 2013002 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2013

Identified By: NRC
Item Type: FIN Finding
FAILURE TO IDENTIFY EMBEDDED OPERATOR CHALLENGE
Inspectors identified a finding of very low safety significance associated with the licensee's failure to identify an embedded operator challenge. Specifically, the licensee proceduralized compensatory actions which were necessary in order to maintain a negative pressure (-0.25 in. H2O) inside the fuel building when opening the inner railroad bay door. The licensee documented this issue in the CAP as IR 1589104 and subsequently screened this issue as an operator challenge.
The inspectors determined that the licensee's failure to identify an embedded operator challenge was a performance deficiency. This finding was more than minor significance because it was associated with the Barrier Integrity Cornerstone attribute of structure, system and component (SSC) and barrier performance, and adversely affected the cornerstone objective to provide reasonable assurance that the physical design barrier of secondary containment protects the public from radionuclide releases caused by accidents or events. This finding is of very low safety significance due to answering 'no' to all questions under the Barrier Integrity Cornerstone column of IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings." The inspectors concluded that this finding affected the cross-cutting aspect of problem identification and resolution. Specifically, the licensee failed to implement its CAP with
a low threshold for identifying issues and did not identify this challenge to operators completely, accurately, and in a timely manner commensurate with its safety significance. [P.1(a)]

Inspection Report# : 2013005 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: FIN Finding
FAILURE TO MAINTAIN RADIATION EXPOSURE ALARA DURING 1R13.
Inspectors reviewed a self-revealing finding due to the licensee having unplanned and unintended occupational collective radiation dose because of deficiencies in the licensee's Radiological Work Planning and Work Execution Program. Specifically, the licensee failed to properly incorporate as-low-as-reasonably-achievable strategies and insights while planning and executing work activity during the C1R13 refueling outage. During the In-Service Inspection (ISI) examinations performed inside the bio-shield, the dose overage was 28.410 person-rem (68 percent higher than initial estimate). This result was caused by poor radiological planning and work execution of these tasks. The licensee entered this issue into their CAP as IR 01593794 and incorporated the lesson learned into the outage planning.
The inspectors determined that the failure to appropriately plan and coordinate outage activities, together with the failure to properly incorporate ALARA strategies or insights while planning and executing ISI examinations inside the bio-shield during the C1R13 refueling outage was a performance deficiency. The finding was more than minor because it was associated with the program and process attribute of the Occupational Radiation Safety Cornerstone. This issue affected the cornerstone objective of ensuring the adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The finding is also very similar to IMC 0612, Appendix E, "Examples of Minor Issues," Example 6.i. This example provides guidance

that an issue is not minor if the actual collective dose exceeded 5 person-rem and exceeded the planned, intended dose by more than 50 percent. The inspectors determined that this finding was of very low safety significance because CPS's 3-year rolling average collective was less than the
240 person-rem/unit referenced within IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process." This finding did not have a cross cutting aspect due to not being reflective of current performance as exemplified by improvements in the recently completed C1R14 outage.

Inspection Report# : 2013005 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW PROCEDURES RESULTED IN THE UNPLANNED INTAKE OF RADIOACTIVE MATERIAL BY FIVE WORKERS.
A self-revealing finding of very low safety significance (Green) and associated Non-Cited Violation of Technical Specification 5.4.1.a for the failure to follow procedures associated with the Radiation Work Permit (RWP) on March 28, 2013. The issue resulted in the unplanned intake of radioactive material by five workers. RWP 10014553, "2013 RW HRA/LHRA," Revision 0, established the requirement for the usage of high efficiency particulate air vacuums during the cleanup of a legacy radioactive resin spill. The licensee replaced this cleanup method with manual resin removal during the cleanup contrary to the conditions set in the RWP. This is a performance deficiency, which was within the licensee's ability to foresee and should have been prevented. The issue was entered into the licensee's corrective action program as Action Request 01494203. The licensee completed actions to ensure worker compliance with radiation protection program procedures.

The performance deficiency was determined to be more than minor safety significance in accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, "Issue Screening," because it was associated with the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that, the workers received additonal and unplanned dose from the intake of radioactive materials, The significance was determined in accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process." The inspectors determined the finding has very low safety significance (Green) because the finding did not involve: (1) As Low As Reasonably Achievable (ALARA) planning or work controls involving excessive occupational collective dose, (2) an overexposure, (3) a substantial potential for overexposure, or (4) compromised ability to assess dose. The primary cause of this finding was related to the cross-cutting aspect of human performance with the component of decision making. The licensee failed to use conservative assumptions in decision making and failed to adopt a requirment to demonstrate that the proposed action is safe in order to proceed. H. 1(b).
Inspection Report# : 2013003 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
INCOMPLETE ED DOSE RATE ALARM EVALUATION
The inspectors identified a finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 20.1501(a) for the failure to perform surveys to ensure compliance with 10 CFR 20.1201 shallow-dose equivalent (SDE) limits for five individuals during the fourth quarter 2011 due to contamination build-up on the workers' gloves. This issue was entered into the licensee's corrective action program as AR 01335298 and AR 01454976. Corrective actions include performing an apparent cause evaluation and performing dose assessments for the individuals involved.

The performance deficiency was determined to be of more than minor safety significance in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the Program And Process Attribute of the Occupational Radiation Safety Cornerstone and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that not performing an adequate SDE assessment affected the licensee's ability to monitor, control, and limit radiation exposures. The inspectors also reviewed the guidance in IMC 0612, Appendix E, "Examples of Minor issues," and did not find any similar examples. In accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined that the finding had very low safety significance because the finding did not involve: (1) ALARA planning and controls, (2) a radiological overexposure, (3) a substantial potential for an overexposure, or (4) a compromised ability to assess dose. The primary cause of this finding was related to the cross-cutting aspect of human performance with the component of work practices. The specific aspect was that the licensee ensures supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported (IMC 0310 H.4(c))
Inspection Report# : 2013002 *(pdf)*

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

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