

Summer

2Q/2012 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Implement a Procedure for Manipulation of the 'C' Main Steam Isolation Valve

A self-revealing, non-cited violation was identified for the failure to comply with Technical Specification 6.8.1 to adequately implement a main steam operating procedure during manipulation of the 'C' main steam isolation valve (MSIV) resulting in excessive steam generator line differential pressure and subsequent safety injection. The issue was entered into the licensee's corrective action program as condition report CR-11-03001.

The failure to implement a procedure for manipulation of the 'C' MSIV was a performance deficiency (PD). The PD was more than minor and therefore a finding because it impacted the initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown and the related attribute of human performance because the licensee failed to properly implement a procedure controlling the manipulation of a MSIV. In accordance with Inspector Manual Chapter 0609, "Significant Determination Process," the inspectors performed a Phase 1 analysis and determined the finding was of very low safety significance or Green because the finding did not contribute to both the likelihood of both a reactor trip and the unavailability of mitigation equipment and associated functions. This finding involved the cross-cutting area of human performance, the component of the resources, and the aspect of procedure use and adherence, H.4(b), because the licensee failed to adequately follow procedures. (Section 4OA3.1)

Inspection Report# : [2011004](#) (*pdf*)

Mitigating Systems

Significance:  Apr 01, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Control Transient Combustibles Adjacent to a Safety-Related Motor Control Center

The inspectors identified a non-cited violation of V.C. Summer Nuclear Station Technical Specification 6.8.1 for a failure to implement the requirements of their fire protection procedures for control of transient combustibles associated with a work activity in the Unit 1 'A' train emergency diesel generator (EDG) motor control center (MCC) room. The licensee entered the problem into their corrective action program as condition report, CR-12-00767.

The inspectors determined that the failure to implement the requirements of the fire protection procedures was a performance deficiency (PD). The inspectors also reviewed Inspection Manual Chapter (IMC) 0612, Appendix B and determined the PD is more than minor and therefore a finding, because (1) it was similar to IMC 0612, Appendix E, Example 4k, and (2) it impacted the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and the related attribute of protection against external factors such as fire. The inspectors used IMC 0609, Appendix F, Attachments 1 and 2 to determine that the finding was of very low safety significance or Green because of the low fire frequency of the Unit 1 EDG MCC room and the short duration of the violation. The cause of this finding involved the cross-cutting area of human performance, the component of work practices, and the aspect of work activity planning, H.3 (a), because the licensee failed to adequately evaluate transient combustible controls during planning for a work

activity to monitor overloads in safety-related breakers. (Section 1R05)

Inspection Report# : [2012002](#) (pdf)

Significance:  Apr 01, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Inspect Service Water Pump Motor Lube Oil Heat Exchangers

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to adequately prescribe a procedure to inspect the service water (SW) pump motor lube oil heat exchangers (HXs) as committed to in the licensee's Generic Letter 89-13 response dated January 31, 1990. Specifically, a review of SW pump motor lube oil HX inspection documents identified that the licensee was not inspecting the internals of the lube oil HXs and did not adequately implement other accepted performance monitoring methodologies. The issue was entered into the licensee's corrective action program as condition report CR-12-00844.

The inspectors determined that the failure to adequately prescribe a procedure to inspect the SW pump motor lube oil HXs was a performance deficiency (PD). The inspectors also reviewed Inspection Manual Chapter (IMC) 0612, Appendix B and determined the PD is more than minor and therefore a finding, because it adversely impacted the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and the respective attribute of procedure quality because inadequate monitoring of the HX performance would lead to a common mode failure mechanism that would adversely impact the safe operation of the SW pumps during severe environmental conditions. The inspectors performed a risk evaluation using IMC 0609, Appendix A, Phase 1, and determined the finding has very low safety significance (Green) because it was not a design deficiency, did not represent a loss of safety function and did not screen as potentially risk significant due to a seismic, flooding or severe weather initiating event. The cause of this finding did not involve a cross-cutting aspect because it is not indicative of current licensee performance. (Section 1R07)

Inspection Report# : [2012002](#) (pdf)

Significance:  Apr 01, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Analyze a Moderate Energy Fluid System for Leakage Cracks

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to analyze a moderate energy fluid system for leakage cracks resulting in flooding and/or spray as described in the licensee's Facility Safety Analysis Report (FSAR). Specifically, chilled water piping, located in a fan room located above and with access to the safety-related 1DB switchgear room, was not analyzed for leakage cracks. This issue was entered into the licensee's corrective action program as condition report, CR-12-00844.

The inspectors determined that the failure to analyze a moderate energy fluid system for leakage cracks as described in the FSAR was a performance deficiency (PD). The inspectors also reviewed Inspection Manual Chapter (IMC) 0612, Appendix B and determined the PD is more than minor and therefore a finding, because (1) it was similar to IMC 0612, Appendix E, Example 3i, in that the licensee had to perform calculations to show that design basis requirements were met, and (2) it adversely affected the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and the respective attribute of design control because the licensee failed to analyze a chilled water pipe which presented a vulnerability to a safety-related motor control center that was not designed for water spray. The inspectors reviewed IMC 0609, Attachment 4, and determined that the finding was of very low safety significance, or Green, because the finding was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The cause of this finding did not involve a cross-cutting aspect because it is not indicative of current licensee performance. (Section 1R15.1)

Inspection Report# : [2012002](#) (pdf)

G**Significance:** Apr 01, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Promptly Correct Conditions Adverse to Quality for Lightning Induced Trips of Safety-Related Chillers

A non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified by the inspectors for two examples of the failure to promptly identify and correct a condition adverse to quality (CAQ) involving safety-related chiller trips due to lightning. The licensee entered these problems into their corrective action program as condition reports, CR-11-03187 and CR-11-05225.

The inspectors determined that the failures to promptly identify and correct the CAQs for the trips of safety-related chillers due to lightning were performance deficiencies (PDs). The inspectors reviewed Inspection Manual Chapter (IMC) 0612, Appendix E and determined the PDs were more than minor and therefore findings, because they were similar to Examples 4d and 4f in that the failure to correct a condition adverse to quality led to the inoperability of the component. The inspectors determined the PDs were also more than minor because they impacted the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and the respective attribute of protection against external factors such as lightning. The inspectors reviewed IMC 0609, Attachment 4 and determined that the findings were of very low safety significance or Green because the findings were not a design deficiency confirmed not to result in loss of functionality, were not a loss of safety function, and did not screen as potentially risk significant for a severe weather initiating event. The cause of the findings involved the cross-cutting area of problem identification and resolution, the component of corrective action program, and the aspect of complete and thorough evaluation, P.1(c), because the licensee failed to identify corrective actions for the safety-related chiller trips caused by lightning. (4OA5.2)

Inspection Report# : [2012002](#) (*pdf*)**G****Significance:** Apr 01, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Fire Protection Program Requirements for Procurement and Use of Approved Fire Hose

The NRC identified an apparent violation of V.C. Summer Nuclear Station's Renewed Operating License NPF-12, 2.C(18), "Fire Protection System," with two examples for the failure to comply with Fire Protection Program (FPP) requirements in which the licensee used unapproved fire hoses. Specifically, the licensee selected non-collapsible hose with an incorrect minimum bend radius and failed to use lined fire hose. The issue was entered into the licensee's corrective action program as condition reports (CR), CR-11-05578 and CR-11-05852.

The inspectors determined that the procurement and use of the fire hose, which was not in accordance with the FPP, was a performance deficiency (PD). The inspectors also reviewed Inspection Manual Chapter (IMC) 0612, Appendix B and determined the PD is more than minor and therefore a finding, because it impacted the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and the respective attribute of protection against external factors such as fire. The inspectors reviewed IMC 0609, Appendix F, Attachments 1 and 2, and determined that the finding was potentially of moderate safety significance because the non-collapsible rubber hose and portable extinguishers are the only local means of fire suppression for several fire zones, of which the most significant are the 7.2 kV safety-related switchgear rooms. The inspectors determined that because multiple fire areas were affected, a phase 3 SDP risk assessment was required. The phase 3 SDP risk assessment was performed by a regional senior reactor analyst using the guidance of NRC IMC 0609 Appendix F and NUREG/CR 6850, Revisions 0 and 1. Significant assumptions affecting the analysis are listed in the analysis section of 4OA5.2. The conditional core damage probability for the various fire scenarios was developed using the NRC's latest V.C. Summer Saphire 8 SPAR model. The risk was mitigated by the fact that most of the failed hoses served areas which were equipped with fixed suppression and that the areas served by the failed hoses did not contain many fixed ignition sources. The result of the phase 3 analysis was that the performance deficiency resulted in an increase in core damage frequency of <1E-6 per year, a GREEN finding of very low safety significance. The cause of the finding involved the cross-cutting area of human performance, the component of work practices, and the aspect of procedural compliance, H.4(b), because the licensee

failed to follow FPP procedural and program requirements for proper fire hose selection and use. (Section 40A5.2)

This Apparent Violation (AV) was closed as a Non-Cited Violation (NCV) based on results of NRC Phase 3 evaluation. This NCV was discussed and documented in the NRC inspection report no. 05000395/2012003.

Inspection Report# : [2012002](#) (*pdf*)

Barrier Integrity

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

Last modified : September 12, 2012