Farley 1
2Q/2014 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 06, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Operability Evaluation of the CCW Miscellaneous User Isolation Valves
Green. The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the licensee’s failure to perform an adequate operability evaluation following the discovery that the component cooling water miscellaneous user isolation valves would not isolate the safety-related piping from the non-safety related portion. The licensee entered the issue into their corrective action program as condition report 823056. In 2013, the valve actuators were modified from air to open and close, to a spring to close design so this is not a current operability issue.

The team determined that the failure to perform an adequate operability evaluation as required by NMP-AD-012, “Operability Determinations and Functionality Assessments,” was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective of ensuring
the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the inspectors had reasonable doubt on the past operability of component cooling water because the operability evaluation relied on assumptions that were not correct, regarding the ability to establish make-up water to the on-service component cooling water train. The team performed a significance screening of this finding using the guidance provided in IMC 0609, “Significance Determination Process,” ttachment 0609.04, “Initial Characterization of Findings.” The team determined the finding required a detailed risk evaluation in accordance with Exhibit 2, "Mitigating Systems Screening Questions," and Exhibit 4, "External Event Screening Questions.” A risk analysis was completed by a regional senior reactor analyst in accordance with the guidance of NRC IMC 0609 Appendix A. A bounding analysis was performed using Farley site specific seismic data and a conditional core damage probability determined using the NRC Farley SPAR PRA model. In addition, NUREG/CR6544 and NUREG/CR4550 show SSC fragility data for generic component types. From Table 1 Generic Seismic Fragilities the data shows that offsite power would be affected at 0.3G, electrical equipment and large flat bottomed storage tanks at approx. 1G, heat exchangers at 1.9 G with motor driven pumps at 2.0 G and piping at 3.8G. The major analysis assumptions included: a one year exposure period, no credit for the reactor coolant pump (RCP) shutdown seals, the performance deficiency was assumed to result in lowering surge tank level and subsequent common cause failure of all three CCW pumps with no recovery, and the miscellaneous headerpiping and components were assumed to fail from a seismic event of magnitude 0.3 –
0.5 G. The dominant sequence was a loss of RCP seal cooling resulting in an RCP seal LOCA caused by loss of CCW. The risk was mitigated by the low frequency of the seismic initiating event. The analysis determined that the risk increase due to the performance deficiency was an increase in core damage frequency of < 1E-6/year, a GREEN finding of very low safety significance. The team did not identify a cross-cutting aspect associated with this finding because this performance deficiency was not indicative of present licensee performance. (Section 1R21.2b.1)

Inspection Report# : 2014007 *(pdf)*

Significance: G Jun 06, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with IEEE 308-1971 for the Required Independence of 120 Volt Vital AC Distribution System Channels
Green. The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to demonstrate compliance with IEEE 308-1971 for the required independence of 120V vital AC distribution system channels. The licensee entered the issue into their corrective action program as condition report 820528 and performed an immediate determination of operability and determined that the inverters were operable but non-conforming.

The team determined that the failure to conform to the independence requirements of IEEE 308-1971, to which the licensee was committed, was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding resulted in a condition where there was a reasonable doubt of the operability of the 120V vital AC distribution system channels. In addition, the performance deficiency is similar to example 3j of IMC 0612, Appendix E, "Examples of Minor Issues." The team determined that the finding was of very low safety significance (Green) because it was not a design deficiency resulting in the loss of functionality or operability. The team did not identify a cross-cutting aspect associated with this finding because this performance deficiency is not indicative of present licensee performance.
Inspection Report# : 2014007 *(pdf)*

Significance: G Jun 06, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Lack of Validated Time Critical Operator Actions Analyses
Green. The team identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to promptly correct a lack of documented verification and validation for time critical operator actions which are inputs into design basis plant safety analyses. The licensee entered the issue into their corrective action program as condition report 823401. Initial time validations of the more limiting time critical operator actions have been completed and the remaining Updated Final Safety Analysis Report (UFSAR) described time critical operator actions have been identified and scheduled for validation.

The team determined the licensee's failure to promptly correct a lack of documented verification and validation for time critical operator actions, which are inputs into design basis plant safety analysis was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the programmatic

failure to ensure design basis operator actions could be accomplished within required time limits could impact the availability and capability of systems that respond to initiating events and result in unanalyzed plant conditions. The team determined that the finding was of very low safety significance (Green) because it was not a design deficiency resulting in the loss of functionality or operability. The team determined this finding was associated with the cross-cutting aspect of Evaluation in the area of Problem Identification and Resolution because following the identification of this deficiency in 2012, the licensee did not adequately evaluate the current operability for mitigating SSCs reliant upon these time critical operator actions described in the UFSAR. [P.2]
Inspection Report# : 2014007 *(pdf)*

Significance: G Jun 06, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Acceptance Criterion for UHS Temperature Did Not Consider Instrument Uncertainty
Green. The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the licensee’s failure to include an appropriate acceptance criterion for ultimate heat sink (UHS) temperature in surveillance procedures. Specifically, the acceptance criterion did not account for instrument uncertainty. The licensee entered the issue into their corrective action program as condition report 810638. As an immediate corrective action, the licensee established an action tracking item for control room operators to declare UHS inoperable if indicated temperature exceeded 90 degrees Fahrenheit. In addition, the licensee performed a historic review and did not find an example where the technical specifications (TS) temperature limit of 95 degrees Fahrenheit was exceeded.

The team determined the failure to include appropriate acceptance criterion for UHS temperature in surveillance procedures was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of the UHS system to respond to initiating events to prevent undesirable consequences. Specifically, the failure to account for UHS temperature instrument uncertainty was significant enough to require revision of the associated surveillance procedures to ensure the validity of heat exchanger performance calculations and compliance with TS limits. The team determined the finding was of very low safety significance (Green) because it was not a design deficiency resulting in the loss of functionality or operability. The team did not identify a cross-cutting aspect associated with this finding because it is not indicative of present licensee performance.
Inspection Report# : 2014007 *(pdf)*

Significance: G Jun 06, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Acceptance Criterion for Testing of Check Valves
Green. The team identified a Green non-cited violation of 10 CFR 50.55a(f), "Inservice testing requirements," subsection (4), American Society of Mechanical Engineers Operation and Maintenance of Nuclear Power Plants code, Subsection ISTC-5221, “Check Valves,” with two examples for the licensee’s failure to incorporate adequate

acceptance criteria for testing safety-related check valves into the procedures. The licensee entered both examples into their corrective action program as condition reports 816150 and 816303. A review of past pump data and testing indicated the check valves caused no degradation to the high-head safety injection system.

The team determined the failure to establish acceptance criteria that demonstrates closure of safety-related check valves was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design 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. Specifically, testing Unit 1 & 2 refueling water storage tank (RWST) supply to charging header check valves (Q1/2E21V026) using an acceptance criterion of boric acid tank pump discharge pressure greater than 80 psig (normally 115+ psig) with no change in boric acid tank level, may have resulted in the check valves not seating and allowed reverse flow to the RWST. In addition, using an acceptance criterion of no reverse rotation of the charging pump impeller when testing the Unit 1 & 2 charging pump mini-flow check valves (Q1/2E21V0121) and Unit 1 & 2 charging pump discharge check valves (Q1/2E21V0122) may result in the check valves not seating and challenge high head safety injection flow. The team determined that the finding was of very low safety significance (Green) because it was not a design deficiency resulting in the loss of functionality or operability. The team did not identify a cross-cutting aspect associated with this finding because it is not indicative of present licensee performance.
Inspection Report# : 2014007 *(pdf)*

Significance: G Jun 06, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Characterization of IST Program Valves
Green. The team identified a Green non-cited violation of 10 CFR 50.55a(f), “Inservice testing requirements,” subsection (4), American Society of Mechanical Engineers Operation and Maintenance of Nuclear Power Plants code, Subsection ISTC-1300, “Valve Categories,” for the licensee’s failure to categorize Unit 1 & 2 charging pump suction isolation valves (LCV115 B &D), and Unit 1 & 2 refueling water storage tank (RWST) supply to charging header check valves (Q1/2E21V026) as Class “A” for which seat leakage is limited to a specific maximum amount in the closed position. Specifically, the licensee’s inservice testing program did not test safety-related valves to ensure they could perform their safety function in the closed direction and meet seat leakage requirements. The licensee entered the issue into their corrective action program as condition reports 823022 and 815699. A review of past pump data indicated the valve held against system pressure and would not allow a significant reverse flow.

The team determined that failure of the licensee to properly categorize LCV115 B & D and QV026 in their inservice testing program to ensure they could perform their safety function was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design 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. Specifically, the licensee failed to properly categorize valves as Category “A” resulting in failure to leak test the valves to ensure

reverse flow of containment sump water to the RWST did not result in exceeding the plant's post accident dose rate limits. The team determined the finding was of very low safety significance (Green) because it was not a design deficiency resulting in the loss of functionality or operability. The team did not identify a cross-cutting aspect associated with this finding because it is not indicative of present licensee performance.
Inspection Report# : 2014007 *(pdf)*

Significance: G Jun 06, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure that the RHR System Would Be Capable to Mitigate a MODE 4 LOCA
Green. The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to ensure the residual heat removal (RHR) system would be capable to respond to a MODE 4 loss of coolant accident (LOCA). Specifically, low pressure coolant injection may not be available during MODE 4, which is required for a large break LOCA. The licensee entered the issue into their corrective action program as condition report 826059. As an immediate corrective action, the licensee performed an extent of condition to identify other deficient procedures. In addition, the licensee implemented action tracking items in the control room to limit one train of decay heat removal operation while above 212 degrees Fahrenheit.

The team determined that the failure to ensure that RHR would be capable to respond to a LOCA that initiates in MODE 4 as required by TS 3.5.3., "ECCS - Shutdown," was a performance deficiency. 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. Specifically, procedures and design for the RHR system did not ensure the capability to perform its emergency core cooling system mitigating function of low pressure injection while in MODE 4 because steam void formation could occur and was not evaluated. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609 Attachment 4 and was transitioned to IMC 0609 Appendix G as the finding represented a degraded condition, which could occur only during shutdown conditions. NRC IMC 0609 Appendix G Attachment 1 screening determined that the finding represented a potential loss of system safety function and required a phase 2 shutdown risk assessment. A bounding phase 2 shutdown risk assessment was performed by a regional senior reactor analyst in accordance with NRC IMC 0609 Attachment 2. The major assumptions in the analysis included an exposure interval of 5 minutes for Unit 1 only and a bounding conditional core damage probability of 1.0 given a LOCA. The risk was mitigated by the short exposure period and the low probability of a LOCA during shutdown conditions. The result of the analysis was an increase in core damage frequency of < 1E-6/year a GREEN finding of very low safety significance. The team did not identify a cross-cutting aspect associated with this finding because it is not indicative of present licensee performance.
Inspection Report# : 2014007 *(pdf)*

Significance: G Mar 31, 2014

Identified By: NRC
Item Type: NCV NonCited Violation
Lack of acceptance criteria for nuclear instrument channel checks
The inspectors identified an NCV of 10 CFR 50 Appendix B, Criterion V, “Instructions, Procedures and Drawings,” was identified for the licensee’s failure to include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, licensee procedures FNP-1-STP-1.0 and FNP-2-STP-1.0, “Operations Daily and Shift Surveillance Requirements,” did not include acceptance criteria for the intermediate range (IR) neutron flux channel check required by technical specifications (TS). The licensee entered this issue into their corrective action program as CR 775544 and was evaluating corrective actions.

The failure to include appropriate qualitative or quantitative acceptance criteria for the IR nuclear instruments channel check surveillance was a performance deficiency. The performance deficiency was more than minor because it adversely affected the procedure quality attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the lack of qualitative or quantitative acceptance criteria for the IR channel check impacted the determination of continued operability of the NI-36 instrument channel during the reactor startup. This finding was evaluated using IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” issued June 19, 2012. This finding screened to Green because the questions listed under the Reactivity Control Systems in Exhibit 2, Mitigating Systems Screening Questions of IMC 0609, Appendix A, were answered “No”. The inspectors determined the finding had a cross-cutting aspect of “resources” in the human performance area because procedures did not have adequate acceptance criteria to perform TS required IR neutron flux channel checks. [H.1] (Section 1R15)

Inspection Report# : 2014002 *(pdf)*

Significance: G Sep 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to implement fire protection program requirements
A self-revealing NCV of TS 5.4.1.c, “Fire Protection Program Implementation,” was identified, because the licensee failed to implement written procedures to cover activities of the Fire Protection Program as documented in Appendix 9B of the updated final safety analysis report (UFSAR). As a result, an inadvertent carbon dioxide (CO2) discharge occurred on August 3, 2013 which required evacuation of the Unit 1 auxiliary building and an Alert Emergency declaration. The licensee completed the low pressure (LP) CO2 system maintenance, replaced the hazard pilot valve and verified it was left in the correct position. Performance of licensee procedure FNP-0-FSP-57.0 was planned for completion per technical evaluation (TE) 704305. This issue was captured in the licensee’s CAP as CR 682967. This violation is applicable to Unit 1.

Failure to verify proper operation of hazard pilot valve N1V43G076 following maintenance as required in work order (WO) SNC 54604 was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the protection against external events (fire) attribute of the mitigating systems 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. Specifically, the inadvertent discharge of CO2 into the Unit 1 auxiliary building resulted in an atmosphere that was determined to be an immediate danger to life and health (IDLH). Respirators would be required in this area which would cause an undue burden on the operators’ ability to respond to events requiring manual operator actions. The inspectors evaluated this finding using the NRC’s SDP and IMC 0609 Attachment 4, “Initial Characterization of Findings.” Because the finding involved a fixed fire protection system, an evaluation using IMC 0609 Appendix F, Attachment 1, “Fire Protection SDP Worksheet,” was required. The finding screened to Green because it would not affect the ability to reach and maintain safe shutdown conditions. The inspectors concluded that the time critical operator actions needed to support safe

shutdown could be achieved with the use of respirators and operators are properly trained and qualified to use respirators. The cause of this finding was directly related to the cross-cutting aspect of maintenance scheduling in the work control component of the human performance area, because the licensee deferred the performance of procedure FNP-0-FSP-57.0 which would have identified the hazard pilot valve was partially open following completion of maintenance on the valve. [H.3(b)]. (Section 4OA2.2)

Inspection Report# : 2013004 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: W Dec 31, 2013
Identified By: Licensee
Item Type: VIO Violation
Calculation Error Results in Significantly non-Conservative EAL Threshold Values
White: A finding and associated violation of 10 CFR 50.54(q)(2) was identified by the licensee for the failure to follow and maintain the effectiveness of emergency plans which use a standard emergency classification and action level scheme. Specifically, the licensee's emergency plan emergency action level (EAL) Category R – Abnormal Radiological RG1 (General Emergency) and RS1(Site Area Emergency) specified threshold values which were sixty times too high due to a calculation error. As immediate corrective action, the licensee provided the corrected threshold values to appropriate management and decision-makers (shift managers/emergency directors). The licensee entered this issue into the corrective action program as CR 648187.

The performance deficiency was determined to be more than minor because it was associated with the emergency preparedness cornerstone attribute of procedure quality. It impacted the cornerstone objective because it was associated with inappropriate EAL and emergency plan changes and their adequacy to protect the health and safety of the public in the event of a radiological emergency. Specifically, the licensee's ability to declare a Site Area and General Emergency based on effluent radiation monitor values was degraded in that event classification using these radiation monitors would be delayed. The finding was assessed for significance in accordance with NRC Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," which states, "FAILURE TO COMPLY means that a program is noncompliant with a REGULATORY REQUIREMENT." The inspector determined that the situation constituted a degraded rather than failed risk-significant planning standard (RSPS). The issue of concern was similar to the example in Table 5.4.1 (Degraded RSPS) and was determined to be of low to moderate safety significance (White). The violation was determined to meet the IMC 0305 criteria for enforcement discretion as an old design issue. A cross-cutting aspect was not assigned based on the elapsed time since the performance deficiency occurred and because the inspectors determined it was not reflective of current licensee performance. (Section 4OA2)

Inspection Report# : 2013005 *(pdf)*

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: N/A Jun 06, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Update the UFSAR with the Safety Analysis Performed in Response to GL 2008-01
Severity Level IV. The team identified a Severity Level (SL) IV non-cited violation of 10 CFR 50.71, "Maintenance of Records, Making of Reports," for the licensee's failure to update the Updated Final Safety Analysis Report (UFSAR). Specifically, the UFSAR was not updated to reflect the analysis requested by the NRC in GL 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems." The licensee entered the issue into the corrective action program as condition report 823270.

The team determined the failure to update the UFSAR with the analyses performed for GL 2008-01 was a performance deficiency. Failures to update the UFSAR are dispositioned using the traditional enforcement process instead of the SDP in accordance with IMC 0612, Appendix B, Block TE2, because they potentially impede or impact the regulatory process. Specifically, failures to update the UFSAR challenges the regulatory process because it serves as a reference document used, in part, for recurring safety analyses, evaluating license amendment requests, and in preparation for and conduct of inspection activities. As a result, the team compared the performance deficiency against the examples in Section 6.1 of the NRC Enforcement Policy and determined it constituted a more than minor traditional enforcement violation because it rose to a SL-IV violation. Specifically, SL-IV violation example d.3 stated "A licensee fails to update the UFSAR as required by 10 CFR 50.71(e) but the lack of up-to-date information has not resulted in any unacceptable change to the facility or procedures." The team determined an evaluation for cross-cutting aspect was not applicable because this was a traditional enforcement violation.
Inspection Report# : 2014007 *(pdf)*

Last modified : August 29, 2014