Farley 1
4Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Loss of shutdown cooling due to an unplanned loss of Train A 4160v safety related switchgear
A Green self revealing non-cited violation (NCV) of Technical Specifications (TS) 5.4.1.a, Procedures, was identified for the failure to accomplish shutdown of the 1-2A emergency diesel generator (EDG) in accordance with station procedure FNP-1-STP-40.0. The failure resulted in a loss of all shutdown cooling to the Unit 1 reactor. The licensee correctly diagnosed the unplanned loss of shutdown cooling and promptly restarted the 1A residual heat removal (RHR) pump. This violation was entered into the licensee's corrective action program as condition report (CR) 434764.

Failure to accomplish shutdown of the 1-2A EDG in accordance with station procedure FNP-1-STP-40.0, is a performance deficiency. The performance deficiency was more-than-minor because it adversely affected the Initiating Events Cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, all shutdown cooling to the reactor was lost when 1A RHR pump stopped operating due to loss of electrical power. This finding was assessed using IMC 0609 Attachment 4, Initial Characterization of Findings; Appendix G, Shutdown Operations Significance Determination Process; and Appendix G, Attachment 1, Phase 1 Operational Checklist for Both PWRs and BWRs. The finding was determined to be of very low safety significance (Green) because the inadvertent change in RCS temperature due to loss of RHR was less than 20 percent of the temperature margin time to boil and did not trip any of the criteria of Appendix G, Attachment 1, Checklist 4. The inspectors determined this performance deficiency has a cross-cutting aspect in the area of human performance and resources component because the licensee did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, step 5.36.4 of FNP-1-STP-40.0, was inadequate and confusing which resulted in a failure to comply with the procedure. [H.2(c)] (Section 4OA3)
Inspection Report# : 2012004 *(pdf)*

Significance: G Jun 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadvertent transfer of approximately 5000 gallons of borated water from the RWST to the RCS refueling cabity and spent fuel pool
A self-revealing Green non-cited violation of Technical Specification 5.4.1, Procedures, was identified for the licensee's failure to adhere to the information contained within clearance 1-DT-24-E21-03211. This failure resulted in the unplanned transfer of approximately 5000 gallons of borated water from the refueling water storage tank (RWST) to the reactor coolant system (RCS) refueling cavity and spent fuel pool. In the evening hours of April 10, 2012, operations permit tagout holders allowed the manipulation of Q1E11MOV8706B and Q1E21LCV115D which created an open pathway from the RWST to the RCS refueling cavity and spent fuel pool. Q1E21LCV115D was prohibited from being open by clearance 1-DT-24-E21-03211 while Q1E11MOV8706B was open. The control room staff isolated the unintended flow path and entered the condition into their corrective action program. The licensee conducted an apparent cause determination.

The licensee failure to adhere to the information contained within clearance 1-DT-24-E21-03211 is a performance deficiency. This performance deficiency is more than minor because it is associated with the configuration control attribute of the Initiating Events cornerstone and adversely affected the objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations.

Specifically, the configuration of the residual heat removal (RHR), chemical volume and control system, and refueling water storage tank were not maintained as required and approximately 5000 gallons of borated water was transferred from the RWST to the reactor refueling cavity. The significance of this finding was screened using IMC 0609, Significance Determination Process (SDP), Phase 1 worksheets of Attachment 4. The inspectors also referenced IMC 0609, SDP worksheets of Appendix G, Shutdown Operations Significance Determination Process. The finding screened very low safety significance, Green, because it did not meet any of the loss of coolant accident, transient and external event initiators of the worksheets of Attachment 4. The inspectors reviewed this performance deficiency for cross-cutting aspects and determined the licensee failed to appropriately coordinate work activities by incorporating actions to address the impact of the work on different job activities, and the need for work groups to communicate, coordinate, and cooperate with each other during activities in which interdepartmental coordination is necessary to assure plant and human performance. The finding was assigned a cross-cutting aspect in the work control component of the human performance area H.3(b). (Section 4OA2)

Inspection Report# : 2012003 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Damaged wiring and resistors in the static exciter and voltage regulator circuit of 1C EDG
A Green self revealing NCV of TS 5.4.1.a, Procedures, was identified for the failure to accomplish the installation of the auxiliary contacts of the K1 relay associated with the 1C emergency diesel generator (EDG) in accordance with station work order SNC92235. The improper installation resulted in a direct short of control circuitry wiring and damage to installed resistors and wiring. Local annunciator panels alarmed and the licensee promptly shutdown the engine. The licensee replaced damaged wiring and resistors. This violation was entered into the licensee's corrective action program as condition report (CR) 467468.

Failure to accomplish the installation of the auxiliary contacts of the K1 relay associated with the 1C EDG in accordance with station work order SNC92235 is a performance deficiency. The performance deficiency adversely affects the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the equipment performance objective of availability was adversely affected due to the damage caused to the static exciter and voltage regulator circuit of the generator and the additional unavailability time accrued to effect repairs. This finding was assessed using IMC 0609 Attachment 4, Initial Characterization of Findings; and IMC 0609 Appendix A, The Significance Determination Process (SDP) for Findings At-Power. The IMC 0609 Appendix A review, determined that the finding was of very low safety significance (Green) because the performance deficiency resulted in additional EDG unavailability that did not exceed the period of the TS Limiting Condition for Operation. The inspectors determined this performance deficiency has a cross-cutting aspect in the area of human performance and resources component because the licensee did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, station work order SNC92235 only provided high level guidance for replacing the K1 relay which was insufficient to ensure proper replacement of the relay and was therefore inadequate. [H.2(c)] (Section 1R12)

Inspection Report# : 2012004 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement design control measures to verify the adequacy of CST design
The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to implement design control measures to verify the adequacy of design inputs, assumptions, or

limiting plant conditions which were relied upon in the design basis analyses used to demonstrate the adequacy of condensate storage tank (CST) design. The licensee entered these issues into their corrective action program as condition reports 351170, 353599, and 355457. The licensee performed operability evaluations in support of current operability and implemented additional compensatory measures to ensure that CST level would be maintained above the condenser hotwell make-up elevation pending completion of proposed long term corrective actions. These proposed corrective actions included the more detailed design basis analysis required to support a license amendment request to increase the minimum volume of water specified by the limiting condition for operation in Technical Specification 3.7.6.

The failure to utilize conservative design inputs, assumptions, or limiting plant conditions when implementing design control measures to verify the adequacy of CST design 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. In accordance with NRC inspection manual chapter 0609.04, “Initial Screening and Characterization of Findings,” the inspectors used the mitigating systems column to perform a phase 1 significance determination process screening, and determined the finding to be of very low safety significance (Green). This determination was based on the fact that the performance deficiency was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not affect external event mitigation. A cross-cutting aspect was not identified because the design basis calculation associated with the performance deficiency was last approved on March 25, 1999, and therefore, did not represent current licensee performance. (Section 1R21.1)
Inspection Report# : 2012003 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform ISI general visual examinations of containment moisture barrier associated with containment liner leak chase test connection threaded pipe plugs
The inspectors identified a Green non-cited violation of 10 CFR Part 50.55a, “Codes and Standards,” involving the licensee’s failure to properly apply Subsection IWE of ASME Section XI for conducting general visual examinations of the metal-to-metal pipe plugs installed in the containment liner channel weld leak chase test connections that provide a moisture barrier to the containment liner seam welds. Following the inspectors’ identification of this issue, the licensee conducted the visual examinations and found missing covers on two of the leak chase test connection upper cavities. Upon further inspection of both of these leak chase test connections, the licensee found blockages in the test connection piping and significant corrosion of the metal plate making up the upper cavities. The licensee found one leak chase test connection lower cavity to be full of water, which was tested and determined to be borated water. The licensee adequately evaluated the deficiencies prior to entering Mode 4 (Hot Shutdown) to ensure the integrity of containment was maintained. The license conducted the required in-service inspection general visual examinations of the 45 leak chase test connections and found two covers were degraded and two other covers were missing. The licensee conducted further inspections on the two connections that did not have a cover and found, and removed, blockages from both test connections and water from one test connection. The licensee further evaluated these four connections to verify that containment integrity had been maintained and would continue to be maintained through the next operating cycle. The licensee entered this issue into their corrective action program as condition report (CR) 437663. The licensee was evaluating planned corrective actions at the conclusion of this inspection period.

The failure to conduct a general visual examination of 100 percent of the moisture barriers intended to prevent intrusion of moisture against inaccessible areas of the containment liner at metal-to-metal interfaces which are not seal welded, was a performance deficiency that was within the licensee’s ability to foresee and correct. This finding was of more than minor significance because the failure to conduct required visual examinations and identify the degraded

moisture barriers which allowed the intrusion of water into the liner leak chase channel, if left uncorrected, would have resulted in more significant corrosion degradation of the containment liner or associated liner welds. The finding was associated with the design control attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, visual examinations of the containment metal liner provide assurance that the liner remains capable of performing its intended safety function. The inspectors used IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of the reactor containment.

The inspectors identified a cross-cutting aspect in the Operating Experience component of the Corrective Action Program (CAP) cross-cutting area (P.2(b)). In their evaluation of the issue, the licensee identified relevant Operating Experience (OE) from four other plants. The inspectors concluded that the licensee did not use this information to make changes in station processes that would implement the ASME Code requirement and would have prevented the intrusion of water into inaccessible containment liner seam welds. (Section 1R08)
Inspection Report# : 2012003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: FIN Finding
Failure to monitor for auxiliary building airborne radioactivity levels as described in the FSAR
The inspectors identified a Green finding for failure to meet the FSAR continuous online radiation monitor design bases as described in FSAR Section 12.2.4, Airborne Radioactivity Monitoring. Specifically, six of the nine continuous online radiation monitors, R-30 series, provided to monitor airborne radiation concentrations within select Unit 1 and Unit 2 Auxiliary Building locations have been out of service (OOS) for extended periods of time over the past two and half years. Further, no reviews were completed to evaluate the significance of the OOS monitors nor were compensatory sampling activities performed during the extended OOS periods. The licensee entered this issue into their corrective action program as Condition Report (CR) 44407, and CR 463051, and implemented compensatory activities.

The inspectors determined that the failure to monitor airborne radioactivity levels as described in FSAR Section 12.2.4 was a performance deficiency. The finding is greater than minor because it is associated with the Occupational Radiation Safety Cornerstone attribute of Plant Facilities/Equipment and Instrumentation and adversely affects the cornerstone objective of ensuring the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Inadequate monitoring of areas with the potential for airborne radioactivity could lead to worker contamination and increased exposure. The finding was assessed using the Occupational Radiation Safety Significance Determination Process (SDP). Based on the facts that this was not an ALARA planning issue, there were no overexposures nor substantial potential for overexposures, and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance (Green). This finding has a cross-cutting aspect in the area of Human Performance [H.2(d)] because the licensee did not ensure that equipment was adequate and available to assure nuclear safety. (Section 2RS5)

Inspection Report# : 2012003 *(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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