Hatch 1
1Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to correct a condition adverse to quality with the IRM system results in reactor scram
Green. A self-revealing NCV of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, was identified for the failure to adequately correct a condition adverse to quality affecting the Intermediate Range Monitor (IRM) system. Consequently, a Unit 1 reactor scram occurred from 8% rated thermal power on May 10, 2009 during a reactor startup. The cause of the scram was attributed to IRM signal spikes on the A and H IRM instruments when the reactor mode switch was taken to run. Following the reactor scram, the licensee performed repair activities to correct degraded cables and connections to improve the grounding of the IRM system. Additionally, the licensee installed ferrite beads on each cable entering and exiting the IRM preamplifier on all eight IRM channels. This violation was entered into the licensee's corrective action program as CR 2009104764.

The failure to correct a condition adverse to quality is a performance deficiency. The licensee had several prior opportunities to fully investigate and correct the causes associated with IRM instrumentation spiking. Additionally, RER-2003-216 documents a decision not to make system improvements. This performance deficiency is more than minor because it is associated with the equipment performance attribute of the Initiating Events (IE) Cornerstone and adversely affected the IE cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the electrical noise sensed on the IRM A and H instruments resulted in Unit 1 reactor scram on May 10, 2009. The significance of this finding was screened using the Phase 1 of the SDP in accordance with NRC IMC 0609 Attachment 4, Table 4a. This finding screened as Green, because the finding did not contribute to both the likelihood of a reactor trip and likelihood that mitigation equipment or functions would not be available. The inspectors concluded that the finding had an associated crosscutting aspect in the Human Performance area under the Decision Making component because the licensee did not use conservative assumptions when putting RER-2003-216 on hold based on accepting the risk of not making incremental improvements in the IRM grounding system. (H.1(b))
Inspection Report# : 2010004 *(pdf)*

Significance: G Jun 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to follow corrective action program procedure and prevent recurrence of severity level 2 root cause
•Green. A self-revealing NCV of 10 CFR 50 Appendix B, Criterion V, Instructions, Procedures and Drawings, was identified for the licensee's failure to follow their corrective action program procedure, NMP-GM-002, Ver. 4.0, that required severity level 1 and 2 condition reports (CR) to have corrective actions that prevent recurrence. From May 2006 to April 2010 licensee procedure NMP-GM-002, Corrective Action Program, Ver. 4.0, was not followed because corrective actions to prevent recurrence were not implemented prior to failure of Analog Transmitter Trip System (ATTS) card 1B21-N690C. The licensee's immediate corrective actions were to replace the failed card, 1B21-641C, the adjacent card 1B21-N690C and the high drywell pressure trip cards 1E11-N694A and C. The licensee initiated CR 2010105161 to address this issue.

The performance deficiency is more than minor because it is associated with the Equipment Performance attribute of the Initiating Events cornerstone and adversely affected the Initiating Events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure of ATTS card 1B21-N641C resulted in a spurious Loss of Coolant Accident (LOCA) signal that started Emergency Core Cooling System (ECCS) equipment and resulted in a power reduction to approximately 85%. Due to this finding affecting the safety of an operating reactor, the significance of this finding was screened

using NRC IMC 0609, Attachment 4, Table 4a. Because the finding contributed to the likelihood of a reactor scram, but did not affect mitigation equipment availability, the finding screened as Green. The inspectors concluded that the performance deficiency does not have an associated cross-cutting aspect because the performance deficiency occurred in 2006 and is not indicative of the licensee's current performance in the area of root cause investigations. (Section 1R12)

Inspection Report# : 2010003 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inaccessbile fire hose station in the cable spreading room
An NRC-identified NCV of Hatch Unit 1 operating license condition 2.C.(3) and Hatch Unit 2 operating license condition 2.C.(3)(a), Fire Protection, was identified for failure to maintain fire hose station HS-C20 operable while equipment in the area was required to be operable. Hose station HS-C20 was determined to be inaccessible to the fire brigade. Immediate corrective actions taken by the licensee included performing a fire protection alternate compensatory measures evaluation, (as required by Fire Hazards Analysis section 9.2,specification 1.6.1 action a), which resulted in staging an additional 100 feet of hose at hose station, HS-C21, located just outside of the cable spread room. This violation was entered into the licensee's corrective action program as CR 2011100783.

Failure to ensure the accessibility and thus operability of HS-C20 or take required compensatory action in accordance with Fire Hazards Analysis Section 9.2 Appendix B Specification 1.6.1 is a performance deficiency. This performance deficiency is more than minor because it adversely affected the protection against external events (fire) attribute of the Mitigating Systems cornerstone objective to ensure the availability and reliability of systems (safety related cable spreading room cabling) that respond to initiating events to prevent undesirable consequences. This violation was assessed using the Phase 1 screening worksheets of Attachment 4 and Appendix F of IMC 0609. The inspectors performed an initial qualitative screening and determined the inoperability of HS-C20 was a low degradation violation against the fire protection program. The cable spreading room fire area contains full pre-action sprinkler coverage and a manual carbon dioxide flooding system. Additionally, a manual hose station and fire extinguishers are located outside the primary access doors to the cable spreading room. Based on the low degradation of the fire protection program, this violation was screened as Green. The inspectors determined this performance deficiency had a cross-cutting aspect in the area of Problem Identification and Resolution under the Corrective Action Program component because the licensee did not appropriately identify the long standing issue of the inaccessibility of HS-C20 during monthly surveillance testing. (P.1(a)) (Section 1R05)
Inspection Report# : 2011002 *(pdf)*

Significance: G Mar 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to control foreign material within a level 1 foreign material exclusion area
A self-revealing NCV of Technical Specification 5.4, Procedures, was identified for the licensee's failure on March 7, 2011, to implement foreign material exclusion procedures and prevent foreign material entering the service water system intake, a Level 1 foreign material exclusion area. Immediate corrective actions were performed to retrieve the foreign material and the affected plant service water pump was returned to service on March 18. The licensee has entered this issue into their corrective action program as CR 2011102588 and CR 2011102657.

Failure to control foreign material in a Level 1 foreign material exclusion area is a performance deficiency. This performance deficiency is more than minor because it is associated with the equipment performance attribute and adversely affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability, of systems that respond to initiating events to prevent undesirable consequences. Specifically, foreign material that was introduced into the plant service water intake area resulted in the unavailability of the 1C plant service water pump. The

significance of this finding was assessed in accordance with Inspection Manual Chapter 0609, Attachment 4. The finding screened as Green using the Mitigating Systems Cornerstone column of Table 4a of Attachment 4, specifically there was not a loss of function that exceeded the allowed out of service time. The inspectors determined this performance deficiency has a cross-cutting aspect in Work Control component of the Human Performance Area, because the licensee did not plan work activities by incorporating risk insights, job site conditions, environmental conditions, or the need for planned contingencies, compensatory actions, and abort criteria. (H.3(a)) (Section 1R19)

Inspection Report# : 2011002 *(pdf)*

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Interaction of non-safety related power system with safety systems during bus transfers
An NRC indentified NCV of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified for the failure to properly analyze electrical bus transfers that could adversely affect redundant safety buses. Specifically, the licensee failed to analyze the effects of severe voltage dips on the 4.160 kV safety buses that could occur if a loss of coolant accident occurred coincident with bus transfers that occur during a unit trip. The licensee entered this issue into their corrective action program as CR 2009105775.

The licensee's failure to properly analyze the effects of severe voltage dips during bus transfers was a performance deficiency. The finding was more than minor because it was associated with the Design Control attribute of the Mitigating System Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to properly analyze the effects of voltage dips that could occur following the transfer of the non-safety bus to the transformer supplying power to redundant safety-related buses during LOCA block loading. The finding was assessed for significance in accordance with NRC Manual Chapter 0609, a Phase III analysis was required since this finding represented a potential loss of safety system function for multiple trains which was not addressed by the Phase II pre-solved tables/worksheets. The regional SRA performed a Phase III analysis for the deficiency. Because the failure of the onsite power system (such as including the turbine/generator tripping scheme) would have to occur concurrent with the loading of large ECCS motors onto safety-related buses in response to an accident the event, the period of vulnerability for the trip is was assumed to be a few seconds. Therefore the likelihood of the event results in a risk very much below the threshold for a colored finding. Because this finding is not related to current licensee performance, no cross cutting aspect was identified. (Section 4OA5.2)

Inspection Report# : 2011002 *(pdf)*

Significance: G Sep 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to correct a condition adverse to quality results in 1A emergency diesel generator fuel oil line failure
Green. A self-revealing NCV of 10 CFR 50 Appendix B Criterion XVI, Corrective Action, was identified for the licensee's failure to promptly identify and correct a diesel fuel oil leak on the 1A emergency diesel generator. The fuel oil leak was identified by the licensee on April 1, 2010 and the licensee scheduled the leak to be repaired in May 2011. The fuel oil line failed on June 3, 2010 which rendered the emergency diesel generator unavailable and incapable of performing its required safety functions. The licensee replaced the fuel oil fitting and restored operability of the 1A emergency diesel generator on June 5, 2010 to restore compliance. This violation has been entered into the licensee's corrective action program as CR 2010107248.

Failure to ensure the appropriate quality, level of detail, and documentation of assumptions contained within an operability evaluation is a performance deficiency. This performance deficiency is more than minor because it adversely affected the Mitigating Systems Cornerstone objective, specifically the failure to promptly identify and correct a fuel oil line leak on the 1A emergency diesel generator directly resulted in the failure of the fuel oil line rendering the emergency diesel generator unavailable and incapable of performing its required safety functions. IMC 0609 Attachment 4 was used and per table 4a screened as requiring a Phase 2 analysis due to this finding resulting in the single train of the emergency diesel generator being inoperable greater than its allowed outage time contained

within Technical Specifications. The emergency diesel generator was unable to perform its intended safety functions from the last successful surveillance test on May 4 through June 3, 2010 yielding an exposure time of 30 days. The pre-solved Phase 2 table contains the 1A emergency diesel generator, and for an exposure time of 3-30 days results in a preliminary significance of White and requiring a Phase 3 analysis to be performed. The Phase 3 analysis resulted in the risk being reduced to less than 1E-6 and the finding was determined to be Green. The inspectors determined this performance deficiency had a cross-cutting aspect in the area of Human Performance under the Work Control component (H.3(b)) because the licensee did not appropriately coordinate work activities through proper communications and consideration of the actual fuel oil leak rate.
Inspection Report# : 2010004 *(pdf)*

Significance: G Jun 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to maintain safety related cables in a non-submerged environment
•Green. The NRC identified a NCV of 10 CFR 50, Appendix B, Criterion III, Design Control, for the licensee's failure implement measures to assure that safety-related cables remained in an environment for which they were designed. Safety-related cables purchased and installed in underground electrical pull boxes at Hatch Nuclear Plant have been subjected to submergence, a condition for which they are not designed. To address this issue the licensee has performed the immediate corrective action of increasing the frequency of measuring water level and pump down of the pull boxes. The licensee initiated CR 2010104298 to address this issue.

This performance deficiency is more than minor because it is associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, it is reasonable to conclude the cables may be in a degraded condition where the continued reliability of the cable cannot be ensured because: 1) the licensee does not have a cable testing/monitoring program to detect degradation of inaccessible or underground power cables; 2) the cables have been subject to a submerged physical environment which is outside the cables design parameters; and 3) there have been documented failures of cables throughout the nuclear industry due to degradation caused by submergence in water. Because the finding affects the safety of an operating reactor, the significance of this finding was screened using the Phase 1 of the SDP in accordance with NRC IMC 0609, Attachment 4, Table 4a. The finding screened as Green, because the finding is a design or qualification deficiency confirmed not to result in loss of operability or functionality. This finding has a cross-cutting aspect in the Work Control component of the Human Performance area, because the licensee did not appropriately coordinate activities by incorporating actions where maintenance scheduling is more preventive than reactive. Specifically, the licensee did not schedule performance of procedure 52PM-Y46-001-0, Inground Pull Box and Cable Duct Inspection for Water, at a frequency that prevented safety related cable submersion (H.3(b)). (Section 1R06)

Inspection Report# : 2010003 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

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