Hatch 2
3Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2010
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to implement adequate configuration control on Unit 2 main generator stator water cooling temperature control instrument loop, 2N43-F100
A self-revealing finding was identified for the licensee's failure to create, implement, and make available to maintenance personnel, quality processes or documents for configuration control. Specifically, the licensee failed to maintain the correct configuration of the stator water cooling (SWC) temperature control instrument loop air-operated valve, 2N43-F100, as required by licensee procedure NMP-ES-014, Air Operated Valve Program. The failure to implement adequate configuration control on the SWC temperature control instrument loop directly resulted in a Unit 2 reactor scram on June 20, 2009. The licensee has addressed this issue in their Corrective Action Program (CAP) and developed corrective actions in CR 2009106326. As part of the licensee's immediate corrective actions the Unit 2 SWC instrument loop was reconfigured to the correct alignment, and changes were made to procedure NMP-ES-014.

This performance deficiency was more than minor because it was associated with the Configuration Control attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability. Specifically, inadequate configuration control resulted in a Unit 2 reactor scram on June 20, 2009. The significance of this finding was screened using the Phase 1 of the Significance Determination Process (SDP) in accordance with NRC Inspection Manual Chapter 0609 Attachment 4. Because the finding contributed to a reactor scram, but did not affect mitigation equipment availability, the finding screened as Green. This finding had a cross-cutting aspect in the Resources component of the Human Performance area, because the licensee did not provide complete, accurate and up-to-date design documentation, procedures, and work packages, and correct labeling of components. Specifically, the licensee did not implement a means of configuration control of the SWC temperature control instrument loop. (H.2(c)). (Section 4OA3.1)

Inspection Report# : 2010002 *(pdf)*

Mitigating Systems

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)*

Significance: G Jun 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to follow procedure while in shutdown cooling to record corrected reactor water level
•Green. The NRC identified a NCV of 10 CFR 50 Appendix B, Criterion V, Instructions, Procedures, and Drawings, for the licensee's failure to prescribe in procedure 34GO-OPS-015-2, Maintaining Cold Shutdown or Refueling Condition, appropriate documented instructions for recording and verifying reactor water level when reactor vessel level is greater than 60 inches and instrument 2B21-R605 is unavailable. To address this issue the licensee performed the immediate corrective action of initiating CR 2010104615 and has generated an action item to upgrade procedure 34GO-OPS-015-2.

This performance deficiency is more than minor because it is associated with the Human Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability of systems (ability of operators to monitor, trend, and maintain reactor water level) to prevent undesirable consequences. Because this finding is associated with the safety of a reactor while the unit was in cold shutdown and on residual heat removal shutdown cooling, NRC IMC 0609, Attachment 4, directs using IMC 0609, Appendix G, Shutdown Operations Significance Determination Process, to determine the significance of this finding. In Appendix G, Attachment 1, Checklist 6 was used because during the time period of this finding the unit was in cold shutdown, with a time to boil < 2 hours, and reactor coolant system level < 23 feet above the top of the reactor vessel flange. Each item in Appendix G, Attachment 1, Checklist 6 was determined to have been met, therefore per Figure 1 of Appendix G this finding screened as GREEN significance because a Qualitative Assessment was not required by Checklist 6. This finding has a cross-cutting aspect in the Work Control component of the Human Performance area, because the licensee did not plan and coordinate work activities consistent with nuclear safety including planned contingencies, compensatory actions, or abort criteria. Specifically, the licensee did not plan and coordinate the activity of transitioning the reference leg for reactor water level instrument 2B21-R605 with contingencies, compensatory actions, or abort criteria addressed to ensure measurable reactor water level was available to control room operators (H.3(a)). (Section 1R20)

Inspection Report# : 2010003 *(pdf)*

Significance: W Dec 31, 2009
Identified By: Self-Revealing
Item Type: VIO Violation
Failure to establish appropriate preventative maintenance for electrolytic capacitors
•TBD A self-revealing apparent violation (AV) of TS 5.4, Procedures, was identified for failure to establish and perform preventive maintenance activities to replace electrolytic capacitors prior to their failure, specifically the electrolytic capacitors for the Unit 2 EDG LOCA/LOSP timer cards and their associated power supplies. As a result, between 2005 and 2009, the 2A, 2C and the 1B swing EDG experienced failures of the LOSP/LOCA circuitry, which were attributed to electrolytic capacitor age-related failures. On February 12, 2009 the Unit 2A EDG LOSP timer card was found in a failed state. These issues were documented in the licensee's corrective action program as condition reports (CRs) 2005103415, 2008107899, 2008107935, 2009101237 and 2009102221. All Unit 2 EDG LOCA/LOSP time cards were replaced and their power supplies refurbished with new capacitors.

A second example of this performance deficiency was also identified. The performance deficiency directly contributed to the feedwater level controller 2C32-K648 power supply failing resulting in a Unit 2 automatic scram on June 23, 2009 (LER 05000366/2009-004). The licensee replaced the failed power supply. This issue is documented in the licensee's corrective action program as CR 2009106352.

This finding with two examples is more than minor because if left uncorrected, the performance deficiency has the potential to lead to a more significant safety concern. Specifically, equipment containing electrolytic capacitors could fail and result in a plant transient or render systems/components used to respond to a plant transient unreliable or unavailable. The inspectors evaluated the finding in accordance with IMC 0609, Significance Determination Process, Attachment 4, Phase 1 – Initial Screening. It was determined that a SDP Phase 2 analysis was required since the first example of the finding represents an actual loss of a safety function of a single train (EDG) for greater than its TS allowed outage time. The SDP Phase 2 analysis evaluated the finding for a Loss of Offsite Power (LOSP) event and required a Phase 3 review. The risk associated with the example for the failed main feedwater median level 2C32-K648 controller power supply was aggregated into the result of the phase
3 for the Unit 2 EDG timer cards. This finding has potential safety significance greater than very low safety significance (Green) and is classified as an apparent violation. The finding was also determined to have a cross-cutting aspect in the Operating Experience component of the Problem Identification and Resolution area (P.2(b), because the licensee did not effectively incorporate pertinent industry operating experience into the preventative maintenance program for the Unit 2 EDG LOCA/LOSP and the feedwater level controller components.

This was determined to be a White finding for Unit 2 and was documented as Violation 2010006-01.

As required by the NRC Reactor Oversight Process Action Matrix, a supplemental inspection was performed because two findings of White safety significance were identified which placed Unit 2 in the Degraded Cornerstone Column in the fourth quarter of 2009. The issues, which degraded the Mitigating Systems Cornerstone, included a fourth quarter 2009 Unit 2 White finding for failure to establish appropriate preventative maintenance for electrolytic capacitors and a first quarter 2009 White finding for the 1B emergency diesel generator (EDG) coupling failure which affected both units. These issues were documented in inspection reports 05000366/2010006 and 05000321,366/2009008, respectively. The NRC determined that the proposed corrective actions are appropriate to resolve the deficiencies related to the Degraded Mitigating Systems Cornerstone. Based on the results of this inspection, no findings were identified. As such, the inspection objectives of IP 95002 have been satisfied. Therefore, the White finding for the failure to establish appropriate preventative maintenance for electrolytic capacitors was considered closed.
On August 26, 2010, the IP 95002 inspection team presented the inspection results in an exit meeting to the licensee.

Inspection Report# : 2009005 *(pdf)*
Inspection Report# : 2010006 *(pdf)*
Inspection Report# : 2010007 *(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

Last modified : November 29, 2010