Farley 1
3Q/2011 Plant Inspection Findings

Initiating Events

Significance: G May 24, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Flame Detected on the 1A RCP Handswitch
TBD. A self-revealing finding and apparent violation of Technical Specification 5.4, Procedures, was identified for failing to maintain the configuration of the 1A RCP oil lift pump system in accordance with plant design and drawings. The licensee incorrectly re-landed electrical wiring following maintenance to the 1A RCP oil lift pump pressure switch. This issue revealed itself upon the discovery of a flame on the 1A RCP handswitch in the Unit 1 main control room (MCR).
The licensee's failure to maintain the configuration of the 1A RCP oil lift pump system in accordance with plant design and drawings is a performance deficiency. Work was completed, by skill of the craft, without inclusion into an amendment to the existing calibration work order, and resulted in the incoming electrical feeds for the 125 vDC and 130 vAC circuits being cross-connected and causing a fire on the MCR board when the 1A RCP handswitch was taken to start. The finding is more than minor because it was associated with the Protection Against External Factors attribute of the Initiating Events cornerstone to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, a fire occurred in the MCR for Units 1 and 2 as a result of the mis-wiring causing an electrical short in the 1A RCP handswitch. This finding was assessed using the Phase 1 screening worksheets of Appendix 4 and Appendix F of MC 0609, and warranted a review by a regional Senior Risk Analyst because a fire in the MCR had actually occurred. The regional Senior Risk Analysts determined the significance of this finding is preliminarily White. The finding does not represent an immediate safety concern because the wiring has been returned to the original plant design. The finding was assigned a cross-cutting aspect in the Work Practices component of the Human Performance area in that personnel did proceed in the face of uncertainty or unexpected circumstances. [H.4(a)]

After considering the information you provided at the regulatory conference, the NRC has concluded that the finding is appropriately characterized as Green, a finding of very low safety significance. The NRC also has determined that the finding is a violation of Technical Specification 5.4.1 as discussed in inspection report 05000348/2011-012 and 05000364/2011-012. The circumstances surrounding the violation was described in detail that inspection report. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as CR 2010116613, this violation is being treated as an NCV, consistent with the Enforcement Policy. NCV 05000348,364/2011012-01, Flame Detected on the 1A RCP Handswitch.
Inspection Report# : 2011012 *(pdf)*
Inspection Report# : 2011013 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to maintain safety-related cables in a non-submerged environment
A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified for the licensee's failure to implement measures to assure safety-related cables remained in an environment for which they were certified. Safety-related cables purchased and installed in underground electrical pull boxes at Farley Nuclear Plant (FNP) have been subjected to submergence, a condition for which they are not designed. The licensee entered

this issue into its CAP as CR 2010100512, which included the action to increase the frequency of measuring water level in pull boxes and removing excess water to ensure cables are not submerged. Despite the increased frequency of the preventative maintenance, electrical pull box B1M53 was observed by NRC inspectors to contain safety-related cables completely submerged in water on four separate occasions in the first quarter of 2011. Upon discovery of this condition, the licensee wrote CR 2011103553.

Failure to maintain safety-related electrical cables in a physical environment for which the cables are designed to operate, is a performance deficiency. This performance deficiency is more than minor because it is associated with the design control attribute of the Mitigating Systems (MS) cornerstone, and adversely affected the cornerstone objective to ensure the reliability of systems responding to initiating events to prevent undesirable consequences. The design control attribute of the MS cornerstone was determined to be adversely affected; because 1) testing of these cables has not been performed, 2) the cables have not been maintained within the parameters for which they are designed, 3) the corrective action to increase frequency of preventative maintenance was ineffective in preventing submergence of safety-related cables, and 4) there have been documented failures of cables throughout the nuclear industry due to degradation caused by submergence in water. The significance of this finding was screened using the Phase 1 of the SDP in accordance with NRC Inspection Manual Chapter 0609 Attachment 4. The finding screened as Green, because the finding is a design or qualification deficiency confirmed not to result in loss of operability or functionality. The finding was assigned a cross-cutting aspect in the corrective action
program component of the Problem Identification and Resolution area because of the licensee's evaluation of the problem failed to identify a resolution that addressed the cause and extent of conditions (P.1(c)). Specifically, the inspectors determined the increased pull box preventative maintenance was ineffective in preventing safety-related cable exposure to unqualified conditions, and the corrective actions were inadequate in ensuring the problem was resolved. (Section 1R06)

Inspection Report# : 2011002 *(pdf)*

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Effectively Implement Risk Management Activities Results in Loss of Single Train of Shutdown Core Cooling (Section 4OA2.2.b.1)
A self-revealing NCV of 10 CFR 50.65(a)(4) revealed itself when Unit 1 train 'A' RHR was lost because the licensee failed to identify and assess the loss of a plant significant component during plant repairs. On October 15, 2010, Unit 1 was in a refueling outage with fuel in the reactor vessel, the reactor vessel head detensioned, and reactor coolant system (RCS) water level one foot below the reactor vessel flange. The licensee restored power to motor-operated valve (MOV) 8701A during its initial preparations for flooding the refueling cavity and lifting the reactor vessel head to its refueling stand. Concurrent with this evolution, the licensee danger-tagged the train 'A' solid state protection system (SSPS) to perform repairs to the multiplexer test switch. This activity resulted in relay PY402AX being placed in a de-energized state (actuated). Relay PY402AX provides the interlock to MOV 8701A to close if RCS pressure exceeds 402 psig. Once power was restored to MOV 8701A, the active RCS pressure interlock automatically closed the valve. This isolated the suction source of the train 'A' RHR pump, and the control room operators stopped the pump.
The licensee's failure to effectively implement one of the risk management actions prescribed during the Orange outage risk, which resulted in the loss of a plant significant component during plant repairs, is a performance deficiency. The finding is more than minor because it adversely affected the equipment performance attribute of the MS cornerstone objective of ensuring the availability, reliability, and capability of systems responding to initiating events preventing undesirable consequences (i.e. core damage). Specifically, one of the key safety functions was significantly degraded without sufficient compensation. The significance of this finding was assessed using the Phase 1 screening worksheets of Attachment 4 and Appendix G, Attachment 1, Checklist 3 of MC 0609. Because the finding increased the likelihood that a loss of decay heat removal will occur due to a failure of the system itself or support systems, further review was required by the regional senior risk analyst.
A regional Senior Reactor Analyst evaluated the performance deficiency using the Phase 3 protocol of the Significance Determination Process. Based upon this evaluation, the performance deficiency was characterized as of very low safety significance (Green). The dominant accident sequence involved the loss of the operating train of residual heat removal as the initiating event. The rest of the accident sequence involved the loss of the standby residual heat removal train due to the performance deficiency, the failure of operators to recover one these trains

before Reactor Coolant System boiling and a failure of operators to initiate emergency core cooling before core damage. The major assumptions of this evaluation included a short time to boil and there was no credit was considered for recovering the standby residual heat removal train.
This finding was assigned a cross-cutting aspect in the Resources component of the Human Performance area because training of personnel and sufficient qualified personnel to maintain work hours within working hour guidelines was not accomplished (H.2(b)). Specifically, trained personnel with sufficient knowledge to fully understand the effect of removing power to the Unit 1 train A SSPS were not provided to effectively implement the risk management actions prescribed during the Orange outage risk.
Inspection Report# : 2010005 *(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

Significance: N/A Aug 24, 2007
Identified By: NRC
Item Type: FIN Finding
Biennial Identification and Resolution of Problems Inspection Results
One finding of very low safety significance (Green) was identified. The licensee was generally effective in identifying problems at a low threshold and entering them into the corrective action program. The licensee properly prioritized issues entered into the corrective action program (CAP) and routinely performed evaluations that were technically accurate and of sufficient depth to address the issue documented in the condition reports (CRs). Overall, corrective actions were effective; however, minor examples of inadequate condition report broadness reviews and documentation issues related to the closure of action items were identified. In general, operating experience was found to be used both proactively and reactively by personnel involved in the corrective action program; however, an example of industry operating experience was identified in which the licensee did not completely develop interim compensatory measures for a condition to which Farley was vulnerable. The licensee's programmatic self-assessments and audits were generally effective in identifying weaknesses in the corrective action program; however, a missed opportunity in the trending of issues which could result in adverse effects on safety-related plant components was identified. The inspectors also concluded that the workers at Farley felt free to report safety concerns.

Inspection Report# : 2007006 *(pdf)*

Last modified : January 04, 2012