Beaver Valley 2
1Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Sep 16, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Implement Corrective Actions for 2A Service Water Pump Motor Epoxy Vioding
The inspectors identified a Green , self-revealing, non-cited violation of 10CFR50, Appendix B, Criterion XVI, "Corrective Action," in that FENOC did not take corrective actions to prevent recurrence of a significant condition adverse to quality. Specifically, FENOC failed to implement corrective actions following the 2A service water pump motor failure in 2005, which resulted in another failure of the same pump motor in 2011. FENOC implemented the corrective actions to prevent recurrence identified following the 2005 failure for the rewind of 2SWS-P21A motor in July 2011. FENOC documented this issue in their corrective action program as condition report 11-96293.

The inspectors determined that FENOC's failure to prevent recurrence of a significant condition adverse to quality was a performance deficiency. Specifically, FENOC failed to implement corrective actions to prevent recurrence of a turn-to-turn winding failure of the 2A service water pump due to excessive voiding in the epoxy of the stator end windings. This self-revealing finding is more than minor because it was associated with the equipment performance attribute of the Initiating Events cornerstone and adversely impacted the 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. The inspectors evaluated the significance of this finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," for the initiating events cornerstone. The inspectors determined that the finding was of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or function would be unavailable. The inspectors determined that this finding had no cross cutting aspect because it is not reflective of current plant performance. Specifically, the actual performance deficiency occurred in 2005 and FENOC implemented corrective actions from the 2005 root cause evaluation for the 2011 rewind of the 2A service water pump motor.

Inspection Report# : 2011009 *(pdf)*

Mitigating Systems

Significance: G Sep 16, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to lmplement Effective Corrective Actions to Prevent Recurrence of Socket-Weld Failures
The inspectors identified a Green, self-revealing, non-cited violation of 10 CFR 50, Appendix B, Criterion XVl, "Corrective Action," in that FENOC failed to take adequate corrective actions to prevent recurrence of a significant condition adverse to quality. Specifically, FENOC's extent of condition review and long-term corrective actions following a residual heat removal socket weld failure, caused by vibration-induced high-cycle fatigue, were inadequate to preclude the recurrence of a similar failure on the auxiliary feedwater system. FENOC entered this issue into their corrective action program as condition report 11-01453 for further review.

The inspectors determined that FENOC's failure to plan or implement adequate corrective actions to prevent recurrence of socket weld failures on safety-related piping was a performance deficiency. This issue was reasonably within FENOC's ability to foresee and correct due to previous opportunities to identify and correct socket weld failures on safety-related systems at Beaver Valley. The inspectors determined that this self-revealing finding was

more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors evaluated the significance of this finding using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and determined that this finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not represent a loss of safety system function, and did not screen as potentially risk-significant due to external initiating events. This finding had a cross-cutting aspect in the area of problem identification and resolution because FENOC did not thoroughly evaluate a significant condition adverse to quality such that the resolutions address the extent-of-condition. Specifically, FENOC failed to perform an adequate extent of condition review following the failure of the 1RH-200 socket weld which resulted in not developing adequate corrective actions to address socket welds on the auxiliary feedwater system.[P.1(c)]
Inspection Report# : 2011009 *(pdf)*

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Maintain Recirculation Spray HXs in Chemical Wet Layup
A Green, self-revealing non-cited violation (NCV) of TS 5.4.1, “Procedures”, was identified in that the Unit 2 recirculation spray (RSS) HXs were not maintained in chemical wet layup, contrary to station procedures and industry guidance. Specifically, FENOC failed to place corrosion inhibitors in the RSS HXs, resulting in significant HX corrosion, which lead to degraded flow through the B RSS HX during a service water full flow test. This issue was entered into the licensee’s corrective action program under CR 11-90430.

Traditional enforcement does not apply because the issue did not have an actual safety consequence or the potential for impacting NRC’s regulatory function, and was not the result of any willful violation of NRC requirements. The inspectors determined that the finding was not similar to the examples for minor deficiencies contained in IMC 0612, Appendix E, “Examples of Minor Issues”. The finding is more than minor because it affects the Mitigating Systems and Barrier Integrity cornerstones. The finding is associated with the equipment performance attribute of the Mitigating Systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and is also associated with the SSC and barrier performance attribute of the Barrier Integrity cornerstone to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system and containment) protect the public from radionuclide releases caused by accidents or events.

In accordance with IMC 0609.04 (Table 4a), Phase 1 – Initial Screening and Characterization of Findings,” the finding was determined to be of very low safety significance (Green) because the finding did not result in a loss of operability, nor was it a degradation of a radiological barrier, control room barrier, hydrogen ignitor, or an open pathway.

The cause of this NCV relates to the cross-cutting aspect of Human Performance, Work Control, in that FENOC personnel did not plan and coordinate work activities consistent with nuclear safety. Specifically, FENOC did not plan and coordinate work activities to support long-term equipment reliability of the RSS HXs.[H.3(b)]

Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 17, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE CALCULATIONS FOR PLACING SSST LTC IN MANUAL MODE
The team identified a finding of very low safety significance involving a non-cited vioiation of 10 CFR 50, Appendix B, Criterion lll, "Design Control," because FENOC did not correctly translate the design basis of the electrical distribution system into procedures to ensure operability of offsite power during bus transfers when operating the system service station transformer (SSST) load tap changers (LTC) in the manual mode, an allowed system configuration. Specifically, the team found that procedure's supporting calculation did not

evaluate the voltage levels on the 480 volt buses. The team determined that during some design basis events, with the tap changer in manual, voltage on the 480 volt vital bus could degrade to a level that would cause the degraded grid relays to trip, resulting in a spurious trip of offsite power. FENOC entered the issue into the corrective action program, and implemented an Operation's night order to ensure the LTC was maintained in automatic. The team determined that the issue was 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. The finding was of very low safety significance (Green) because it was a design deficiency confirmed not to result in a loss of operability or functionality. The team determined that there was not a crosscutting aspect associated with this finding because it was not indicative of current performance.
Inspection Report# : 2011007 *(pdf)*

Significance: G Jun 17, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
OFFSITE POWER NON-CONSERVATIVE POST TRANSIENT VOLTAGE CALCULATIONS
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion lll, "Design Control," because FENOC did not perform adequate voltage calculations to verify that vital bus voltage levels would be adequate when offsite power was the bus voltage source. The team determined that nonconservative assumptions and evaluations caused the calculation results to predict higher bus voltage levels than could actually occur. Specifically, the team found that FENOC's calculational assumptions related to the initial tap position of the SSSTs following bus transfers, evaluation of the effect of the voltage dips that occur during a fast bus transfer, and assumptions for the post event grid voltage condition following the main generator trip could be worse than assumed in the calculation. FENOC entered the issue into the corrective action program, and revised calculations and evaluated post event grid voltage conditions to verify the adequacy of the offsite power source.
The team determined that this issue was 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. The finding was of very low safety significance (Green) because it was a design deficiency confirmed not to result in a loss of operability or functionality. The team determined that there was not a crosscutting aspect associated with this finding because it was not indicative of current performance.
Inspection Report# : 2011007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Oct 25, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
UNANNOUNCED EMERGENCY RESPONSE ORGANIZATION ACTIVATION DRILL FAILURE
A Green, self-revealing non-cited violation (NCV) of 10 CFR 50.47(b)(2) to ensure timely augmentation of response capabilities is available was identified. Specifically, FENOC failed to fully staff two primary Emergency Response Organization (ERO) positions during an unannounced activation drill. This issue was entered into the licensee’s

corrective action program under CR 2011-04431.

Traditional enforcement does not apply because the issue did not have an actual safety consequence or the potential for impacting NRC's regulatory function, and was not the result of any willful violation of NRC requirements. The inspectors determined that the finding was not similar to the examples for minor deficiencies contained in IMC 0612, Appendix E, "Examples of Minor Issues". The finding is more than minor because it affects the Emergency Preparedness cornerstone. The finding is associated with the ERO readiness attribute of the Emergency Preparedness cornerstone to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.

In accordance with IMC 0609, Appendix B, Sheet 1, "Failure to Comply" flowchart, the performance deficiency screens to green because it is considered a degraded planning standard function.

The cause of this NCV relates to the cross-cutting aspect of Human Performance, Work Practices, in that FENOC personnel did not effectively communicate expectations regarding drill participation and staff did not respond in the required time for ERO positions they had accepted in the call out system [H.4(b)].

Inspection Report# : 2011005 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: FIN Finding
Untimely Radiation Monitor Corrective Actions
A Green, NRC identified finding (FIN) was identified in that plans and actions to correct long-standing radiation monitor system instrumentation deficiencies were not accomplished in a timely manner, in accordance with FENOC CAP procedure NOP-LP-2001. Specifically, FENOC failed to correct and return to service radiation monitor instruments for the Unit 1 and Unit 2 RSS HX [RM-1RW-100A,B,C,D and 2SWS-RQ100A,B,C,D], in a timely manner, requiring maintenance of alternate monitoring and challenges to assessing radiation detection and assessment during accident situations. This issue was entered into the licensee's corrective action program under CR(s) 11-91673 and 11-89700.

Traditional enforcement does not apply because the issue did not have an actual safety consequence or the potential for impacting NRC's regulatory function, and was not the result of any willful violation of NRC requirements. The inspectors determined that the finding was not similar to the examples for minor deficiencies contained in IMC 0612, Appendix E, "Examples of Minor Issues". The finding is more than minor because it affects the Public Radiation Safety cornerstone. The finding is associated with the attribute of plant equipment and instrumentation (process radiation monitors) attribute of the Public Radiation Safety cornerstone to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation.

In accordance with IMC 0609.04 (Table 3a), "Phase 1 – Initial Screening and Characterization of Findings," the finding was evaluated using IMC 0609 Appendix D, "Public Radiation Safety Significance Determination Process" and determined to be of very low safety significance (Green) because the finding was not a failure to implement the effluent program or cause any public dose to be exceeded.

The cause of this NCV relates to the cross-cutting aspect of Problem, Identification, and resolution, Corrective Action Program, in that FENOC personnel did not take timely corrective actions to develop and implement actions for long-

standing radiation monitor deficiencies. [P.1(d)] (Section 4OA2)
Inspection Report# : 2011003 *(pdf)*

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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