

Beaver Valley 2

2Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Apr 18, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM A WRITTEN EVALUATION AS REQUIRED BY 50.59

The inspectors identified a Severity Level (SL) IV NCV and associated Green finding of 10 CFR 50.59, “Changes, Tests and Experiments,” in that FENOC failed to perform a written evaluation for creation of an abnormal operating procedure (AOP) for response to a security threat. Specifically, FENOC created procedure 1/2OM-53C.4A.100.1 “Security Threat Procedure” to cooldown the reactor coolant system (RCS) in excess of the maximum cooldown rate prescribed in the updated final safety analysis report (UFSAR) and technical specifications (TS) without performing a written evaluation to provide the basis for the determination that a license amendment was not required. FENOC generated CR-2013-06122, 06382, and 07557. FENOC revised the abnormal operating procedure (AOP) to comply with TS as part of the immediate corrective actions.

The inspectors evaluated the performance deficiency using traditional enforcement because the performance deficiency had the potential to impact the regulatory process. This violation is associated with a finding that has been evaluated by the SDP and communicated with an SDP color reflected of the safety impact of FENOC’s deficient performance. The finding is more than minor because if left uncorrected, could have the potential to lead to a more significant safety concern. Specifically, if the procedure were implemented during a security event, FENOC would exceed cooldown rates assumed in the UFSAR accident analyses, potentially challenging the integrity of the RCS. In accordance with IMC 0609.04, “Initial Characterization of Findings,” and Exhibit 1 of IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency represented a transient initiator that would not cause a reactor trip and loss of mitigation equipment relied upon to transition the plant from the onset of a trip to a stable shutdown condition. In accordance with Section 6.1.d.2 of the NRC Enforcement Policy, this violation is categorized as an SL IV because the resulting conditions were evaluated as having very low safety significance (Green) by the SDP. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices because FENOC did not follow their 10 CFR 50.59 User Guidelines. Specifically, FENOC did not appropriately follow the regulatory applicability process, and as a result concluded that 50.59 was not applicable to implementation of 1/2OM-53C.4A.100.1. Although the performance deficiency occurred in 2005, the underlying cause of this performance deficiency is indicative of current performance because subsequent revisions of 1/2OM-53C.4A.100.1 and 100.2 (the most recent revision implemented on December 12, 2012) have not conducted written evaluations due to failure to appropriately follow the 10 CFR 50.59 User Guidelines causing the inaccurate conclusion that either 50.59 was not applicable or a written evaluation was not required [H.4(b)].

Inspection Report# : [2013003](#) (*pdf*)

Significance: G Dec 04, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO USE A PROCEDURE TO OPERATE A CVCS VALVE

A self revealing, Green NCV of Technical Specification 5.4.1 “Procedures,” was identified for FENOC’s failure to

use a procedure when operating chemical volume and control system (CVCS) valve 2CHS-FCV122 during troubleshooting, as required by the RG 1.33 "Quality Assurance Program Requirements". Specifically, when an operator discovered that the valve positioner main feedback arm was sheered, the operator inadvertently manipulated the valve without a procedure.

The inspectors determined that failing to use a procedure when operating 2CHS-FCV122 during troubleshooting was a performance deficiency within FENOC's ability to foresee and correct which contributed to over-pressurizing the RCS during solid plant operations. This finding is more than minor because it is associated with the human performance attribute of the initiating events cornerstone and adversely impacted the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown. Specifically, the operator's failure to use a procedure when operating 2CHS-FCV122 during troubleshooting lead to over-pressurization of the reactor coolant system. The inspectors evaluated the finding using "PWR Refueling Operation: RCS level > 23' or PWR Shutdown Operation with Time to Boil > 2 hours and Inventory in the Pressurizer" Checklist 4 of Attachment 1 to Appendix G of IMC 0609. Because no loss of control occurred and no checklist attributes were adversely impacted, a Phase 2 quantitative assessment was not required. Therefore, the inspectors determined the finding to be of very low safety significance.

This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because FENOC personnel failed to use human error prevention techniques during troubleshooting of 2CHS-FCV122, and proceeded in the face of uncertainty after identifying the broken positioned feedback arm [H.4(a)].

Inspection Report# : [2012005](#) (*pdf*)

Significance: G Dec 04, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT A CONDITION ADVERSE TO QUALITY

A self revealing, Green NCV was indentified for FENOC violating 10 CFR 50 Appendix B, Criterion XVI "Corrective Action," for failure to identify and correct a condition adverse to quality on the Controller Driver printed circuit board (NCD board) for the controller for 2CHS-FCV160. Specifically, FENOC failed to identify that a NCD board was installed on the controller for 2CHS-FCV160 that was potentially impacted by defects identified in Westinghouse Technical Bulletin TB-08-06 and take corrective actions.

The inspectors determined that failing to identify and correct a condition adverse to quality on the NCD board for the controller for 2CHS-FCV160 was a performance deficiency within FENOC's ability to foresee and correct which contributed to over-pressurization of the RCS during solid plant operations. The finding is more than minor because it is associated with the equipment performance attribute of the initiating events cornerstone and adversely impacted the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown. Specifically, the failure to ensure the availability and reliability of 2CHS-FCV160 lead to over-pressurization of the reactor coolant system. The inspectors evaluated the finding using "PWR Refueling Operation: RCS level > 23' or PWR Shutdown Operation with Time to Boil > 2 hours and Inventory in the Pressurizer" Checklist 4 of Attachment 1 to Appendix G of IMC 0609. Because no loss of control occurred and no checklist attributes were adversely impacted, a Phase 2 quantitative assessment was not required. Therefore, the inspectors determined the finding to be of very low safety significance.

There is no cross-cutting aspect associated with this finding because the performance deficiency is not reflective of FENOC's current performance.

Inspection Report# : [2012005](#) (*pdf*)

Mitigating Systems

Significance: G Mar 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Manage Elevated Risk during Preventive Maintenance

The inspectors identified a Green, NCV of 10 CFR 50.65(a)(4) "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," because FENOC did not implement risk management actions to manage the risk associated with performance of preventive maintenance on the Unit 2 23A motor-driven auxiliary feedwater pump. Specifically, FENOC did not clearly post the 23B motor-driven and turbine-driven auxiliary feedwater pumps as protected equipment in the field as required by NOP-OP-1007, "Risk Management" and BVBP-OPS-0012, "Guidance for Protected Equipment during Normal Operations." FENOC's immediate corrective actions including posting the turbine-driven auxiliary feedwater pump as protected equipment, and entering this issue into their corrective action program as condition report CR-2013-03412.

The inspectors determined that the finding is more-than-minor because it is associated with the human performance attribute of the mitigating systems cornerstone, and adversely impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Specifically, removing the 23A motor-driven auxiliary feedwater pump without protecting the 23B motor-driven and turbine-driven auxiliary feedwater pumps reduced the reliability and capability of the auxiliary feedwater system. The inspectors, in conjunction with the regional senior reactor analysts, evaluated this finding using IMC 0609.04, "Initial Characterization of Findings," and Flowchart 2 "Assessment of Risk Management Actions" of IMC 0609 Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." Using the Birnbaum value for the 23A motor-driven auxiliary feedwater pump from the plant risk information book, the inspectors estimated the incremental core damage probability to be approximately $1.46E-7$ during the preventive maintenance period. Additionally, FENOC calculated the incremental core damage probability to be approximately $1.76E-7$ using the On-Line Risk Safety Monitor. Since the finding is a 10 CFR 50.65(a)(4) performance issue associated with risk management actions only and the incremental core damage probability is not greater than $1E-6$, the inspectors determined the finding to be of very low safety significance (Green). This finding has a cross-cutting aspect in the Human Performance Area, Work Practices because FENOC not did follow their risk management procedures during preventive maintenance on the 23A motor-driven auxiliary feedwater pump. Specifically, FENOC did not post opposite train equipment as protected as required by NOP-OP-1007 and BVBP-OPS-0012 [H.4(b)].

Inspection Report# : [2013002](#) (*pdf*)

Significance: G Aug 01, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INEFFECTIVE CORRECTIVE ACTION RESULTS IN OPERABLE COMPONENT COOLING WATER HEAT EXCHANGER

A self-revealing Green NCV of Title 10 of the Code of Federal Regulations (10CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified in that FENOC failed to prevent further degradation of the 'A' component cooling water heat exchanger, which was a significant condition adverse to quality. Inspectors determined that the unhindered rate of heat exchanger tube corrosion was a performance deficiency that was within FENOC's ability to foresee and correct. FENOC entered this issue into their corrective action program for further resolution as condition report (CR) 2012-13945.

This finding is more than minor because it affects the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined this finding was not a design qualification deficiency resulting in a loss of functionality or operability, did not represent an actual loss of safety function of a system or train of equipment, was not potentially risk-significant due to a seismic, fire, flooding, or severe weather initiating event, did not affect

reactivity control systems, and did not involve the fire brigade. Therefore, inspectors determined the finding to be of very low safety significance.

This finding has a cross-cutting aspect in the area of Human Performance, Resources, in that FENOC failed to ensure adequate design margin of the 'A' component cooling water heat exchanger was maintained, and to correct the long-standing issue of leakage past the 'A' component cooling water heat exchanger isolation valves [H.2.(a)].

Inspection Report# : [2012004](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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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