

## Beaver Valley 2

### 4Q/2013 Plant Inspection Findings

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#### Initiating Events

Significance:  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*)

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#### Mitigating Systems

Significance:  Dec 06, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Untimely Problem Identification and Corrective Action for Degraded Auxiliary Feedwater Pump Steam Supply Valve**

The inspectors identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, related to FENOC's problem identification and corrective action to address the November 2011 failure of steam driven auxiliary feedwater (SDAFW) pump steam supply valve 2MSS-SOV105C. Specifically, the inspectors identified that FENOC did not promptly identify and correct the elevated valve temperature condition that led to the coil failure of a solenoid operated steam admission valve for the SDAFW pump. Consequently, 2MSS-SOV105C failed again on June 19, 2012, due to solenoid insulation damage which resulted from elevated valve temperature. FENOC entered this issue into the corrective action program for resolution as condition report 2013-19448, updated procedures to evaluate elevated temperatures on SDAFW pump steam admission valves, and initiated condition report 2013-19250 to evaluate the adequacy of planned maintenance on the valves.

The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, FENOC did not ensure that adequate operational margin was available when 2MSS-SOV105C steam leak-by caused the valve actuator solenoid temperature to exceed 356F. Consequently, seven months following the valve actuator solenoid coil replacement, coil insulation degraded and rendered 2MSS-SOV105C inoperable and unavailable. In accordance with IMC 0609.04, Initial Characterization of Findings, and IMC 0609, Appendix A, The Significance Determination Process for Findings At-Power, dated June 19, 2012, the inspectors determined that this finding was of very low safety significance (Green). This finding has a cross-cutting aspect in the area of Human Performance, Resources, because FENOC did not ensure that personnel, equipment, procedures, and other resources were available and adequate to support operability of safety-related equipment. Specifically, design margin was not maintained for a safety-related solenoid-operated valve which resulted in its failure and the long-standing equipment issue of leak-by past the valve was not addressed through adequate monitoring and preventive maintenance of the valve solenoid. [H.2 (a)]

Inspection Report# : [2013008](#) (pdf)

**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*)

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## Barrier Integrity

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## 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.

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## Miscellaneous

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