

## Beaver Valley 2

### 4Q/2005 Plant Inspection Findings

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## Initiating Events

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## Mitigating Systems

**Significance:**  Dec 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **PROCEDURAL ERROR RESULTED IN THE UNEXPECTED INOPERABILITY OF THE "A" MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP**

A Green, self-revealing, non-cited violation (NCV) of 10CFR50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for failure to properly execute a clearance procedure. Specifically, a safety-related auxiliary feedwater (AFW) pump was inadvertently disabled as a result of a procedural error during a clearance activity. The licensee entered this deficiency regarding procedure implementation into their corrective action program, performed a root cause evaluation, and implemented interim corrective actions that included a human performance stand-down to communicate lessons learned to the organization.

The finding was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and affected the objective in that it impacted the availability/reliability of a safety-related AFW pump. The finding is of very low safety significance since the pump was unavailable and out-of-service for only two minutes (within the technical specification allowable outage time of 72 hours). The cause of the finding is related to the personnel subcategory of the cross-cutting element of human performance.

Inspection Report# : [2005008\(pdf\)](#)

**Significance:**  Sep 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

### **FAILURE TO DEMONSTRATE EFFECTIVE MAINTENANCE ON THE UNIT 2 TDAFW STEAM ADMISSION VALVES**

The inspectors identified an NCV of 10CFR50.65(a)(2), which involved the failure to demonstrate that the performance of turbine-driven auxiliary feedwater (TDAFW) steam admission solenoid valves was being effectively controlled through adequate maintenance. Four separate solenoid coil failures occurred in 2005, but were considered individual component failures and thus not system functional failures. FENOC formed a root cause team following the fourth valve failure to provide an in-depth review of the recurrent failures.

This finding is more than minor because it involves the reliability of a mitigating systems component. A failure of two valves in the same train would have caused a start of the TDAFW pump and the injection of relatively cold water to the steam generators followed by a subsequent cooldown of the reactor coolant system. This scenario would also affect the containment isolation function of the affected steam line since both valves are considered containment isolation valves. This finding is of very low safety significance since it did not result in a loss of system function as described in Generic Letter 91-18. FENOC has entered this issue into the corrective action program, and plan to re-evaluate the effectiveness of the administrative procedures utilized to implement the maintenance rule. Additionally, FENOC is evaluating the solenoid coil deficiencies, performed an extent of condition review, and have appropriate corrective actions identified within the corrective action program to resolve the multiple failures that have occurred. A contributing cause to this finding is related to the evaluation subcategory of the problem identification and resolution cross-cutting area because the licensee failed to perform a 10CFR50.65(a)(1) evaluation to validate that effective maintenance was being performed on the affected valves.

Inspection Report# : [2005007\(pdf\)](#)

**Significance:**  Sep 30, 2005

Identified By: Self-Revealing

Item Type: FIN Finding

### **SWITCHYARD TRANSIENT CAUSED BY CRANE THAT DAMAGED 345kV TRANSMISSION LINE**

The inspectors identified a self-revealing finding because an overhead crane contacted an incoming 345 kilovolt feeder to the Beaver Valley Power Station (BVPS) switchyard. The incoming line was isolated automatically by protective relaying and the subsequent electrical transient caused a loss of the running service air compressor on Unit 2. Operators quickly discovered the lowering instrument air pressure and took actions to restore header pressure by starting the backup condensate polisher compressor.

This finding is more than minor because it affected an attribute and the objective of the initiating events cornerstone in that it caused a transient

that upset plant stability and therefore could be viewed as a precursor to a significant event. This event could have resulted in a loss of instrument air and a subsequent reactor trip. This finding is of very low safety significance since although it did contribute to the likelihood of a reactor trip, it did not contribute to the likelihood of unavailable mitigating system components. FENOC performed a root cause and instituted appropriate interim corrective actions in the area of crane movements and heavy loads. Additionally, FENOC has identified a contributing cause for the unexpected trip of the running station air compressor and have actions within the corrective action program to mitigate this action from recurring. A contributing cause to this finding is related to the personnel subcategory of the human performance cross-cutting area because of a lack of attention to detail while moving a crane near overhead power lines.

Inspection Report# : [2005007\(pdf\)](#)

**G**

**Significance:** Sep 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **DEGRADED SERVICE WATER SYSTEM PIPE SUPPORT**

The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," for inadequate and untimely corrective actions regarding a degraded (corroded) service water piping support that existed for approximately nine years.

This finding is more than minor because if the corroded pipe support was left uncorrected, it would become a more significant safety concern in that the service water piping would not maintain structural integrity during a seismic event due to the corroded and inoperable pipe support, and result in a large service water leak that could impact safety-related equipment that require service water for cooling. This finding was considered to be of low safety significance because the pipe support was determined to be degraded by approximately 20 percent, but capable of performing its intended function. The licensee will update the design basis calculation to address the wall loss from corrosion, and has cleaned and painted the affected area to ensure further degradation does not occur. Additionally, system walkdown effectiveness was being evaluated due to the longstanding nature of this degradation. A contributing cause to this finding is related to the corrective action subcategory of the problem identification and resolution cross-cutting area, because the licensee failed to correct a long-standing degradation that existed in a pipe support for the safety-related service water system.

Inspection Report# : [2005007\(pdf\)](#)

**G**

**Significance:** Sep 01, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Unannounced Fire Drills Not Conducted in Accordance with Requirements**

The team identified a non-cited violation of BVPS Units 1 and 2, Facility Operating Licenses for improper planning and scheduling of unannounced fire brigade drills. For several years, the unannounced drills were in the weekly planning schedule; therefore, the fire brigade knew when the drill was going to be conducted. The finding was associated with the cross-cutting area of problem identification and resolution because the condition existed for several years, BVPS did not identify the deficient condition, and corrective actions to this deficiency were untimely.

The finding was more than minor because it affected the Mitigating System cornerstone and the reliability and capability of the fire brigade's ability to respond to a fire. The failure to conduct proper unannounced drills for several years resulted in BVPS not being able to fulfill the purpose of unannounced drills, which is to determine the fire fighting readiness of the plant fire brigade, brigade leader, and fire protection systems and equipment. NRC management reviewed this finding and determined it to be of very low safety significance (Green) based on no significant identified weaknesses with fire brigade performance during announced drills. The finding was associated with the cross cutting area of problem identification and resolution in that BVPS failed to identify the problem for several years.

Inspection Report# : [2005005\(pdf\)](#)

**G**

**Significance:** Sep 01, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Fire Protection Implementation Deficiency Not Identified, Evaluated or Corrected in Accordance with Corrective Action Program**

The team identified a non-cited violation of BVPS Unit 2, Facility Operating License, Section 2.F, "Fire Protection Program" for not entering a condition adverse to quality, associated with implementation of continuous fire watches, in the corrective action program for evaluation and resolution in April 2005. This finding was associated with the cross-cutting area of problem identification and resolution in that BVPS did not identify, evaluate, or correct the deficiency as directed by the corrective action program.

The finding was more than minor because it affected the Mitigating System cornerstone and the reliability and capability of the fire watches to fulfill their function of monitoring and responding to a fire. The finding was determined to be of very low safety significance since the plant was already in cold shutdown at the time of concern.

This finding was associated with the cross-cutting area of problem identification and resolution in that BVPS did not identify, evaluate, or correct a condition adverse to quality regarding implementation of continuous fire watches.

Inspection Report# : [2005005\(pdf\)](#)

## 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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## Physical Protection

[Physical Protection](#) information not publicly available.

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## Miscellaneous

**Significance:** N/A Sep 01, 2005

Identified By: NRC

Item Type: FIN Finding

### **Problem Identification and Resolution Inspection -Team Summary**

Overall, the team determined that the corrective action program at Beaver Valley Power Station (BVPS) was generally effective in the identification, evaluation, and resolution of problems. The team determined that BVPS typically identified problems and placed them in the corrective action program, but noted some deficiencies in the identification of issues as evidenced by several NRC-identified NCVs during the previous two years. The team also identified deficiencies in the identification and resolution of trends in the corrective action program for repeat maintenance and human performance issues. The team noted that BVPS was effective in conducting root cause and apparent cause evaluations. Therefore, BVPS effectively resolved problems categorized as more significant. However, the majority of items were classified at other significance levels, including some of the non-cited violations. In these cases, the team identified inconsistent evaluation and resolution including one of the two non-cited violations identified during this inspection. The team did not identify any safety conscious work environment issues.

Inspection Report# : [2005005\(pdf\)](#)

Last modified : March 03, 2006