



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
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January 29, 2009

Mr. Peter P. Sena, III
Site Vice President
FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
P. O. Box 4, Route 168
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION - NRC INTEGRATED INSPECTION
REPORT 05000334/2008005 AND 05000412/2008005

Dear Mr. Sena:

On December 31, 2008, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Beaver Valley Power Station Units 1 and 2. The enclosed integrated inspection report documents the inspection results, which were discussed on January 13, 2009, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, and its enclosures, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

We appreciate your cooperation. Please contact me at 610-337-5200 if you have any questions regarding this letter.

Sincerely,

/RA/

Ronald R. Bellamy, Ph.D., Chief
Reactor Projects Branch 6
Division of Reactor Projects

Docket Nos.: 50-334, 50-412
License Nos: DPR-66, NPF-73

Enclosures: Inspection Report 05000334/2008005; 05000412/2008005
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos. 50-334, 50-412

License Nos. DPR-66, NPF-73

Report Nos. 05000334/2008005 and 05000412/2008005

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Beaver Valley Power Station, Units 1 and 2

Location: Post Office Box 4
Shippingport, PA 15077

Dates: October 1, 2008 through December 31, 2008

Inspectors: D. Werkheiser, Senior Resident Inspector
D. Spindler, Resident Inspector
T. Fish, Sr. Operations Engineer
R. Fuhrmeister, Sr. Reactor Inspector

Approved by: R. Bellamy, Ph.D., Chief
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SUMMARY OF FINDINGS

IR 05000334/2008005, IR 05000412/2008005; 10/01/2008 – 12/31/2008; Beaver Valley Power Station, Units 1 & 2; Routine Integrated Report

The report covered a 3-month period of inspection by resident inspectors and regional reactor inspectors. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4 dated December 2006.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status:

Unit 1 began the inspection period at 100 percent power. The unit remained at 100 percent power for the inspection period.

Unit 2 began the inspection period at 100 percent power. On October 23, the unit was shut down to repair the "A" Low Head Safety Injection Pump (LHSI) and returned to full power on October 27 (section 4OA3.2). The unit remained at 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity [R]**1R01 Adverse Weather Protection (71111.01).1 Seasonal Susceptibilitya. Inspection Scope (1 seasonal susceptibility sample)

The inspectors reviewed the Beaver Valley Power Station (BVPS) design features and FENOC's implementation of procedures to protect risk significant mitigating systems from cold weather conditions and high winds. The inspectors walked down risk significant plant areas for several days in November and December and assessed FENOC's protection activities for cold weather conditions. Specifically, the inspectors evaluated outside instrument line conditions and the potential for unheated ventilation. The walkdown included the safety-related heat tracing, intake structure cubicles, and ventilation heating for safety-related areas. The inspectors also reviewed 1OST-45.11, "Cold Weather Protection Verification," Rev. 17 and 2OST-45.11, "Cold Weather Protection Verification," Rev. 18. Other documents that were reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2 Impending Adverse Weather – Extreme Cold Weathera. Inspection Scope (1 impending adverse weather sample)

The inspectors evaluated FENOC's preparation and protection from the effects of abnormal cold outside air temperature conditions for Unit 1 and Unit 2 during the week of December 21. This evaluation included a review of the Updated Final Safety Analysis Report (UFSAR) and applicable cold temperature related procedures to determine the readiness of protection for applicable safety-related structures, systems, and components. The inspectors performed walkdowns of the Unit 1 and Unit 2 external structures to verify the adequacy of freeze protection from an impending cold weather condition that could potentially impact safety-related equipment.

In NRC Inspection Report 05000334/412-2008002, two samples of Adverse Weather Protection were completed: External Flooding and Impending High River Water. The correct sample count is “2 samples” in the first calendar quarter of 2008.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdowns (71111.04Q)

a. Inspection Scope (2 samples)

The inspectors performed two partial equipment alignment inspections during conditions of increased safety significance, including when redundant equipment was unavailable during maintenance or adverse conditions. The partial alignment inspections were also completed after equipment was recently returned to service after significant maintenance. The inspectors performed partial walkdowns of the following systems, including associated electrical distribution components and control room panels, to verify the equipment was aligned to perform its intended safety functions:

- Unit 2, On October 22, Low Head Safety Injection System (LHSI) during the “A” LHSI repair; and
- Unit 2, On November 19, Emergency Diesel Generator (EDG) 2-2 during maintenance on 2-1 EDG.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Sample Review (71111.05Q)

a. Inspection Scope (5 samples)

The inspectors reviewed the conditions of the fire areas listed below, to verify compliance with criteria delineated in Administrative Procedure 1/2-ADM-1900, “Fire Protection,” Rev. 17. This review included FENOC’s control of transient combustibles and ignition sources, material condition of fire protection equipment including fire detection systems, water-based fire suppression systems, gaseous fire suppression systems, manual firefighting equipment and capability, passive fire protection features, and the adequacy of compensatory measures for any fire protection impairments. Documents reviewed are listed in the Attachment:

- Unit 2, AE Switchgear Room (Fire Area SB-1);
- Unit 1, Cable Tray Mezzanine (Fire Area CS-1);
- Unit 1, Process Rack Room (Fire Area CR-4);
- Unit 2, Diesel Generator 2-2 and EDG 2-2 Vent Room (Fire Area DG-2); and

- Unit 2, Diesel Generator 2-1 and EDG 2-1 Vent Room (Fire Area DG-1).

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Observation (71111.05A)

a. Inspection Scope (1 sample)

The inspectors observed performance during a fire brigade drill on October 15, to evaluate the readiness of station personnel to prevent and fight fires. The drill simulated a fire in the SOSB Auxiliary Boiler area. The inspectors observed the fire brigade members using protective clothing, turnout gear, and self-contained breathing apparatus and entering the fire area in a controlled manner. The inspectors also observed the fire fighting equipment brought to the fire scene to evaluate whether sufficient equipment was available to effectively control and extinguish the simulated fire. The inspectors evaluated whether the permanent plant fire hose lines were capable of reaching the fire area and whether hose usage was adequately simulated. The inspectors observed the fire fighting directions and communications between fire brigade members and local volunteer departments that participated in live-fire testing at the fire-testing grounds. The inspectors verified that the pre-planned drill scenario was followed and observed the post drill critique to evaluate if the drill objectives were satisfied and that any drill weaknesses were discussed.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope (1 sample)

The inspectors observed one sample of Unit 2 licensed operator simulator training on October 23 as part of Just-In-Time training for the impending Unit 2 shutdown for forced-outage 2FOAC8 (section 1R20). The inspectors evaluated licensed operator performance regarding command and control, implementation of normal, annunciator response, abnormal, communications, and technical specification review. The inspectors evaluated training personnel to verify that deficiencies in operator performance were identified, and that conditions adverse to quality were entered into the licensee's corrective action program for resolution. The inspectors reviewed simulator physical fidelity to assure the simulator appropriately modeled the plant control room. The inspectors verified that the training evaluators adequately addressed that the applicable training objectives had been achieved.

b. Findings

No findings of significance were identified.

.2 Biennial Review by Regional Specialist (71111.11B)

a. Inspection Scope (1 sample)

On December 17, a region-based inspector conducted an in-office review of final results of the licensee-administered annual operating tests for 2008. Results from the comprehensive written exams were not included in this review because those exams were part of the 2007 testing cycle. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)." The inspector verified that:

- Crew failure rate was less than 20%. (Crew failure rate was 0%)
- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Individual failure rate was 2.8%)
- Individual failure rate on the walk-through test was less than or equal to 20%. (Individual failure rate was 0%)
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75%. (Overall pass rate was 97.2%)

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

.1 Routine Maintenance Effectiveness Inspection (71111.12Q)

a. Inspection Scope (2 samples)

The inspectors evaluated Maintenance Rule (MR) implementation for the issues listed below. The inspectors evaluated specific attributes, such as MR scoping, characterization of failed structures, systems, and components (SSCs), MR risk characterization of SSCs, SSC performance criteria and goals, and appropriateness of corrective actions. The inspectors verified that the issues were addressed as required by 10 CFR 50.65 and the licensee's program for MR implementation. For the selected SSCs, the inspectors evaluated whether performance was properly dispositioned for MR category (a)(1) and (a)(2) performance monitoring. MR System Basis Documents were also reviewed, as appropriate. Documents reviewed are listed in the Attachment.

- CR 08-48160, "2SIS-P21A, Rub Felt When Rotating Pump Shaft;" and
- November 26, Standby Diesel Instrument Air Compressor [1IA-C-4], trips on over-speed during testing, as documented in CR 08-50089.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control (71111.13)a. Inspection Scope (2 samples)

The inspectors reviewed the scheduling and control of two activities, and evaluated their effect on overall plant risk. This review was conducted to ensure compliance with applicable criteria contained in 10 CFR 50.65(a)(4). Documents reviewed during the inspection are listed in the Attachment. The inspectors reviewed the planned or emergent work for the following activities:

- During the week of October 22, activities related to “A” low head safety injection pump maintenance and repairs; and
- On November 10, switchyard activities involving Unit 1 and Unit 2 auxiliary feedwater testing, and Unit 2 repair activities to level transmitter 460.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)a. Inspection Scope (5 samples)

The inspectors evaluated the technical adequacy of selected immediate operability determinations (IOD), prompt operability determinations (POD), or functionality assessments (FA), to verify that determinations of operability were justified, as appropriate. In addition, the inspectors verified that technical specification (TS) limiting conditions for operation (LCO) requirements and UFSAR design basis requirements were properly addressed. Documents reviewed are listed in the Attachment. This inspection activity represents five samples of the following issues:

- September 23, the week of September 28, and October 4, the IOD, POD, and system condition after venting, when gas voids were identified in both trains of Unit 1 low head safety injection system suction piping (CR 08-46771). A detailed assessment of operability was further conducted during a special inspection (section 4OA3.1);
- On October 13, Unit 2, Emergency Diesel Generator (EDG) lube oil heater auxiliary contactor failure as documented in CR 08-47798;
- On October 20 and 25, Unit 2, extent of condition of “B” Low Head Safety Injection (LHSI) IOD during challenges experienced during “A” LHSI pump wear-ring replacement;
- On November 7, Unit 2, regarding “B” Quench Spray chemical injection pump [2QSS-P24B] seal leak and assessment of operability documented in CR 08-48774; and
- On November 19, Unit 1, concerning challenges to load carrying capabilities of the EDG during the first minutes of operation due to turbo-lag as identified by OE and documented in CR 08-49681, 50461.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope (1 temporary plant modification sample)

The inspectors reviewed the following temporary modifications (TMOD) based on risk significance. The TMOD and associated 10 CFR 50.59 screening were reviewed against the system design basis documentation, including the UFSAR and the TS. The inspectors verified the TMODs were implemented in accordance with Administrative (ADM) Procedure, 1/2-ADM-2028, "Temporary Modifications," Rev. 6. Documents reviewed are listed in the Attachment.

- On November 14, TMOD ECP-08-0496-000 associated clamping 3-way valve HCV-1CH-244 in the position to isolate from the volume control tank for repair of the cation bed demineralizer isolation valve [1CH-11]. Inspectors walked down assessable areas of the system and reviewed system prints with control room operators to verify that the TMOD described was appropriately implemented, the safety function of the charging system would be maintained, and appropriate controls were in place.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope (5 samples)

The inspectors reviewed the following activities to determine whether the post-maintenance tests (PMT) adequately demonstrated that the safety-related function of the equipment was satisfied given the scope of the work specified, and that operability of the system was restored. In addition, the inspectors evaluated the applicable acceptance criteria to verify consistency with the associated design and licensing bases, as well as TS requirements. The inspectors also verified that conditions adverse to quality were entered into the corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment. The following five maintenance activities and associated PMTs were evaluated:

- On October 4, venting of air from Unit 1, train A and B, Low Head Safety Injection system pump suctions (section 1R15, 4OA3.1);
- On October 13, installation and retest of the auxiliary control of the lubrication oil pre-heater for Unit 2 Emergency Diesel Generator, EDG 2-2;
- On October 30, the repair of the level control valve for the rocker arm lubrication oil reservoir for Unit 2 Emergency Diesel Generator, EDG 2-1;

- On November 12, replacement of Pressurizer Level Transmitter [2RCS-LT460] (WO 200323452); and
- On November 19, 2OST-11.1, Rev. 24, "Low Head Safety Injection Pump [2SIS*P21A] Test" was reviewed after maintenance activities (WO 200342953) to replace the pump wear-ring.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

.1 Unit 2 Forced Outage (2FOAC8)

a. Inspection Scope (1 sample)

The inspectors reviewed licensee performance during a forced outage following a Unit 2 TS required shutdown on October 24, due to a pump wear-ring replacement on the "A" Low Head Safety Injection Pump (LHSI), (section 4OA3.1). The inspectors reviewed compliance to TS requirements and approved procedures, conduct of outage risk evaluations, configuration control, and maintenance of key safety functions. Documents reviewed during the inspection are listed in the Attachment. During this forced outage, the inspectors monitored FENOC's control of the outage activities listed below:

- Shutdown risk evaluation
- Plant shutdown and boric acid walkdown in primary containment
- Startup scheduling
- Reactor Startup and Criticality
- Plant Startup
- Power Ascension

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (3 samples: 2 routine, 1 leak rate)

The inspectors observed pre-job test briefings, observed selected test evolutions, and reviewed the following completed Operation Surveillance Test (OST) and Maintenance Surveillance (MSP) packages. The reviews verified that the equipment or systems were being tested as required by TS, the UFSAR, and procedural requirements. Documents reviewed are listed in the Attachment. The following three activities were reviewed:

- On October 31, Unit 2, 2OST-36.1, rev. 57, "Emergency Diesel Generator [2EGS*EG-2-1] Monthly Test;"
- On November 12, Unit 2, 2MSP-6.42-1, rev. 16, "2RCS-L460, Pressurizer Level Channel II Calibration;" and

- On December 30, Unit 2, 2OST-6.2A, rev.26, "Computer Generated Reactor Coolant System Water Inventory Balance."

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope (1 sample)

The inspectors observed a Unit 1 licensed-operator annual simulator evaluation conducted on October 2. Senior licensed-operator performance regarding event classifications and notifications were specifically evaluated. The inspectors evaluated the simulator-based scenario that involved multiple, safety-related component failures and plant conditions that would have warranted emergency plan activation, emergency facility activation, and escalation to the event classification of Alert. The licensee planned to credit this evolution toward Emergency Preparedness Drill/Exercise Performance (DEP) Indicators. Therefore, the inspectors reviewed the applicable event notifications and classifications to determine whether they were appropriately credited, and properly evaluated consistent with Nuclear Energy Institute (NEI) 99-02, Rev. 5, "Regulatory Assessment Performance Indicator Guideline." The inspectors reviewed licensee evaluator worksheets regarding the performance indicator acceptability, and reviewed other crew and operator evaluations to ensure adverse conditions were appropriately entered into the Corrective Action Program. Other documents utilized in this inspection include the following:

- 1/2-ADM-1111, Rev. 3, "NRC EPP Performance Indicator Instructions;"
- 1/2-ADM-1111.F01, Rev. 2, "Emergency Preparedness Performance Indicators Classifications/Notifications/PARS;"
- 1/2-EPP/I-1a/b, Rev. 11, "Recognition and Classification of Emergency Conditions;"
- 1/2-EPP-I-2, Rev. 31, "Unusual Event;"
- 1/2-EPP-I-3, Rev. 29, "Alert;"
- 1/2-EPP-I-4, Rev. 29, "Site Area Emergency;" and
- 1/2-EPP-I-5, Rev. 30, "General Emergency."

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope (4 samples)

The inspectors sampled licensee submittals for Performance Indicators (PI) listed below for both Unit 1 and Unit 2. The inspectors reviewed portions of various logs and reports specified and PI data developed from monthly operating reports, and discussed methods

for compiling and reporting the PIs with cognizant engineering and licensing personnel. To verify the accuracy of the PI data reported during this period, PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 5, were used for each data element. Documents reviewed during this inspection are listed in the Attachment.

.1 Cornerstone: Mitigating Systems

Mitigating Systems Performance Index (MSPI) (Units 1 & 2)

The inspectors reviewed data from the first quarter 2008 through the third quarter 2008. Inspectors reviewed the Consolidated Data Entry MSPI Derivation Reports for availability and reliability and MSPI component risk coefficients for the systems listed below:

- Emergency AC power systems [MS06] - Emergency Diesel Generator
- High pressure safety injection systems [MS07] -High Head Safety Injection

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152 – 2 samples total)

.1 Daily Review of Problem Identification and Resolution

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed a daily screening of items entered into FENOC's corrective action program. This review was accomplished by reviewing summary lists of each CR, attending screening meetings, and accessing FENOC's computerized CR database.

b. Findings

No findings of significance were identified.

.2 Annual Sample Review (71152)

Corrective Actions regarding potentially defective external lead-wire connections in Barton pressure transmitters, CR-07-27154, 06-10869

a. Inspection Scope (1 sample)

NRC Information Notice 2006-14, informed licensees of potentially defect wire connections on Barton Model 763 and 763A gage pressure transmitters and Model 764 differential-pressure transmitters. The inspector reviewed the adequacy and appropriateness of corrective actions to address the issue, including the prioritization and timeliness of completing connector replacements on the safety-related transmitters. Documents that were reviewed for this inspection are located in the Attachment.

b. Findings and Observations

No findings of significance were identified. FENOC identified affected components, documented the components in the corrective action process, and appropriately prioritized the safety-related transmitters for connector replacement. The timing of the replacements was commensurate with the prioritized risk.

Review of the Operator Workaround Program

a. Inspection Scope (1 sample)

The inspectors reviewed the cumulative effects of the existing operator work-arounds (OWA), the list of operator burdens, existing operator aids and disabled alarms, and the list of open main control room deficiencies. This review was performed to identify any effect on emergency operating procedure operator actions and any impact on possible initiating events and mitigating systems. The inspectors evaluated whether station personnel were identifying, assessing, and reviewing OWAs as specified in administrative procedure NOBP-OP-001, "Operator Work-Arounds, Operator Burdens, and Control Room Deficiencies" Rev. 0.

The inspectors reviewed FENOC's process to identify, prioritize and resolve main control room distractions to minimize operator burden. The inspectors reviewed the system used to track these operator work-arounds and burdens. The inspectors toured the control room and discussed the open items with the operators to ensure the items were being addressed on a schedule consistent with their relative safety significance.

b. Findings and Assessment

No findings of significance were identified. At the time of the inspection, FENOC had four issues classified as operator work-arounds and 16 operator burdens. The operator work-arounds and burdens were determined to have a minimal impact on the ability of the operator to promptly and appropriately respond to an event. The operators interviewed were aware of the status of the active operator work-arounds and burdens for their unit.

The tracking system in place (SAP) appeared to be effective at ensuring operators and management were aware of operator work-arounds and burdens and ensuring these items were addressed in a timely fashion. This process was incorporated into corporate procedure NOBP-OP-0012 Rev. 0 which became effective June 10. The new procedure required a quarterly assessment of the aggregate effects for operator work-around and burdens. The assessment had not been performed as of November 13. A condition report (08-49448) was written to document that the assessment was not performed within one quarter of the procedure date. The first assessment was completed November 21 with no adverse impact associated with the aggregate of the operator work-arounds and burdens.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 Followup of Event (2 samples)

a. Inspection Scope

The inspectors reviewed two events regarding Low Head Safety Injection (LHSI) that demonstrated personnel performance in coping with non-routine evolutions. The

inspectors observed operations in the control room and reviewed applicable operating and alarm response procedures, TS, plant process computer indications, and control room shift logs to evaluate the adequacy of FENOC's response to these events. The inspectors also verified the events were entered into the corrective action program to resolve identified adverse conditions. Documents reviewed during the inspection are listed in the Attachment.

Unit 1: Gas voids identified in suction piping of both trains of LHSI

The inspectors reviewed the circumstances surrounding the initial identification of gas voids in the Unit 1 containment pump suction to LHSI pumps (1-SI-P-1A, 1-SI-P-1B) on September 23 and their subsequent removal by venting on October 4. The licensee identified the voids as part of the actions to address NRC Generic Letter 2008-01 (Gas Void Management) evaluation. The gas voids were determined to be approximately 4.1 cubic feet in train "A", and 3.9 cubic feet in train "B". The licensee entered this issue into their corrective action program (CR 08-46771) and assessed the immediate operability of the system. A subsequent prompt operability determination was completed on September 26 (section 1R15). The licensee considered both trains of LHSI operable. The NRC resident, regional, and technical specialists discussed this issue with the licensee during the weeks of September 23 and 28. Following these discussions, the licensee developed procedures to vent the gas from the pump suctions. The procedure was implemented on October 4. The gas voids were verified removed by ultrasonic testing. The licensee retained the assistance of third party engineering companies to perform a detailed evaluation of the impact of the gas voids on safety injection performance.

Based on Management Directive 8.3, "NRC Incident Investigation Program" criteria, a special inspection (Inspection Procedure 93812) was conducted in November to further evaluate the Unit 1 void condition in the LHSI suction piping. This evaluation will be documented in inspection report 05000334/2008009.

Unit 2: One Train of LHSI Inoperable and Granted Notice of Enforcement Discretion

On October 20, 2008, at 06:40 am, FENOC identified unexpected turning resistance on the "A" LHSI pump [2SIS-P21A] during a planned maintenance window. FENOC had entered the planned 72 hour LCO, TS 3.5.2, "ECCS – Operating" at 11:26 pm on October 19, 2008. Troubleshooting activities identified resistance was caused by light rubbing of the pump to casing wear rings. Minor damage of the wear rings was observed and actions taken to replace the wear rings. Subsequent challenges were encountered with the installation and alignment of the pump such that acceptable tolerances and freedom of movement were difficult to obtain. This challenged the restoration of the "A" LHSI pump prior to expiration of the TS LCO time. FENOC obtained vendor support and prepared for a Unit 2 forced outage. The licensee requested and received a Notice Of Enforcement Discretion (NOED) from the NRC, which allowed for an additional 36 hours in addition to the 72 hour TS LCO for restoration of the "A" LHSI pump (see NOED 08-1-01, ADAMS ML083020687, October 28, 2008). Challenges to the alignment of pump persisted. The licensee decided to shut down Unit 2 once it was apparent that the pump would not be restored to service by the end of the 36 hour NOED. Unit 2 downpower was commenced on October 23 at 6:00 pm, reaching mode 3 on October 24 at 5:19 am. URI 2008005-01 was opened to track enforcement actions pending NRC review of the event.

The inspectors monitored licensee activities throughout the LHSI maintenance, troubleshooting, and repair. Inspectors also observed control room activities including use of procedures to reduce power, technical specification adherence, NRC notification of the event, and operator actions during the power reduction. A post-event review of Unit 2 operator and maintenance logs confirmed inspector observations. The unexpected resistance on the "A" LHSI pump was entered into the licensee's corrective action process for evaluation and resolution, CR 08-48160.

The inspectors noted that the licensee's apparent cause of the initial resistance was pump impeller centralization in the casing being left in the low-end of the acceptance range. The inspectors verified the accuracy of the NOED, consistency of licensee oral assertions, and the implementation of committed actions. Since no violations of NRC requirements were identified, beyond the TS implications associated with the NOED, this URI is closed. **URI 05000412/2008005-01, Beaver Valley Unit 2 NOED for One Train of LHSI OOS (08-1-01).**

b. Findings

No findings of significance were identified.

4OA5 Other

.1 Licensee Contract Expiration (IP 92709)

a. Inspection Scope

Inspectors implemented inspection activities to evaluate the adequacy of licensee strike contingency plans in preparation for the International Brotherhood of Electrical Workers (IBEW) contract expiration at midnight September 30, 2008. A contract agreement was met on October 7, 2008. The IBEW represents over 400 hundred personnel onsite, including operators, maintenance, and radiation protection personnel. The inspectors reviewed the licensee's plan regarding qualified personnel for safe operation of the station, security, and conformance with existing regulation and TSs.

b. Findings

No findings of significance were identified.

.2 Shippingport Bridge Closure (October 7 – 15)

a. Inspection Scope

Inspectors reviewed station response to the emergent closure and repair of the Shippingport Bridge by the Pennsylvania Department of Transportation. The inspectors reviewed the emergency response procedures for support services (i.e. fire, ambulatory) and the expected routes and timelines for emergency response to and from the station. The emergency evaluation routes were reviewed and discussed with FENOC and compared with documented emergency response plans.

b. Findings

No findings of significance were identified.

.3 Implementation of Temporary Instruction (TI) 2515/176 – Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

a. Inspection Scope

The objective of TI 2515/176, “Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing,” is to gather information to assess the adequacy of nuclear power plant emergency diesel generator (EDG) endurance and margin testing as prescribed in plant-specific TS. The inspectors reviewed emergency diesel generator ratings, design basis event load calculations, surveillance testing requirements, and emergency diesel generator vendor’s specifications and gathered information in accordance with TI 2515/176.

The inspector assessment and information gathered while completing this TI was discussed with licensee personnel. This information was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 (TI) 2515/176 – “Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing”

The inspector presented a de-briefing of TI2515/176 to Kevin Ostrowski, Director of Site Operations on November 7. The licensee acknowledged the conclusions and observations presented.

.2 Quarterly Inspection Report Exit

On January 13, the inspectors presented the normal baseline inspection results to Mr. Peter Sena, Beaver Valley Site Vice President, and other members of the staff. The licensee acknowledged the conclusions and observations presented. The inspectors confirmed that proprietary information was not retained at the conclusion of the inspection period.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

J. Aukney	Staff Nuclear Engineer
S. Baker	Manager, Radiation Protection
T. Bean	LOR Program Administrator
R. Bologna	Manger Plant Engineering
R. Brosi	Director, Site Improvement
S. Checketts	Operations Manager
T. Cotter	Superintendent, Electrical
R. Fedin	Licensing Engineer
R. Freund	Supervisor, Radiation Protection Services
B. Furdak	Quality Assurance Assessor
S. Hovanec	Plant/Systems Engineering Supervisor
C. Keller	Regulatory Compliance Manager
W. Klinko	EDG Systems Engineer
R. Lieb	Director, Work Management/Outage Management
R. Lubert	Plant Engineering Supervisor
K. Lynch	Design Engineer
M. Manoleras	Director Engineering
J. Mauck	Compliance Engineer
E. McFarland	Simulator Support
K. Mitchell	Sr. Nuclear Engineer
B. Murtagh	Design Supervisor
K. Ostrowski	Director, Site Operations
M. Patel	Staff Nuclear Engineer
W. Rudolph	Superintendent Operations Training
P. Sena	Site Vice President
B. Sepelak	Supervisor, Regulatory Compliance
B. Tuite	Training Manager

Other Personnel

D. Werkheiser	Senior Resident Inspector, Beaver Valley Power Station
D. Spindler	Resident Inspector, Beaver Valley Power Station
L. Ryan	Inspector, Pennsylvania Department of Radiation Protection

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened / Closed

05000412/2008005-01	URI	Beaver Valley Unit 2 NOED for One Train of LHSI OOS (08-1-01). (Section 4OA3.2)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

1OM-45.4.AE, "Troubleshooting Heat Trace Alarms"

Condition Reports

08-44429	08-49348	08-49215	08-48783	08-48772	08-48124
08-47948	08-47607	08-46507	08-46385	08-44171	08-41949

Section 1R04: Equipment Alignment

Drawings

10080-RM-411-1, "Low/High Head Safety Injection"
10080-RM-411-2, "Low/High Head Safety Injection"
10080-RM-411-3, "Low/High Head Safety Injection"

Technical Specifications

TS 3.5.2, 3.8.1

Section 1R05: Fire Protection

Procedures

2SOSB-01, Fire Drill Scenario, Aux Boiler Room-730, rev. 10/11/05

Condition Reports

08-48167

Other (Pre-Fire Protection Plans)

2PFP-ABBX-730 Aux Boiler Room, Rev. 0
2PFP-SRVB-730 AE Switchgear Room, Rev. 1
1PFP-SRVB-725 Cable Tray Mezzanine, Rev. 0
1PFP-SRVB-713 Process rack Room, Rev. 2
2PFP-DGBX-759 EDG 2-2 Vent Room, Rev. 1
2PFP-DGBX-732 Diesel Generator 2-1 Room, Rev. 3
2PFP-DGBX-759 EDG 2-1 Vent Room, Rev. 1

Section 1R12: Maintenance Rule Implementation

Procedures

1OST-34-8, Standby Diesel-Driven Air Compressor [1IA-C-4]

Condition Reports

08-50089	08-49963	08-49029	08-34465	07-28475
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Other

Safety System Functional Evaluations for Safety Injection Systems, Unit 2
Safety System Functional Evaluations for Air Systems, Unit 1

Work Order: 200342953 Notifications: 600503494 / 600506415

Section 1R13: Maintenance Risk Assessment and Emergent Work Control

Other

Work week (10/22) PRA schedule and Maint Activities.
Work week (11/10) PRA schedule and Maint Activities.
2FOAC8, Outage schedule
Unit 1 & Unit 2 Maint, Clearance, and Operations Logs

Section 1R15: Operability Evaluations

Drawings

8700-RM-411-1, Safety Injection System, Unit 1
8700-RM-411-2, Safety Injection System, Unit 1
8700-RM-411-1, Safety Injection System, Unit 2
8700-RM-411-2, Safety Injection System, Unit 2

Calculations

8700-E-048 Rev. 4 Add 3
8700-DMC-2702 Rev.0

Condition Reports

08-50461 08-49681 08-49585 08-47798

Vendor Manual

EMD EDG Vendor Manual

Other

Design Basis Document for Unit 1 Safety Injection Systems, System 11
Design Basis Document for Unit 2 Safety Injection Systems, System 11
Beta Lab Report CF 08-055, dated October 3, 2008
BV EMD EDG Electrical Loading Summaries
BV-PA-08-04
QFO BV1200083548
WO 200342022

Section 1R18: Plant Modifications

Condition Reports

08-45370

Regulatory Applicability Determination and 10 CFR 50.59 Screens

ECP-08-0496

Other

Clearance 1W09-07-CH-004A, 1W09-07-CH-005
BV1 Shift Operations logs dated, November 14, 2008
WO 200336272

Section 1R19: Post-Maintenance Testing

Procedures

PAF-08-2183, Limited Use Change to 1OM-11-4J, Rev. 17 "Filling and Venting the Safety Injection System"
2OST-11.1, Low Head Safety injection Pump [2SIS-P21A] Test

Work Orders

WO 200343864

Condition Reports

CR 08-46771

Section 1R20: Refueling and Outage Activities

Procedures

2OM-47.4.B, "Personnel Air Lock Operations"
2OST-6.2A, Rev. 26, "Computer Generated RCS Water Inventory Balance"
AOP-2.6.5, Shutdown LOCA
AOP-2.10.1, RHR System Loss
AOP-2.36.1, Loss of All AC while Shutdown
2OST-49.2, "Shutdown Margin Calculation"
2OST-11.18, "Low Head Safety Injection Pump Boric Acid Flowpath Verification"

Section 4OA2: Identification and Resolution of Problems

Condition Reports

07-27154 07-14882 06-10869

Other

ECP 07-0044
Environmental Qualification table for Containment Instruments
Notif 200252732 / 200252481 / 200252500
Mode Hold Resolution – 07-27154

Section 4OA3: Event Response

Condition Reports

08-48455 08-48449
08-48399 08-48160 08-49396
08-48392 08-46771 08-49395

Procedures

2CMP-11SIS-P-21A-B-1M, Issue 4, Rev. 2, Low Head Safety injection pump Overhaul
2OST-11.1, Low Head Safety injection Pump [2SIS-P21A] Test
NOP-OP-1009, Immediate and Prompt Operability Determination

Surveillances

2OST-11.14A, Rev. 18, "LHSI Full Flow Test," dated April 23, 2008

Other

BOP-UT-08-224, Ultrasonic test results for Unit 1 LHSI, Sept / Oct 2008
BV2 'A' LHSI Pump NOED Timeline
BV2 Shift Operations Logs, dated October, 19 – 27, 2008
Event Notification 44597, dated October, 24, 2008
Gould Pump Model 3405 Drawing, N235034#1, Rev 1B
LER 2008-003-00, BV2, dated December 22, 2008
MPR-3255, Rev. 2, Beaver Valley Unit 1 Low Head Safety Injection Pump Past Operability Analysis, Dec 2008
NOED 08-1-01, dated October 28, 2008 (ML083020687)
PORC Approved NOED Follow-up Letter, L-08-342, dated October 22, 2008
QM package 100016607, Ring, Wear, Casing, Nitronic 60 GR CF-
Problem Solving Plan, 2SIS-P21A, dated October 20, 2008
Repair Schedule for 2SIS-P21A, dated October 22, 2008
TS 3.5.2, "ECCS-Operation" Amendments 278 / 161
Work Order 200276114, 200342953, 200276113, 200287769
Work Order 200099142, 2SIS-P21B, Mechanical Seal Replacement, dated April 5, 2005
Work Order 200146714, 2SIS-P21B, Replace Casing Wear Ring, dated April 8, 2005

Section 40A5: Other Activities

Condition Report
08-47616

Other

Beaver County Telephone Book
Emergency Response Manual
Emergency Action Level, BVPS
Mutual Aid Response Agreements

Implementation of Temporary Instruction (TI) 2515/176 – Emergency Diesel Generator
Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

Completed Surveillance Procedures

1OST-36.1, Rev. 49, Diesel Generator No. 1 Monthly Test, completed October 15, September 17, and August 20, 2008
1OST-36.2, Rev. 50, Diesel Generator No. 2 Monthly Test, completed October 1, September 3, September 5 (partial), and August 6, 2008
2OST-36.1, Emergency Diesel Generator [2EGS*EG2-1] Monthly Test, completed September 24 (Rev. 55), August 27 (REV. 55), and July 30, 2008 (Rev. 54)
2OST-36.2, Rev. 54, Emergency Diesel Generator [2EGS*EG2-2] Monthly Test, completed October 8, September 10, and August 13, 2008
2OST-36.3, Rev. 28, Emergency Diesel Generator [2EGS*EG2-1] Automatic Test, completed April 15, 2008
2OST-36.4, Rev. 26, Emergency Diesel Generator [2EGS*EG2-2] Automatic Test completed April 16, 2008

Procedures

1OST-36.3, Rev. 21, Diesel Generator No. 1 Automatic Test

1OST-36.4, Rev. 22, Diesel Generator No. 2 Automatic Test

Calculations

8700-E-048, Rev. 4, EDG Loading Analysis at Frequency Above 60 Hz

10800-E-048, Rev. 12, Emergency Diesel Generator Loading with Station Blackout

Other Documents

Beaver Valley Power Station Unit 1 Updated Final Safety Analysis Report, Rev. 23, Section 8.5, Emergency Power System

Beaver Valley Power Station Unit 2 Updated Final Safety Analysis Report,

Beaver Valley Power Station Unit 1 Technical Specifications, Section 3/4.8 Electrical power Systems, Amendment 230

Technical Specifications, Beaver Valley Power Station Unit 2, Section 3/4.8, Electrical power Systems, Amendment 109

LIST OF ACRONYMS

ADM	Administrative Procedure
BCO	Basis for Continued Operations
BVPS	Beaver Valley Power Station
CFR	Code of Federal Regulations
CR	Condition Report(s)
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
FENOC	First Energy Nuclear Operating Company
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ISI	Inservice Inspection
LCO	Limiting Conditions for Operations
LER	Licensee Event Report
LHSI	Low Head Safety Injection
NOED	Notice of Enforcement Discretion
NRC	Nuclear Regulatory Commission
OD	Operability Determinations
OST	Operations Surveillance Test
PI	Performance Indicator
PI&R	Problem Identification and Resolution
PMT	Post Maintenance Testing
SDP	Significance Determination Process
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report