



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

November 2, 2011

Mr. Paul A. Harden
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 05000334/2011004 AND 05000412/2011004

Dear Mr. Harden:

On September 30, 2011, 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 October 12, 2011, 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 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,

A handwritten signature in cursive script, appearing to read "Eugene M. DiPaolo".

Eugene M. DiPaolo, Acting Chief
Reactor Projects Branch 6
Division of Reactor Projects

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

Enclosures: Inspection Report 05000334/2011004; 05000412/2011004
w/ Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

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Site Vice President
FirstEnergy Nuclear Operating Company
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/RA/

Eugene M. DiPaolo, Acting Chief
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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. 05000334/2011004 and 05000412/2011004

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Beaver Valley Power Station, Units 1 and 2

Location: Shippingport, PA 15077

Dates: July 1, 2011 through September 30, 2011

Inspectors: D. Spindler, Senior Resident Inspector
E. Bonney, Resident Inspector
T. Moslak, Sr. Health Physicist (DRS)
J. Brand, Reactor Inspector (DRS)
T. Burns, Sr. Reactor Inspector (DRS)

Approved by: Eugene M. DiPaolo, Acting Chief
Reactor Projects Branch 6
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000334/2011004, IR 05000412/2011004; 07/01/2011 – 09/30/2011; Beaver Valley Power Station, Units 1 & 2; Routine Integrated Report

The report covered a 3-month period of inspection by resident inspectors, regional reactor inspectors, and a regional health physics inspector. 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.

No findings were identified.

REPORT DETAILS

Summary of Plant Status:

Unit 1 began the inspection period at 100 percent power. On July 21, the unit was down-powered to 94 percent due to condenser hotwell temperature limitations during hot weather conditions and returned to full power on July 22. The unit remained at 100 percent power for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent power and remained at full power throughout the inspection period.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity [R]

1R01 Adverse Weather Protection (71111.01 – 1 sample)

.1 Seasonal Susceptibility

a. Inspection Scope

The inspectors reviewed hurricane readiness of Unit 1 and Unit 2 river water/service water systems for extreme weather conditions; specifically, hurricanes, high winds, high water level, and other relevant severe weather events. The inspection verified that the indicated equipment, its instrumentation, and supporting structures were configured in accordance with FENOC's procedures and that adequate controls were in place to ensure functionality of the system. The inspectors reviewed licensee procedures and walked down the system. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns (71111.04Q – 3 samples)

a. Inspection Scope

The inspectors performed three 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 1, 'A' Motor driven Auxiliary Feed Water (AFW) pump and turbine driven AFW pump during testing of the 'B' motor driven AFW pump on August 10
- Unit 2, 'A' Train Service Water System (SWS) lineup during 'B' train SWS Limiting Condition for Operation (LCO) entry on August 15
- Unit 2, 125 Volt batteries (2-1, 2-2, and 2-3) during 2-4 battery individual cell voltage degradation on August 11

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Quarterly Sample Review (71111.05Q – 5 samples)

a. Inspection Scope

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. 23. 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.

- Unit 1, Relay Room (Fire Area CR-3)
- Unit 1, Process Rack Room (Fire Area CR-4)
- Unit 1, Battery Rooms 1&3 (Fire Area ES-1)
- Unit 1, Control Room HVAC Equipment Room (Fire Area CR-2)
- Unit 2, Fuel Building (Fire Area FB-1)

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

a. Inspection Scope

The inspectors reviewed a sample of internal flood protection measures for equipment in Unit 2, 2-2 and 2-4 Battery Rooms.

This review was conducted to evaluate FENOC's protection of the enclosed safety-related systems from internal flooding condition. The inspectors performed a walkdown of the area, reviewed the UFSAR, related internal flooding evaluations, and other related documents. The inspectors examined the as-found equipment and conditions to ensure that they remained consistent with those indicated in the design basis documentation, flooding mitigation documents, and risk analysis assumptions.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11).1 Resident Inspector Quarterly Review (71111.11Q – 1 sample)a. Inspection Scope

The inspectors observed a sample of Unit 1 licensed operator simulator training on August 18. The inspectors evaluated licensed operator performance regarding command and control, implementation of normal, annunciator response, abnormal, and emergency operating procedures, communications, technical specification review and compliance, and emergency plan implementation. The inspectors evaluated the licensee staff 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 were identified.

1R12 Maintenance Effectiveness (71111.12 – 1 sample)a. Inspection Scope

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.

- 2A System Station Service Transformer (SSST) availability monitoring during tap changer repair.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control (71111.13 – 4 samples)a. Inspection Scope

The inspectors reviewed the scheduling and control of maintenance 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).

- Unit 1, CR 11-98009, "Probabilistic Risk Assessment (PRA) not performed prior to clearance posting on PRA component" on July 21
- Unit 1, PRA late update to control room on August 1
- Unit 1 and Unit 2, Maintenance risk assessment during a hot weather alert the week of July 18
- Unit 2, 'A' Component cooling water (CCP) pump maintenance activities window extended and associated PRA review on September 20

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15 – 6 samples)a. Inspection Scope

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. In addition, the inspectors verified that technical specification (TS) limiting conditions for operation (LCO) requirements and UFSAR design basis requirements were properly addressed. In addition, the inspectors reviewed compensatory measures implemented to ensure the measures worked and were adequately controlled.

- Unit 1, Urgent rod control alarm during Rod Insertion testing, CR 2011-00582
- Unit 1, Turbine driven auxiliary feedwater pump [1FW-P-2] high oil level in outboard bearing as documented in CR 11-97241
- Unit 1, Part 21 evaluation of installed Velan globe valve, CR 11-97892
- Unit 2, Primary component cooling water pumps oil bubbler design and level settling as documented in WOs 20011932000, 20011933000, 20011933000, and 200028524
- Unit 2, 'B' SWS line pinhole leak prompt operating determination, as documented in CR 2011-00581
- Unit 2, 2A SSST Manual tap changer relay function restoration to exit TS LCO 3.8.1

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)a. Inspection Scope

The inspectors reviewed the following permanent and temporary modifications based on risk significance. The permanent modifications and associated 10 CFR 50.59 screenings were reviewed against the system design basis documentation, including the UFSAR and the TS. The inspectors verified that attributes and parameters within the design documentation were consistent with required licensing and design bases, as well as credited codes and standards, and walked down the systems to verify that changes described in the package were appropriately implemented. The inspectors verified the temporary modifications were implemented in accordance with Administrative (ADM) Procedure, 1/2-ADM-2028, "Temporary Modifications," Rev. 6. The inspectors also verified the post-modification testing was satisfactorily accomplished to ensure the system and components operated consistent with their intended safety function.

- Engineering Change Package 11-0426-00, 1-2 Emergency diesel generator (EDG) Start on Loss of Voltage relay replacement

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 4 samples)a. Inspection Scope

The inspectors reviewed the activities listed below 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, and that operability of the system was restored. In addition, the inspectors evaluated the applicable acceptance criteria to verify consistency with the design and licensing bases, as well as TS requirements. The inspectors witnessed the test or reviewed test data to verify results adequately demonstrated restoration of affected safety functions. The inspectors also verified that conditions adverse to quality were entered into the corrective action program for resolution.

- Unit 1, 1-2 EDG Undervoltage start relay replacement
- Unit 2, 2A SSST Tap charger repair
- Unit 2, Turbine driven auxiliary feedwater pump [2FWE-P22] trip throttle valve stem coupling repair
- Unit 2, 2-4 125 Volt battery jumper installation, 2MSP-E-39-300, Vital Bus Weekly Battery Inspection

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 7 samples)a. Inspection Scope

The inspectors witnessed the performance of or reviewed test data for the seven Operation Surveillance Test (OST) and Maintenance Surveillance (MSP) packages listed below. The reviews verified that the equipment or systems were being tested as required by TS, the UFSAR, and procedural requirements. The inspectors also verified that the licensee established proper test conditions, that no equipment pre-conditioning activities occurred, and that acceptance criteria were met.

- Unit 1, 1OST-36.2, Diesel Generator No. 2 Monthly Test on August 3 (in-service test)
- Unit 1, 1OST-13.2, Quench Spray Pump [1QS-P-1B] Test on August 4
- Unit 1, 1OST-24.3, Motor Driven Auxiliary Feed Pump Test [1FW-P-3B] on August 10
- Unit 2, 2OST-30.2, Service Water Pump [25SWS*P21A] Test on August 25
- Unit 2, 2OST-15.2, Primary Component Cooling Water Pump [2CCP*P21B] Test on July 17
- Unit 2, 2OST-1.12B, Safeguards Protection System Train 'B' SIS Test on August 3
- Unit 2, 2OST-13.1, Quench Spray Pump [2QSS*P21A] Test on September 22

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness [EP]1EP6 Drill Evaluation (71114.06 – 1 sample)a. Inspection Scope

The inspectors observed an emergency preparedness mini-drill and Unit 1 licensed-operator simulator evaluation on August 18. 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. 6, "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. 4, "NRC EPP Performance Indicator Instructions"
- 1/2-ADM-1111.F01, Rev. 3, "Emergency Preparedness Performance Indicators Classifications/Notifications/PARS"
- EPP-I-1a/b, Rev. 14, "Recognition and Classification of Emergency Conditions;"
- 1/2-EPP-I-2, Rev. 35, "Unusual Event"

- 1/2-EPP-I-3, Rev. 33, "Alert"
- 1/2-EPP-I-4, Rev. 33, "Site Area Emergency" and
- 1/2-EPP-I-5, Rev. 34, "General Emergency"

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety [RS]

2RS07 Radiological Environmental Monitoring Program (REMP) (71124.07 – 1 sample)

a. Inspection Scope

During the period July 18 - 21, 2011, the inspector conducted the following activities to verify that the licensee implemented the radiological environmental monitoring program (REMP) consistent with the Site Technical Specifications and the Off-Site Dose Calculation Manual (ODCM) to validate that radioactive effluent releases met the design objectives of Appendix I to 10 CFR Part 50.

This inspection activity represents completion of one (1) sample relative to this inspection area.

REMP Inspections:

The inspector reviewed the 2009 and 2010 Annual Radiological Environmental Operating Reports and the 2010 REMP Land Use Census Report to verify that the environmental monitoring programs were implemented as required by the ODCM.

The inspector walked down nine (of ten) air sampling stations (Nos. 13, 27, 28, 29B, 30, 32, 46.1, 47, 51), two (of three) milk sampling stations (Nos. 25, 96), three (of three) surface water sampling stations (Nos. 2.1, 5, 49A), two (of two) drinking water stations (Nos. 4, 5), and seventeen (of fifty) thermoluminescent (TLD) monitoring stations (Nos. 10, 13, 14, 15, 27, 28, 29B, 30, 32, 45, 45.1, 46, 46.1, 47, 51, 60, 72) to determine if sampling was conducted as described in the ODCM and associated procedures, and to evaluate the sampling equipment material condition.

As part of the walkdown, the inspector observed the technician collect and prepare for analysis air particulate/iodine filter samples, milk samples, and water samples; and verified that environmental sampling was representative of the release pathways as specified in the ODCM, and that sampling techniques were in accordance with approved procedures.

Based on direct observation and review of records, the inspector verified that the primary and redundant meteorological instrumentation was operable, calibrated, and maintained in accordance with the guidance contained in the UFSAR, NRC Regulatory Guide 1.23, and the licensee procedures. The inspector verified that the meteorological data readout and recording instruments in the control room and at the tower were operable for wind direction, wind speed, and delta temperature. The inspector confirmed that redundant instrumentation was operable.

The inspector reviewed the calibration and maintenance records for ten (10) air samplers and observed the technician verifying the calibration of three water compositors.

The inspector reviewed Condition Reports, a Nuclear Oversight audit report (MS-C-10-08-02), and Nuclear Oversight field observation reports, addressing implementation of REMP requirements, to evaluate the threshold for which issues are entered into the corrective action program, the adequacy of subsequent evaluations, and the effectiveness of the resolution. The inspector also reviewed monthly RETS/ODCM effluent occurrence reports to evaluate the adequacy and timeliness of performance indicator information.

The inspector reviewed the results of the licensee's quarterly laboratory cross-check program to verify the accuracy of the licensee's environmental air filter, charcoal cartridge, water, and milk sample analyses.

The inspector reviewed changes made by the licensee to the ODCM as a result of changes to the land use census or sampler station modifications since the last inspection. The inspector also reviewed technical justifications for any change in sampling location (or frequency) and verified the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the radiological condition of the environment.

The inspector walked down the on-site groundwater monitoring wells and discussed programmatic enhancements that are being made in identifying and controlling spills/leaks to groundwater with the Chemistry Department Manager.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

.1 Mitigating System Performance Index (6 samples)

a. Inspection Scope

The inspectors reviewed FENOC's submittal of the Mitigating Systems Performance Index for the following systems for the period of September 1, 2010 through August 31, 2011:

- Unit 1 Auxiliary Feedwater System
- Unit 1 Residual Heat Removal System
- Unit 1 Support Cooling Water System
- Unit 2 Auxiliary Feedwater System
- Unit 2 Residual Heat Removal System
- Unit 2 Support Cooling Water System

To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed FENOC's operator narrative logs, condition reports, mitigating systems performance index derivation reports, event reports and NRC integrated inspection reports to validate the accuracy of the submittals.

.2 Occupational Exposure Control Effectiveness (1 sample)

a. Inspection Scope

The inspector reviewed implementation of the licensee's Occupational Exposure Control Effectiveness Performance Indicator (PI) Program. Specifically, the inspector reviewed condition reports, and associated documents, for occurrences involving locked high radiation areas, very high radiation areas, and unplanned exposures against the criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators. This inspection activity represents the completion of one (1) sample relative to this inspection area; completing the annual inspection requirement.

b. Findings

No findings were identified.

.3 RETS/ODCM Radiological Effluent Occurrences (1 sample)

a. Inspection Scope

The inspector reviewed relevant effluent release reports for the period April 1, 2010 through June 1, 2011, for issues related to the public radiation safety performance indicator, which measures radiological effluent release occurrences that exceed 1.5 mrem/quarter whole body or 5.0 mrem/quarter organ dose for liquid effluents; 5 mrad/quarter gamma air dose, 10 mrad/quarter beta air dose, and 7.5 mrad/quarter for organ dose for gaseous effluents. This inspection activity represents the completion of one (1) sample relative to this inspection area; completing the annual inspection requirement.

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152 – 2 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that FENOC entered issues into the corrective action program at an appropriate threshold, gave adequate attention to timely corrective actions, and

identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for followup, the inspectors performed a daily screening of items entered into the corrective action program and periodically attended condition report screen meetings.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors reviewed site trending results for the time period January through June 2011, to determine if trending was appropriately performed and evaluated by FENOC. This review covered the site trending program under FENOC's Integrated Performance Assessment process, and included a sample of self-assessments from the several organizations at Beaver Valley. This review verifies that existing trends were (1) appropriately captured and scoped by applicable departments, (2) consistent with the inspectors' assessment from the daily CR and inspection module reviews and (3) not indicative of a more significant safety concern. Additionally, the inspectors verified the performance of site trending against NOP-LP-2001, Rev. 23, "Condition Report Process," and NOBP-LP-2018, Rev. 05, "Integrated Performance Assessment /Trending." The inspectors also reviewed quarterly Quality Assurance reports and issues captured in the Activity Tracking database to identify issues and trends to evaluate during the inspection.

b. Findings and Observations

No findings were identified. However, an adverse trend was identified regarding procedure usage by operations and maintenance personnel. Three specific instances of inadequate procedural adherence were noted. One instance resulted in an inadvertent auxiliary feedwater injection at power (CR 11-97132). A second instance resulted in lost data gathered during surveillance testing because procedural steps were marked "N/A" (CR 11-97062). A third instance resulted in an inadvertent actuation of Unit 2 auxiliary feedwater while shutdown (CR 11-90528). The licensee has identified a trend in inadequate procedure usage and has entered the issue into the corrective action process (CR 11-97126).

.3 Annual Sample: Review of On-Line Risk Assessment and Management

a. Inspection Scope

The inspectors reviewed FENOC CRs related to PRA components and, combinations of components removed from service and thereby unavailable during the scheduled work week. The CRs were evaluated for accuracy and comprehensiveness of problem identification, thoroughness of cause determination and effectiveness and timeliness of corrective actions

Twelve CRs were evaluated for compliance with NOP-OP-1007, Revision 10, "Risk Management", 1/2 ADM-2003, Revision 4, "Risk Management Program", and 1/2-ADM-0804, Revision 9, "On-line Risk Assessment and Management". In addition to the

documentation review, the inspectors interviewed the On Line Work Week Manager and PRA Analyst to assess overall coordination and management of scheduled activities involving PRA components to effectively manage plant risk.

b. Findings and Observations

No findings were identified. The inspectors determined that the implementation of the "Risk Management Program" was being managed to effectively apply the PRA model to risk management decision making to ensure that planned work activities on PRA components have been evaluated for PRA impact.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153 – 3 samples)

.1 Plant Event Review

a. Inspection Scope

For the plant events below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to regional personnel and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of additional reactive inspection activities. As applicable, the inspectors verified that FENOC made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed FENOC's follow-up actions related to the events to assure that FENOC implemented appropriate corrective actions commensurate with their safety significance.

- Abnormal Operating Procedure 1/2OM-53C.4A.75.3, Acts of Nature- Earthquake, entry and followup on August 23 due to seismic activity

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report 05000412/2011-002-00: Auxiliary Feedwater System Vent Line Weld Crack Results in Technical Specification Required Plant Shutdown and Valid Reactor Protection System/Engineered Safety Feature Actuation System Actuations

On April 9, 2011, FENOC discovered an active leak during power ascension on the 'A' steam generator (SG) feedwater injection header, which involved entry into TS 3.7.5. During the TS required shutdown, 'A' SG water level reached a low level requiring a reactor trip. The inspectors determined that no new findings of significance were identified (see IR05000412/2011009 NCV 05000334, 412/2011009-01). This LER is closed.

.3 (Closed) Licensee Event Report 05000412/2011-003-00: Automatic Actuation of Standby Service Water Pumps Following Unexpected Service Water Pump Trip

On June 10, 2011, the in-service 'A' service water pump motor failed, resulting in the automatic start of the 'A' and 'B' standby service water pumps due to low service water

header pressure. The inspectors determined that no new findings of significance were identified (see IR05000412/2011009 NCV 05000412/2011009-02). This LER is closed.

4OA6 Management Meetings

.1 Radiological Environmental Monitoring Program (REMP)

The inspector presented the inspection results of 2RS07 to Dan Murray, Director of Performance Improvement, and other members of FENOC staff, at the conclusion of the inspection on July 21. No proprietary information is presented in this report.

.2 Quarterly Inspection Report Exit

On October 12, the inspectors presented the normal baseline inspection results to Paul Harden, Site Vice President, and other members of the licensee staff. 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

S. Baker	Radiation Protection Manager
M. Banko	Environmental & Chemistry Supervisor
G. Cacciani	Design Engineer
S. Checketts	Operations Manager
R. Dinello	Environmental Field Specialist
R. Ferrie	Supervisor, Nuclear Relay Maintenance
B. Furdak	Fleet Oversight Assessor
R. Groggett	Advanced Nuclear Specialist
P. Harden	Site Vice President
G. Henzler	Instrumentation & Control Technician
L. Huyler	Advanced Nuclear Specialist
D. Jones	Staff Nuclear Engineer
M. Kienzle	AFW System Engineer
M. Librich	Reactor Operator
R. Lieb	Director, Site Operations
R. Lubert	Supervisor, Electrical Design
C. Makawka	Staff Nuclear Specialist
M. Manolarus	Director of Engineering
J. Mauck	Regulatory Compliance
D. McBride	Fleet Oversight Manager
C. McFeaters	Manager, Operations
T. McGourty	Flood Program Engineer
J. Miller	Fire Marshall
M. Mitchell	Supervisor, Work Planning
D. Murray	Director, Performance Improvement
D. Neidlinger	Senior Quality Technician
A. Reardon	Staff Nuclear Engineer
J. Redmond	Staff Nuclear Engineer
L. Renz	Advanced Nuclear Specialist
D. Salera	Chemistry Supervisor
D. Schwer	Superintendent, Operations Services
B. Sepelak	Supervisor, Regulatory Compliance
B. Tuite	Manager, Regulatory Compliance

Other Personnel

L. Ryan	Inspector, Pennsylvania Department of Radiation Protection
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LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000334/2010002-01	LER	270 Degree Circumferential Flaw Found on Residual Heat Removal System Drain Valve Socket Weld (IR 05000334/2011002 Section 4OA3)
05000412/2011002-00	LER	Auxiliary Feedwater System Vent Line Weld Crack Results in Technical Specification Required Plant Shutdown and Valid Reactor Protection System/Engineered Safety Feature Actuation System Actuations (Section 4OA3)
05000412/2011003-00	LER	Automatic Actuation of Standby Service Water Pumps Following Unexpected Service Water Pump Trip (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

1/2 OM-53C.4A.75.2, Acts of Nature- Flood, Revision 28
 1/2 OM-53C.4A.75.4, Acts of Nature- Dam Failure, Revision 7
 1/2 OM-53C.4A.75.1, Acts of Nature- Tornado or High Winds Condition, Revision 13

Section 1R04: Equipment Alignment

Procedures

2OM-30.3.B.1, Valve List-2SWS, Revision 39
 1OST-42.3, Motor Driven Auxiliary Feedwater Pump Test [1FW-P-3B], Revision 42
 1OM-24.3.B.1, U-1, Valve List-1FW, Revision 19

Drawings

RM-0430-002, Revision 40
 RM-0424.002, Revision 13
 RM-0424-001, Revision 17

Condition Reports

2011-00581 11-97157 10-46791 08-47692

Other

NRC Letter dated 9/27/2007, Beaver Valley Unit No. 1 Relief Request Regarding the Fourth 10-Year Inservice Testing Program Relief Requests
 Inservice Testing (IST) Program for Pumps and Valves, Pump Relief Request 9, Revision 7
 ASME OM Cod-2001, subsection 1stB
 1FW-P-2, Pump Curve
 Pre-Job Briefing Checklist, Brief #43, FW-P-3B Surveillance Test
 System Health Report, System 24B-SEEBV-1-24 System Unit 1 Auxiliary FE
 MAP-1BV-25, Electrical Equipment Qualification Maintenance Assessment, Revision 19

Section 1R05: Fire Protection

Pre-Fire Plans

1PFP-SRVB-713-Relay Room Fire Area CR-3
1PFP-SRVB-713-Process Rack Room Fire Area CR-4
2PFP-FULB-735-766-Fuel Building Fire Area FB-1
1PFP-SRVB-713-Control Room HVAC Equipment Room CR-2
1PFP-SRVB-713-Battery Rooms 1&3, Fire Area ES-1

Work Orders

200341607 200472310 200474400

Other

NOBP-OP-0015-04, Daily Status Report, Fire Protection System Status, dated 7/27/2011,
Revision 01
1OM-56B.4.C, Safe Shutdown Following a Serious Fire In The Control Building, Revision 9
1/2 PMP-33FP-Fire Doors-IM, Periodic Inspection of Fire Doors, Revision 5
10080-DMC-3443, GL 86-10 Evaluation of Excessive Clearances Between Fire Rated Doors
and Frames, Revision 0
1OST-33-35, Fire Rated assemblies Visual Inspection, Revision 2
CR 2001-01136

Section 1R06: Flood Protection

Procedures

1/2 OM-53C.4A.75.2, Acts of Nature- Flood, Revision 28
1/2 OM-53C.4A.75.4, Acts of Nature- Dam Failure, Revision 7
1/2 OM-53C.4A.75.1, Acts of Nature- Tornado or High Winds Condition, Revision 13
1/2-PIP-M16, Penetration Seals, Revision 7
2OST-33.35, Fire Rated Assemblies Visual Inspection, Revision 2
2OST-33.35A, Fire Rated Assemblies Visual Inspection, Revision 4

Other

2PFP-CB-712
NRC IN 2005-30, Safe Shutdown Potentially Challenged by Unanalyzed Internal Flooding
Events and Inadequate Design

Section 1R11: Licensed Operator Requalification Program

Procedures

1OM-53A.1.E-0(ISS1C), Reactor Trip or Safety Injection, Revision 11
1OM-53A.1.E-1(ISS1C), Loss of Reactor or Secondary Coolant, Revision 14

Condition Reports

2011-00601 2011-00607

Other

White Team mini-drill scenario timeline, dated August 2011

Section 1R12: Maintenance EffectivenessOther

System 36B, System Health Report 2nd Quarter 2011
 System 36B, Maintenance Preventable Functional Failure Report, dated 8/17/11

Condition Reports

2011-01234 11-97251 11-97306 11-97311 11-98014

Section 1R13: Maintenance Risk Assessment and Emergent Work ControlProcedures

1/2 ADM-2033, Risk Management Program, Revision 4

Work Orders

200471414

Condition Reports

11-98075 11-97346

Other

Beaver Valley Unit 1 Weekly Maintenance Risk Summary dated 8/3/11, Revision 1
 Beaver Valley Unit 2 Weekly Maintenance Risk Summary for the week of September 19, 2011,
 Revisions 0-2

Section 1R15: Operability EvaluationsDrawings

8700-RM-424-1, Revision 14
 RM-0430-002, Revision 40
 10080-RM-424-5, Revision 2
 8700-02E18-0002, Revision B
 8700-02040-0009, Revision B

Procedures

10M024.3.B.1, Valve List IFW, Revision 19
 10ST-1.1, Control Rod Assembly Partial Movement Test, Revision 16
 1/2MI-01RC-Rod Control-I, Troubleshooting Guidelines for Rod Control, Revision 6
 NOP-ER-3001-1, Problem Solving Plan, Revision 01
 NOP-LP-2601, Procedure, Use and Adherence, Revision 3
 NOP-WM-2003, Work Management Surveillance Process, Revision 5
 10ST-24.4, Steam Turbine Driven Auxiliary Feed pump Test [1FW-P-2], Revision 46

Condition Reports

11-97892 11-96396 11-96222 11-00582 11-00272 11-97241
 05-01591 04-42790 01-83546

Other

ECP 02-0183, Feedwater Isolation Valve Conceptual Design
 BVPS U1 Operator Logs, dated 8/6/11
 BVPS U2 operator logs, dated 8/14/11-8/15/11
 Analysts, Inc, U2 2FWE-T22, Inboard Turbine Bearing Lubricating Oil Analysis, dated 3/22/2011

U1, Turbine Driven Auxiliary Feedpump [1FP-P-2] Vibration Data.
BVBP-SITE-0009, Pump Packing Guide, Revision 1
Work Order 200347907
NRC IN 2001-19, Improper Maintenance and Reassembly of Automatic Oil Bubblers

Section 1R18: Plant Modifications

Condition Reports

11-97366

Procedures

1MSP-36.54A-E, 1DF 4KV Emergency Bus Diesel Start Undervoltage Relay 27-VF100
Calibration, Revision 9

Work Orders

200432269 200432147 200468374

Section 1R19: Post-Maintenance Testing

Procedures

1/2 RCP-30A-PC, Calibration of Timing Relays, Revision 15
1/2 RCP-1A-PC, Calibration of Auxiliary Relays, Revision 8
1MSP-36.54A-E, 1DF 4KV Emergency Bus Diesel Start Undervoltage Relay 27-VF100
Calibration, Revision 9
1MSP-36-82-E, Functional Test of 1DF 4KV Emergency Bus Loss of Voltage Relay [27-VF100]
and Diesel Start Loss of Voltage Relay [27-VF1100], Revision 8
1MSP-36-56-E, 1DF 4KV Emergency Bus Diesel Start Loss of Voltage Relay 27-VF1100
Functional Test, Revision 20
BV-2BVT-01.39.09, Station Battery [BAT*2-4] Performance Discharge Test, Revision 5
BV-2BVT-01.39.04, Station Battery [BAT*2-4] Service Test, Revision 7
2OST-39.1D, Weekly Station Battery Check [BAT*2-4], Revision 18
2OST-39.5, Station Battery Check, Revision 5

Work Orders

200468374
200468727
200469469

Condition Reports

11-98138 11-98139 11-98136 11-98162 11-98075 11-98014
11-97534

Other

NOTF 600696456
8700-RE-21CT, 4kV Emergency 1AE & 1DF Undervoltage, Revision 12
1008D-E-204, 120V Vital Bus Distribution Panel Sizing, Revision 1

Section 1R22: Surveillance Testing

Procedures

1OST-36.2, Diesel Generator No. 2 Monthly Test, Revision 58
1OST-13.2, Quench Spray Pump [1QS-P-1B] Test, Revision 37

1OST-24.3, Motor Driven Auxiliary Feed Pump Test [1FW-P-38], Revision 42
 2OST-30.2, Service Water Pump [25SWS*P21A] Test, Revision 38
 2OST-15.2, Primary Component Cooling Water Pump [2CCP*P21B] Test, Revision 50
 2OST-1.12B, Safeguards Protection System Train B SIS Test, Revision 45

Condition Reports

11-97855 2011-00209 10-70270 11-94635 2011-00438 2011-00446
 2011-00037 2011-01114

Other

U2 Service Water Pump Vibration Data, 3/13/08 through 8/28/11

Section 2RS07: Radiological Environmental Monitoring Program

Procedures:

1/2-ODC-01.01, ODCM: Index, Matrix, and History of ODCM Changes, Revision 5
 1/2-ODC-02.01, Overall Environmental Monitoring Program, Revision 6
 1/2-ODC-02.03, ODCM: Radiological Environmental Monitoring Programs, Revision 2
 1/2-ODC-03.02, ODCM: Bases for ODCM Controls, Revision 2
 1/2-ODC-03.03, ODCM: Controls for RETS and REMP Program, Revision 5
 1/2-ENV-02.01, Description of Overall Radiological Environmental Monitoring Program,
 Revision 8
 1/2-ENV-03.01, Environmental Sampling, Revision 7
 1/2-ENV-03.02, Maintenance & Calibration of Automatic Water Sampling Equipment, Revision 3
 1/2-ENV-03.03, Maintenance and Calibration of AVS-28A Environmental Sampler, Revision 1
 1/2-ENV-04.02, REMP Calculations, Revision 4
 1MSP-45.17-1, Meteorological Monitoring System Calibration, Revision 28
 1MSP-45.17A-1, Meteorological Monitoring System Calibration, Revision 28
 BIBO-OP-2012, System/Work Practice Prioritization for NEI 07-07, Revision 0
 1/2-ADM-1730, Laboratory Quality Assurance and Instrument Quality Control Program,
 Revision 22

Sampling Sites:

Milk: Nos. 25, 96
 Air Particulate/Iodine: Nos. 13, 27, 28, 29B, 30, 32, 46.1, 47, 51
 Drinking Water: Nos. 4, 5
 Surface Water: Nos. 2.1, 5, 49A
 Thermo-luminescent Dosimeters: Nos 10, 13, 14, 15, 27, 28, 29B, 30, 32, 45, 45.1, 46, 46.1, 47,
 51, 60, 72

Nuclear Oversight (NO) Reports:

Fleet Oversight Audit Report (MS-C-10-08-02)
 Field Observation Reports Nos: BV320114224, BV320093795, BV220093821, BV320093848,
 BV320093883, BV320103932, BV320114154
 Fleet Oversight First Trimester Report 2011

Condition Reports:

11-97516	11-97531	11-97518	11-97297	11-97739	11-92974
11-88282	11-88334	10-82309	10-86844	10-77489	10-78575
10-79472	10-80322	10-82309	10-86844	10-82742	10-71609
10-72229	10-80141	10-71609	10-81504		

Calibration Records

Air Sampler Nos. 6114, 6115, 6116, 6117, 6118, 6119, 6121, 6122, 6125, 6127
 Meteorological Primary & Redundant Instrumentation dated 7/14/2011

Miscellaneous Reports:

2009 and 2010 Annual Radioactive Effluent Release Reports/Annual Environmental Operating Reports

2010 Land Use Census and Evaluations for ODCM Controls 3.12.2

Environmental Cross Check Samples 4th Quarter 2010 and 1st Quarter 2011

Interlaboratory Comparison Program Results – 1st Quarter 2011

Quarterly Area TLD Results for 2009, 2010, and through 1st quarter 2011

Monthly Radiological Effluent Occurrence Reports for April 2010 through June 2011

Monthly Exposure Control Effectiveness Reports for April 2010 through June 2011

Section 40A2: Identification and Resolution of ProblemsCondition Reports

11-92386	11-96151	11-97026	11-97126	11-90528	11-97123
11-92603	11-89144	11-89817	11-97899	11-97521	11-90875
10-72649	10-73098	10-85569	11-92841	11-95161	11-97384
11-98009	2011-00393	2011-00394	2011-00395	2011-00396	

Procedures

½-ADM-0100, Procedure Writer's Guide, Revision 8

NOP-OP-1002, Conduct of Operations, Revision 5

NOP-LP-2601, Procedure Use and Adherence, Revision 3

NOBP-OP-0004, Plant Status Control and Clearance Events, Revision 3

NOP-OP-1007, Risk Management, Revision 10

½-ADM-2033, Risk Management Program, Revision 4

½-ADM-0804, On-Line Risk Assessment and Management, Revision 9

Other

Weekly Maintenance Risk Summary, Revision 0, dated 9/12/11

Top Ten Systems Important to Mitigating Core Damage for BVPS Unit 1 & 2

Section 40A3: Event ResponseCondition Reports

2011-00979	2011-00980	2011-00981	2011-00983	2011-00986	2011-00988
2011-00989	2011-00990	2011-00991	2011-00992	2011-00993	2011-00994
2011-00995	2011-00996	2011-00997	2011-00998	2011-00999	2011-01002
2011-01004	2011-01004	2011-01006	2011-01010	2011-01018	

LIST OF ACRONYMS

ADM	Administrative Procedure
BCO	Basis for Continued Operations
BVPS	Beaver Valley Power Station
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report(s)
FA	Functionality Assessments
FENOC	First Energy Nuclear Operating Company
IMC	Inspection Manual Chapter
IOD	Immediate Operability Determination
IP	Inspection Procedure
ISI	Inservice Inspection
LCO	Limiting Conditions for Operations
LER	Licensee Event Report
MR	Maintenance Rule
MSP	Maintenance Surveillance Package
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OD	Operability Determinations
ODCM	Off-Site Dose Calculation Manual
OST	Operations Surveillance Test
PI	Performance Indicator
PI&R	Problem Identification and Resolution
POD	Prompt Operability Determination
PMT	Post Maintenance Testing
REMP	Radiological Environmental Monitoring Program
SSC	Structures, Systems, and Components
SWS	Service Water System
TLD	Thermo-Luminescent Dosimeter
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report